



**FLORIDA INTERNATIONAL UNIVERSITY**  
**BOARD OF TRUSTEES**  
**ACADEMIC POLICY AND STUDENT AFFAIRS COMMITTEE**

Zoom Meeting  
Public access via <http://webcast.fiu.edu>

**Wednesday, September 9, 2020**  
**9:30 AM**

Or  
*Upon Adjournment of Previous Meeting*

**Chair:** Natasha Lowell

**Vice Chair:** Donna J. Hrinak

**Members:** Cesar L. Alvarez, Jose J. Armas – *Health Affairs liaison*, Dean C. Colson, Joerg Reinhold, Marc D. Sarnoff, Roger Tovar – *Athletics liaison*, Alexandra Valdes

**AGENDA**

- |   |                    |
|---|--------------------|
| 1. Call to Order and Chair's Remarks                                  | Natasha Lowell     |
| 2. Approval of Minutes  | Natasha Lowell     |
| 3. Action Items   |                    |
| AP1. Tenure as a Condition of Employment Nominations                  | Kenneth G. Furton  |
| AP2. Legislative Budget Requests                                      | Kenneth G. Furton  |
| AP3. Textbook and Instructional Materials Affordability Annual Report | Elizabeth M. Bejar |
| 4. Information and Discussion Items                                   |                    |
| 4.1 Academic Affairs Regular Reports                                  |                    |
| ▪ Academic and Career Success   | Valerie Johnsen    |
| ▪ Engagement  | Saif Y. Ishoof     |
| ▪ Enrollment Management and Services                                  | Kevin B. Coughlin  |
| ▪ Information Technology  | Robert Grillo      |
| ▪ Research and Economic Development/ University Graduate School       | Andres G. Gil      |
| ▪ Academic and Student Affairs  | Elizabeth M. Bejar |

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|---------------------------------------|------------------|
| 5. Student Government Updates         | Alexandra Valdes |
| 6. Faculty Senate Updates             | Joerg Reinhold   |
| 7. New Business <i>(If Any)</i>       | Natasha Lowell   |
| 8. Concluding Remarks and Adjournment | Natasha Lowell   |

# FIU Board of Trustees Academic Policy and Student Affairs Committee

**Time:** September 09, 2020 9:30 AM - 10:30 AM EDT

**Location:** Zoom Conference

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<b>1.</b>	<b>Call to Order and Chair's Remarks</b>	<b>Natasha Lowell</b>	
<b>2.</b>	<b>Approval of Minutes</b>	<b>Natasha Lowell</b>	<b>1</b>
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<b>3.</b>	<b>Action Items</b>		
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AP2.	<b>Legislative Budget Requests</b>	<b>Kenneth G. Furton</b>	<b>168</b>
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AP3.	<b>Textbook and Instructional Materials Affordability Annual Report</b>	<b>Elizabeth M. Bejar</b>	<b>203</b>
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<b>4.</b>	<b>Information and Discussion Items</b>		
4.1	<b>Academic Affairs Regular Reports</b>		<b>216</b>
	<ul style="list-style-type: none"> <li>Academic and Career Success</li> </ul>	<b>Valerie Johnsen</b>	

<b>Section</b>	<b>Agenda Item</b>	<b>Presenter</b>	<b>Page</b>
	<ul style="list-style-type: none"> <li>• Engagement</li> </ul>	<b>Saif Y. Ishoof</b>	
	<ul style="list-style-type: none"> <li>• Enrollment Management and Services</li> </ul>	<b>Kevin B. Coughlin</b>	
	<ul style="list-style-type: none"> <li>• Information Technology</li> </ul>	<b>Robert Grillo</b>	
	<ul style="list-style-type: none"> <li>• Research and Economic Development/ University Graduate School</li> </ul>	<b>Andres G. Gil</b>	
	<ul style="list-style-type: none"> <li>• Academic and Student Affairs</li> </ul>	<b>Elizabeth M. Bejar</b>	
<b>5.</b>	<b>New Business</b> <i>(If Any)</i>	<b>Natasha Lowell</b>	
<b>6.</b>	<b>Concluding Remarks and Adjournment</b>	<b>Natasha Lowell</b>	

**THE FLORIDA INTERNATIONAL UNIVERSITY**  
**BOARD OF TRUSTEES**  
**Academic Policy and Student Affairs Committee**  
September 9, 2020

**Subject: Approval of Minutes of Meeting held June 16, 2020**

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**Proposed Committee Action:**

Approval of Minutes of the Academic Policy and Student Affairs Committee meeting held on Tuesday, June 16, 2020 at the FIU, Modesto A. Maidique Campus, Parking Garage 5 (PG5) Market Station, room 155 and via Zoom.

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**Background Information:**

Committee members will review and approve the minutes of the Academic Policy and Student Affairs Committee meeting held on Tuesday, June 16, 2020 at the FIU, Modesto A. Maidique Campus, Parking Garage 5 (PG5) Market Station, room 155 and via Zoom.

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<b>Supporting Documentation:</b>	Minutes: Academic Policy and Student Affairs Committee Meeting, June 16, 2020
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<b>Facilitator/Presenter:</b>	Natasha Lowell, <i>Academic Policy and Student Affairs Committee Chair</i>
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**FLORIDA INTERNATIONAL UNIVERSITY  
BOARD OF TRUSTEES  
ACADEMIC POLICY AND STUDENT AFFAIRS COMMITTEE  
MINUTES  
JUNE 16, 2020**

**1. Call to Order and Chair's Remarks**

The Florida International University Board of Trustees' Academic Policy and Student Affairs Committee meeting was called to order by Committee Chair Cesar L. Alvarez on June 16, 2020 at 11:25 a.m. at the FIU, Modesto A. Maidique Campus, Parking Garage 5 (PG5) Market Station, room 155 and via Zoom.

General Counsel Carlos B. Castillo conducted roll call of the Academic Policy and Student Affairs Committee members and verified a quorum. Present were Trustees Cesar L. Alvarez, *Chair*; Natasha Lowell, *Vice Chair*; Board Vice Chair Jose J. Armas (*joined late; via Zoom*); Dean C. Colson; Donna J. Hrinak (*via Zoom*); Joerg Reinhold; Marc D. Sarnoff; and Alexandra Valdes.

Board Chair Claudia Puig and Trustees Leonard Boord, Gerald C. Grant, Jr., Gene Prescott, and Roger Tovar, and University President Mark B. Rosenberg were also in attendance.

Committee Chair Alvarez welcomed Trustees and the University community. He also welcomed Trustees Donna J. Hrinak and Alexandra Valdes as new Committee members.

In response to a request from Board Chair Claudia Puig, Provost and Executive Vice President Kenneth G. Furton referred Trustees to the materials relating to an overview of University advising, namely, the current advising system, advisor training, development and expectations, advising caseload management and monitoring, advising tools, and the future of advising. In terms of the impact of advising at FIU, he pointed out that the University decreased the average hours to complete a degree and that this was the most improvement in the State University System and also had a positive impact on the Performance Based Funding outcome for the average cost to degree. He further commented that the University has consistently increased the four-year graduation rate, has increased the Academic Progress Rate, and has increased the number of students who are graduating without excess hours.

Provost Furton announced that FIU was ranked among the top three universities in the U.S. in three categories by the Times Higher Education Impact Rankings for its impact on the community, based on United Nations criteria. He further commented that FIU also ranked among the top 50 institutions in the world in four categories.

## **2. Approval of Minutes**

Committee Chair Alvarez asked for questions or comments from the Committee members in terms of the minutes of the Academic Policy and Student Affairs Committee meeting held on Wednesday, February 26, 2020. The Minutes were accepted as written without further comment.

## **3. Action Items**

### **AP1. Tenure Nominations**

Committee Chair Alvarez explained that 25 candidates were nominated for tenure, stating that the nominees selected to receive tenure have demonstrated excellence in scholarly and academic achievement. Provost Furton provided an overview of the University's tenure process and commented that in the aggregate over the past six years, the candidates have received over \$50M in funding, have been published over 644 times, and hold 10 patents.

A motion was made and unanimously passed that the FIU Board of Trustees Academic Policy and Student Affairs Committee recommend to the Florida International University Board of Trustees approval of the Tenure Nominations as specified in the Board materials.

### **AP2. New Program Proposal: Master of Business Administration in Business Analytics (CIP 52.1301)**

Senior Vice President for Academic and Student Affairs Elizabeth M. Bejar presented the Master of Business Administration in Business Analytics new program proposal for Committee review. She explained that the proposed MBA in Business Analytics focuses on developing the essential skills required to pursue careers in big data, or as quantitative analysts. She indicated that students pursuing the 45-credit degree program will gain the broad overview offered in MBA programs as well as the ability to specialize in the application of statistical methods, techniques, and tools to large data sets proliferating across organizations, in an effort to address persistent and evolving business problems. Sr. VP Bejar pointed out that business analytics is relevant to a broad spectrum of industries from healthcare and financial services, to manufacturing and tourism related sectors.

A motion was made and unanimously passed that the FIU Board of Trustees Academic Policy and Student Affairs Committee recommend to the Florida International University Board of Trustees approval of the Master of Business Administration in Business Analytics (CIP 52.1301) new program proposal.

### **AP3. New Program Proposal: Master of Science in Cognitive Neuroscience (CIP: 42.2706)**

### **AP4. New Program Proposal: Ph.D. in Cognitive Neuroscience (CIP: 42.2706)**

Sr. VP Bejar presented the new program proposals pertaining to the Master of Science in Cognitive Neuroscience and Ph.D. in Cognitive Neuroscience for Committee review. She explained that the proposal will move an existing Ph.D. Cognitive Neuroscience major in Psychology to a stand-alone 75-credit degree under a new STEM CIP code. She indicated that cognitive neuroscience is a fast-growing field and that enhanced understanding of basic neurobiological principles that govern behavior can enrich basic research programs in a number of disciplines. She further commented that there is enormous potential for the application of neuroscience to the clinical, medical and educational fields and that cognitive neuroscience research informs clinical psychological therapeutics, pharmaceutical development, medical interventions, and educational practice.



Sr. VP Bejar pointed out that, additionally, this proposal will move an existing M.S. Cognitive Neuroscience major in Psychology to a stand-alone 36-credit degree under the same new STEM CIP code. She indicated that FIU does not directly admit students into this Masters-level program and that the M.S. program is needed as a potential off-ramp for the newly-proposed Ph.D. in Cognitive Neuroscience for students who are unable in reaching doctoral candidate status.

In response to Trustee Natasha Lowell's inquiry regarding the applicability with FIU Embrace, Sr. VP Bejar commented on the proposed programs in terms of the emphasis on topic-specific skills in neuroscience research methodology and data analysis, cognitive, developmental, and behavioral neuroscience, learning and memory, and neuropsychological disorders. Also, in response to Trustee Lowell's inquiry, Vice President of Research and Economic Development and Dean of the University Graduate School Andres G. Gil explained that FIU Embrace collaborates closely with the Department of Psychology and the Center for Children and Families, is funded by the state of Florida, and provides no-cost services to participating families and students.

A motion was made and unanimously passed that the FIU Board of Trustees Academic Policy and Student Affairs Committee recommend to the Florida International University Board of Trustees approval of the Master of Science in Cognitive Neuroscience (CIP: 42.2706) new program proposal.

A motion was made and unanimously passed that the FIU Board of Trustees Academic Policy and Student Affairs Committee recommend to the Florida International University Board of Trustees approval of the Ph.D. in Cognitive Neuroscience (CIP: 42.2706) new program proposal.

In response to Trustee Donna J. Hrinak's inquiry, Sr. VP Bejar commented that the academic program inventory is fluid and dynamic and responds to industry demand, adding that an update on the University's academic program inventory is provided each fall.

#### **AP5. COVID-19 Guidelines for Repopulating FIU Campuses and Regional Academic Locations**

Provost Furton presented the COVID-19 Guidelines for Repopulating FIU Campuses and Regional Academic Locations for Committee review. He explained that on April 18, 2020 a repopulating task force was created in response to the COVID-19 pandemic and charged with developing a plan to repopulate FIU campuses and sites. He pointed out that the repopulating task force broke up into workgroups to address specific themes: risk mitigation measures, educational campaigns, supervisor, business unit head and employee guidelines, and guidelines for screening, testing, tracing and disinfection. Provost Furton indicated that repopulating will occur in phases as local conditions allow with the University reserving the discretion to determine when a transition between phases can occur as well as whether a return to any phase is warranted based on guidance and data from the Centers for Disease Control and Prevention (CDC), state, local, and university health professionals. He provided an overview of the guidelines relating to the three phases for the phased approach to repopulation.

Provost Furton commented that a University-wide campaign, Panthers Protecting Panthers, will be used to educate and inform the FIU community of the "new normal." He added that information on new rules throughout campus will be disseminated via email, informational videos and signage

and that central to the University's Healthy Campus Environment will be the FIU screening app with the same name, the Panthers Protecting Panthers app. He explained that said app will feature a questionnaire to be completed prior to arriving to campus by all students, faculty, and staff. He pointed out that while on campus, and in accordance with CDC guidelines, all faculty, staff, students and visitors will be required to wear a facial covering, adhere to physical distancing policies, and engage in frequent hand washing and sanitizing. He described changes that can be expected around University campuses, including the addition of plexiglass in high density interaction areas, the reconfiguration of classroom and public spaces to allow for physical distancing, and frequent cleaning of high touch areas.

Provost Furton pointed out that minimizing the risk to the University community will require every single stakeholder to take responsibility for following all newly established procedures and commented that the campaign will provide informational videos and materials on how to wear the required facial coverings, how to properly wash hands, what physical distancing means and how reconfigured classrooms will look. He explained that education will be at the forefront, noting that individuals unwilling to comply with all newly established procedures are not welcome on campus. He highlighted examples of signage and plexiglass installations.

Provost Furton pointed out that FIU partnered with Miami-Dade County, the Florida Department of Health, and the Miami-Dade County Fair & Exposition to open a COVID-19 testing site and that to-date over 15,000 tests have been administered since its opening. He explained that testing will be available to anyone experiencing symptoms or with known-contact with a positive case and that testing will also be made available for healthcare faculty, staff and students, researchers working with human subjects, housing populations, and high-density groups (i.e. student athletes, spirit groups, band, etc.). He indicated that the University will establish a baseline before a widespread return to campus and that FIU is in pursuit of a Clinical Laboratory Improvement Amendments (CLIA) certification for two labs to allow for in-house testing. Provost Furton commented on contact tracing and surveillance, noting that increased numbers of infections or a second wave of the virus will be the threshold that will require re-implementation of mitigation measures that must be executed immediately and that student housing has been set aside to isolate any positive cases and plans for support services for those students are in place.

In terms of academic program delivery, Provost Furton explained that all delivery modes, face-to-face, certified hybrid, approved synchronous remote, and quality designed fully online, will be encouraged to use Canvas for course content and assignments to allow for a quick switch to remote should it be needed. He commented that the University can only offer approximately 1/3 of courses face-to-face given decreased classroom capacity and availability due to physical distancing policies and that priority will be given to courses with no reasonable form of online instruction, courses which cannot be deferred to another term, introductory classes, gateway courses, and classes with high FTIC enrollment. Provost Furton provided an overview of fall 2020 delivery modes and presented examples of a Zoom-enabled classroom and decreased capacity in an auditorium classroom.

In terms of the planning assumptions, Trustee Leonard Boord commented on the requirement related to observing physical distancing and wearing a face covering when there is a possibility of not being at least six feet away from another person and recommended the need to clarify that wearing a face covering while observing physical distancing were both required while on campus. In terms of the general guidelines, Trustee Boord further commented on transitioning remote work back to on campus and questioned whether this should be an objective, indicating that in the absence of viable treatments or a vaccine, employees that are able to do so, should continue to work remotely. In response to Board Chair Puig's comments relating to the interactions and use of shared common spaces in student housing, Sr. VP Bejar explained that student housing has been identified to quarantine/isolate any positive cases and mentioned that plans for supportive services for students are in place inclusive of medical care and academic continuity support. In response to Trustee Hrinak's inquiry, Provost Furton explained that the criteria for Phase 1 of the reopening plan has not been met. In response to Committee Chair Alvarez's inquiry on enforcement mechanisms, Provost Furton pointed out that the educational campaign will be at the forefront and noted that central to success is a shift in culture.

A motion was made and unanimously passed that the FIU Board of Trustees Academic Policy and Student Affairs Committee recommend to the Florida International University Board of Trustees approval of the COVID-19 Guidelines for Repopulating FIU Campuses and Regional Academic Locations.

#### **4. Information and Discussion Items**

##### **4.1 Academic Affairs Regular Reports**

There were no questions from the Committee members in terms of the Academic Affairs regular reports included as part of the agenda materials.

##### **4.2 Authorization to establish a Graduate Medical Education Program at the Miami Veterans Affairs Healthcare System - Financial Presentation**

As a follow-up to the Board's April 21, 2020 Full Board meeting, Senior Vice President for Health Affairs and Dean of the Herbert Wertheim College of Medicine (HWCOM) Robert Sackstein facilitated a financial presentation related to the establishment of a Graduate Medical Education (GME) program at the Miami Veterans Affairs Healthcare System (VAHCS). He described funding from the state of Florida, namely, \$830K in recurring legislative appropriation to HWCOM for Primary Care Graduate Medical Education and \$3.6M in HWCOM Carryforward restricted by appropriation for Primary Care Graduate Education. He presented a financial proforma and delineated key dates: HWCOM submitted the Sponsoring Institution Application in May with a decision expected in October 2020; the Primary Care Residency Program Application is due January 29, 2021 with an expected decision in April 2021; and that the Primary Care Residency Program would start in July 2022.

Board Vice Chair Jose J. Armas commended the program. In response to Trustee Roger Tovar, Sr. VP and Dean Sackstein explained that the three-year program expects to have a full complement of 18 residents, with the first six residents projected to start July 1, 2022.

## **5. Student Government Updates**

Trustee Alexandra Valdes, President of the Student Government Council at the Modesto A. Maidique Campus, commented on priorities, including academic success, advocacy, and student engagement.

## **6. Faculty Senate Updates**

Trustee Reinhold, Faculty Senate Chair, indicated that the Faculty Senate has held a number of virtual meetings since the transition to remote instruction and work. He indicated that, during this time, the Faculty Senate has, among other items, changed the Tenure and Promotion manual and reviewed and approved existing standard policies and new policies related to COVID-19. He described one new such policy, noting that the Joint/Combined Graduate Degree Pathways provides highly qualified students with the opportunity to expand their expertise and knowledge through admission into two graduate degree programs before commencing the pathway. He further commented that the policy aligns with the Southern Association of Colleges and Schools Commission on Colleges Principles of Accreditation.

## **7. New Business**

No new business was raised.

## **8. Concluding Remarks and Adjournment**

With no other business, Committee Chair Cesar L. Alvarez adjourned the meeting of the Florida International University Board of Trustees Academic Policy and Student Affairs Committee on Tuesday, June 16, 2020 at 12:30 p.m.

*There were no Trustee requests.*

**THE FLORIDA INTERNATIONAL UNIVERSITY**  
**BOARD OF TRUSTEES**  
**Academic Policy and Student Affairs Committee**  
September 9, 2020

**Subject: Tenure as a Condition of Employment Nominations**

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**Proposed Committee Action:**

Recommend to the Florida International University Board of Trustees the approval of six (6) candidates for Tenure as a Condition of Employment (TACOE).

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**Background Information:**

Pursuant to Florida Board of Governors Regulation 1.001(5)(a), each board of trustees shall provide for the establishment of the personnel program for all the employees of the university, including but not limited to tenure.

The TACOE nominees hold tenure at their previous institutions and have been selected to receive TACOE based on the caliber of their work.

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<b>Supporting Documentation:</b>	Tenure as a Condition of Employment Nominee Overview
	Tenure as a Condition of Employment Nominee Bios
	Tenure as a Condition of Employment Nominees Curriculum Vitas

<b>Facilitator/Presenter:</b>	Kenneth G. Furton
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Florida International University  
Tenure as a Condition of Employment Nominations

<b>Name</b>	<b>College</b>	<b>Department</b>	<b>Proposed Rank</b>
Berrak Bahadir	Steven J. Green School of International and Public Affairs	Economics	Associate Professor
Stephen Black	Herbert Wertheim College of Medicine	Translational Medicine	Endowed University Professor
Shawn Christian	College of Arts, Sciences & Education	English	Associate Professor
Ian Dryden	College of Arts, Sciences & Education	Mathematics and Statistics	Professor
Jason Mitchell	Robert Stempel College of Public Health and Social Work	Health Promotion and Disease Prevention	Associate Professor
Roberto Lucchini	Robert Stempel College of Public Health and Social Work	Environmental Health Science	Professor

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**Berrak Bahadir**  
**Department of Economics**  
**Steven J. Green School of International and Public Affairs**

Berrak Bahadir is joining FIU from University of North Carolina at Greensboro. Previously she served as an Assistant Professor of Economics at University of Richmond, the University of Georgia and Ozyegin University in Istanbul. She earned her PhD from Emory University in 2008.

Dr. Bahadir's research is in international macroeconomics and displays an impressive publication trajectory with a stock of 14 articles in high-quality refereed journals. Her primary research interests are open-economy macroeconomics, business cycles, financial frictions, and credit markets. Her work has been published in the Journal of International Economics, Journal of Banking and Finance, Journal of International Money and Finance, and Economic Inquiry, among others. Her current research focuses on the effects of household debt on business cycles and the link between income inequality and credit expansions. It should be noted that two of her articles, namely those in the Journal of International Economics are her highest ranked publications. The Journal of International Economics is the highest ranked journal in the field of international economics and is in the top-15 in the latest rankings of economics journals. Dr. Bahadir has published in research outlets that the department and the profession recognize as being at the top of the range.

She has taught at all levels – principles and intermediate undergraduate macroeconomics and MA- and doctoral-level offerings. She has also mentored student research at both the undergraduate and doctoral level and received the Swift Award at the University of Georgia in 2012 for outstanding teaching in undergraduate economics. Her teaching evaluations are as impressive as her research output. She has typically received very good and excellent evaluations from her students in all institutions she taught. Currently, she is serving as an Associate Editor at the Journal of Macroeconomics.

**Stephen Black**  
**Department of Translational Medicine**  
**Herbert Wertheim College of Medicine**

Stephen Black, PhD comes to Florida International University from the University of Arizona (UA), where he has served as Professor in Medicine and Physiology, Director of the UA Lung Vascular Pathobiology Program and Interim Chief for the Division of Translational & Regenerative Medicine.

At UA, Black has been an accomplished researcher. His work focuses on understanding the mechanisms underlying the development of the endothelial dysfunction that precedes the development of PH, the role of reactive oxygen species in this process, and understanding how decreased NO signaling leads to the pulmonary vascular remodeling that is associated with more advanced disease. His work at the UA garnered funding to further investigate the mechanisms by which shear stress stimulates the redistribution of endothelial NOS to the mitochondria; the role of PKG nitration in the disruption of endothelial barrier functions in ALI/ARDS; new signaling pathways and potential therapies for VILI/ARDS.

Black's work has been recognized nationally and internationally. He served on the Society for Free Radical Biology & Medicine in St. Thomas as Session Chair, he was the Session Chair for the Center for Disease Control International Endothelium Conference and was the Session Chair for the German Pediatric Cardiology Annual Meeting. He is an Abstract Reviewer and Session Chair for the Pediatric Academic Societies and Abstract Reviewer and Junior Investigator Judge for the Society for Free Radical Biology & Medicine.

**Shawn Christian**  
**Department of English**  
**College of Arts, Sciences & Education**

Dr. Christian received his Ph.D. in English and Education from the University of Michigan, Ann Arbor. He also earned a Master of Arts in English from Temple University and a Bachelor of Arts in English from Florida State University. He has been an Associate Professor of English and African American Studies at Wheaton College since 2010 and has served as an Associate Provost from 2014 to 2018. At Wheaton, he also served as the Program Coordinator of African, African American, and Diaspora Studies in 2013-2014. Dr. Christian was the Director of the Summer Institute for Literary and Cultural Studies (SILCS) from 2010 to 2013, and, was an Assistant Professor at Wheaton from 2003 to 2009. He will begin his appointment as Associate Professor of African American literature in the Department of English this August for the Fall 2020 term.

Dr. Christian's main area of research is 20th century African American literature and culture. In particular, he is interested in the Harlem Renaissance, Black freedom struggle literature of the twentieth century, and African American print culture. One of his recent contributions to academia was *The Harlem Renaissance and the Idea of a New Negro Reader*, a monograph that examines the relationships of writers such as James Weldon Johnson, Jessie Fauset, and Sterling Brown with African Americans' reading of the literature of the period. Dr. Christian has published over a dozen scholarly works and reviews. In addition, he has led and participated in over 20 conferences, lectures, panel presentations, and workshops.

Dr. Christian has received numerous fellowships, grants, and awards throughout his career, including having been chosen as the Martin Luther King, Jr. Legacy Award recipient, National Endowment for the Humanities/Harvard University DuBois Institute Summer Fellow, Mellon/Wheaton Faculty Research Grant recipient, and Riggio Fellow at the Manuscript, Archives, and Rare Book Library at Emory University. He received over \$360,000 as Co-Principal Investigator of an Andrew W. Mellon renewal grant for the Summer Institute for Literary and Cultural Studies (SILCS) at Wheaton College.

Plans for research at FIU include examining the ways in which black gay male writers and activists James Baldwin, Richard Bruce Nugent, and Bayard Rustin are constructed in print narratives which aim to memorialize them and Alice Dunbar Nelson's twentieth century educational philosophy. He plans to use a variety of texts to "make tangible the ways in which African American literature is both a writerly and readerly tradition."

As to his teaching experience, Professor Christian has taught a variety of courses in English departments, African, African American, and Diaspora Studies, American Studies, and Women and Gender Studies. Examples include *Collaborations in 20th Century African American Literature and Culture* and *Harlem Renaissance as a Usable Past*, both senior seminars. He has also taught courses such as *Contemporary Literary and Cultural Theory* and a first-year seminar titled *Reading a Renaissance*.

**Ian Dryden**  
**Department of Mathematics and Statistics**  
**College of Arts, Sciences & Education**

Dr. Dryden received his Ph.D. in Statistics from the University of Leeds in the UK in 1989. He has been a Professor of Statistics at the University of Nottingham since 2000 and has served as its Head of the School of Mathematical Sciences from 2014 to 2018. Dr. Dryden was also a Visiting Assistant Professor at the University of Chicago in 1996-1997.

Dr. Dryden's main area of research is the development of statistical methods for analyzing highly structured data sets, including shapes, images and functional data, and his expertise is aligned with programs at FIU. He has over 150 articles, Google Scholar lists over 8000 citations and an h-index of 34, and he is the coauthor of a highly-cited book on Statistical Shape Analysis published by John Wiley and Sons. Dr. Dryden has received over \$20M in external research funding either as a PI or co-PI from agencies such as the NSF, and in the UK, the Natural Environment Research Council (NERC), the Engineering and Physical Sciences Research Council (EPSRC) and the Biotechnology and Biological Sciences Research Council (BBSRC). Recent awards included \$700K and \$375K as PI and Co-I from EPSRC and NERC. He has been the Honorary Secretary and Chair of the Royal Statistical Society Research Section Committee; he was elected Fellow of the Institute of Mathematical Statistics in 2012, and he is a Chartered Statistician of the Royal Statistical Society.

Professor Dryden has taught a variety of courses in statistics, including Optimization, Time Series Analysis, and Multivariate Analysis, which were all large classes with students of all levels including graduate and undergraduate students. He has graduated 30 Ph.D students and currently is supervising two.

Regarding service/administration, Dr. Dryden served as Head of the School of Mathematical Sciences at Nottingham, with over 100 faculty and staff, 200 graduate students, and about one thousand undergraduates. This experience has added extensive administrative experience to his academic record, on top of other administrative roles throughout his career. The school is in the top 10 in the UK for research and teaching. Under his leadership, research awards from the EU and UK agencies increased to over \$20M. He also played a role in having the School focus on its Equality, Diversity and Inclusion (EDI) program. He was a member of the EDI Committee that successfully applied for a Bronze Athena SWAN award from the Equality Challenge Unit in the UK.

**Jason Mitchell**  
**Health Promotion and Disease Prevention**  
**Robert Stempel College of Public Health and Social Work**

Jason W. Mitchell, PhD, MPH is a recently tenured (August 2019) Associate Professor in the Office of Public Health Studies at the University of Hawai'i at Mānoa. Prior to joining the faculty at the University of Hawai'i in October 2016, Dr. Mitchell held tenure-track positions at the University of Miami Miller School of Medicine, Department of Public Health Sciences, Division of Prevention Science and Community Health (7/2014 to 9/2016) and at the University of Michigan School of Nursing, Division of Risk Reduction and Health Promotion Programs (7/2012 to 6/2014). He obtained his PhD in Public Health in 2010, from Oregon State University in Corvallis, Oregon with a concentration in Health Behavior & Health Promotion; he completed two years of Post-Doctoral Training (2010 to 2012) in HIV Prevention Research at the Center for AIDS Intervention Research (CAIR), Medical College of Wisconsin, Department of Psychiatry and Behavioral Medicine in Milwaukee, Wisconsin.

Research: Dr. Mitchell's most recent NIH-funded grants include two developmental studies: R21MH116684 and 1R21MH118966, both with No-Cost Extensions expiring respectively 05/31/2021 and 07/30/2022. Dr. Mitchell has submitted two grant applications that were reviewed in March 2020 (R34MH124473) and April 2020 (R01MH124758). Dr. Mitchell has a total of 63 peer reviewed publications, the majority in respectable journals in his field of expertise, 42 as first author, 11 as second author and 3 as senior author. It is important to note that 27 of his publications have been with mentored students and/or research assistants.

Teaching: Dr. Mitchell is well qualified to teach in Stempel College. He brings assets that will contribute to the expertise of our Department of Health Promotion and Disease Prevention (HPDP). He has expressed interest in teaching seven courses, many of which align well with courses currently being offered in HPDP (at both the MPH and PhD levels). For example, a course Dr. Mitchell has taught for the past three years, "PH765: Advanced Evaluation Approaches," appears to be an excellent match for PHC 6750, a required course in our MPH program for those with a concentration in HPDP. In addition, he should be able to develop high-demand and strategically important courses in areas where we currently lack expertise. New courses in "LGBT Health" and "Digital Technologies in Public Health" should make primary focus areas of "Health Disparities" and "Innovative Research Methods" attractive to future students.

Service: Based on Dr. Mitchell's CV, his service to the profession has been adequate; he has intermittently served as a grant reviewer for three NIH small business innovative research initiative (SBIR) proposals from 2016-2018. His CV reports no professional service during the past 11 years. Dr. Mitchell lists 27 scientific journals that he has served as an Ad Hoc reviewer. Noteworthy, Dr. Mitchell reports that he has served on a few university committees in the last four years.

**Roberto Lucchini**  
**Department of Environmental Health Sciences**  
**Robert Stempel College of Public Health and Social Work**

Dr. Lucchini received his medical degree from the University of Brescia, Italy. Since 2012, he has moved to New York to join the Icahn School of Medicine at Mount Sinai, where he is currently a professor and the Director of the Division of Occupational and Environmental Medicine.

Dr. Lucchini's expertise and research interests are focused on the health effects of neurotoxic chemicals (such as metals, pesticides, organic pollutants, particulate matter and other toxic chemicals) and the mechanisms by which they cause injury in the human nervous system - ranging from neurodevelopment to neurodegeneration. He has published more than 150 peer-reviewed papers and 25 books and book chapters, and his work has been funded by multiple funding agencies, including NIH, CDC, NIOSH, European Union and the Italian government. He is currently serving as either principal investigator or co-investigator on multiple active grants. During his scientific career, Dr. Lucchini has been funded for about \$48 million.

Dr. Lucchini is well-regarded as a teacher and mentor, having taught undergraduate, graduate and post-graduate levels and having served as a mentor for numerous PhD students.

Regarding service, Dr. Lucchini oversees the Division of Occupational and Environmental Medicine, the World Trade Center Data Center, the NIOSH funded Education and Research Center. He also coordinates the epidemiological health surveillance of the workers involved in the clean-up operations after 9/11. He has also provided substantial professional service as a reviewer for numerous journals and grant review panels and is a member of editorial boards on multiple scientific journals.

## BERRAK BAHADIR

(Former Publishing Name: BERRAK BÜYÜKKARABACAK)

Bryan School of Business and Economics  
University of North Carolina – Greensboro

E-mail: [b\\_bahadi@uncg.edu](mailto:b_bahadi@uncg.edu)

Webpage: [berrakbahadir.com](http://berrakbahadir.com)

### EDUCATION

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2008	Ph.D. in Economics, Emory University, Atlanta
2004	M.A. in Economics, Marmara University, Istanbul, Turkey
2001	B.B.A. in Accounting, Marmara University, Istanbul, Turkey

### EMPLOYMENT

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2020-present	Associate Professor of Economics (with tenure granted on February 5, effective August 1, 2020) University of North Carolina - Greensboro
2017-2020	Assistant Professor of Economics University of North Carolina - Greensboro
2014-2017	Assistant Professor of Economics Ozyegin University, Istanbul
2010-2014	Assistant Professor of Economics Terry College of Business, The University of Georgia, Athens
2008-2010	Assistant Professor of Economics Robins School of Business, University of Richmond, Richmond

### RESEARCH FIELDS

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Macroeconomics; Open-economy macroeconomics; Credit and housing; International finance

### PUBLICATIONS

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1. Bahadir, B. & Valev, T. N. (2020). Institutions, household credit composition and the business cycle. *Economic Inquiry*, forthcoming.
2. Bahadir, B. & Valev, T. N. (2019). Credit information sharing and the shift in bank lending towards households. *International Journal of Finance and Economics*, forthcoming.
3. Bahadir, B. & Gumus, I. (2019). The transmission of household and business credit shocks in emerging markets: The role of real estate. *Real Estate Economics*, forthcoming.
4. Bahadir, B., Chatterjee, S. & Lebesmuehlbacher, T. (2018). The macroeconomic consequences of remittances. *Journal of International Economics* 111, 214-232.
5. Bahadir, B. & Valev, T. N. (2017). Catching up or drifting apart: Convergence of household and business credit in Europe. *International Review of Economics and Finance* 47, 101-114.

6. Bahadır, B. & Gumus, I. (2016). Credit decomposition and business cycles in emerging market economies. *Journal of International Economics* 103, 250-262.
7. Bahadır, B. & Lastrapes, W. (2015). Emerging market economies and the world interest rate. *Journal of International Money and Finance* 58, 1-28.
8. Selgin, G., Beckworth, D., & Bahadır, B. (2015). The Productivity Gap: Monetary policy, the subprime boom, and the post-2001 productivity surge. *Journal of Policy Modeling* 37/2, 189-207.
9. Bahadır, B. & Valev, N. (2015). Financial development convergence. *Journal of Banking and Finance* 56, 61-71.
10. Bahadır, B., & Mykhaylova, O. (2014). Housing market dynamics with delays in the construction sector. *Journal of Housing Economics* 26, 94-108.
11. Büyükkarabacak, B., & Valev, N. (2012). Credit information sharing and banking crises: An Empirical investigation. *Journal of Macroeconomics* 34 (3), 788-800.
12. Beck, T., Büyükkarabacak, B., Rioja, F., & Valev, N. (2012). Who gets the credit? And does it matter? Household vs. firm lending across countries. *The B.E. Journal of Macroeconomics (Contributions)*, 12, 1-44.
13. Büyükkarabacak, B., & Valev, N. (2010). The role of household and business credit in banking crises. *Journal of Banking and Finance*, 34, 1247-1256.
14. Büyükkarabacak, B., & Krause, S. (2009). Studying the effects of household and firm credit on the trade balance: The composition of funds matters. *Economic Inquiry*, 47 (4), 597-605.

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## **WORKING PAPERS AND WORK IN PROGRESS**

1. “Financial development and advertising spending” (with S. Cem Bahadır) Conditionally accepted at *Journal of International Marketing*
2. “Household debt, consumption and inequality” (with Kuhelika De and William D. Lastrapes) Submitted
3. “Macroeconomic implications of student debt: A State-level analysis” (with Dora Gicheva) Submitted
4. “House prices, collateral effects and business cycles in emerging market economies” (with Inci Gumus)
5. “Global liquidity, household credit and business cycles” (with Neven Valev)
6. “Inequality, household debt and business cycles” (with Kuhelika De)
7. “The effects of household credit shocks on business credit” (with Matthew Schaffer and Inci Gumus)
8. “Credit constraints, house price persistence and collateral effects” (with Inci Gumus)
9. “Remittances, food prices and business cycles” (with Kuhelika De)



## SEMINAR AND CONFERENCE PRESENTATIONS

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**2019:** FDIC Consumer Research Symposium, Midwest Macroeconomics Meetings, 13<sup>th</sup> Winter Workshop in Economics, Ozyegin University, 12<sup>th</sup> Southeastern International/Development Economics Workshop.  
**2018:** Canadian Economics Association Conference, Southern Economics Association Meetings  
**2017:** Middle East Economic Association Meetings, Catalan Economic Society Conference  
**2016:** Marmara University, Central Bank of the Republic of Turkey, Macroprudential Instruments and Financial Cycles Workshop, Istanbul Central Banking Research Department, ICMAIF, ISCEF  
**2015:** International Symposium on Money, Banking and Finance, Econometric Society World Congress  
**2013:** Canadian Economics Association Conference, American Economic Association Meetings  
**2012:** Computational Economics Association Conference, Midwest Macroeconomics Meetings  
**2011:** European Economic Association Conference, Southeastern International Workshop  
**2010-2005:** Southern Economic Association Meetings, Midwest Macroeconomics Meetings, European Economic Association Conference, North American Econometric Society Meetings

## HONORS, AWARDS and FELLOWSHIPS

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2019	Dean's Research Scholar Program Award, Bryan School of Business and Economics, UNC-G
2012	George P. Swift Award for Outstanding Teaching in Undergraduate Economics, UGA
2007	Joseph Heyman Scholarship, Atlanta
2003-2007	Graduate Fellowship, Department of Economics, Emory University

## TEACHING

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Principles of Macroeconomics (online and face-to-face), Money and Banking, Intermediate Macroeconomics, Mathematical Economics, International Business Environment, Macroeconomics in a Global Economy (EMBA), International Trade and Finance, Advanced Macroeconomic Theory (Master and PhD level)

## SERVICE

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### Discipline Level Service

Associate Editor: *Journal of Macroeconomics* (2019 – current)  
Session Organizer and Chair: Southern Economic Association (2018)  
Decision Committee Member: Midwest Macroeconomics Meetings May (2019)  
Ad-hoc Reviewer: Journal of International Economics, Real Estate Economics(x4), Journal of Financial Stability, Journal of Finance, Journal of Money Credit and Banking, Journal of Economic Dynamics and Control, Journal of Banking and Finance(x8), Economic Inquiry, Journal of Housing Economics, Review of World Economics, Macroeconomic Dynamics, International Review of Economics and Finance, Central Bank Review, Journal of Economic Studies, International Finance

### Department & College Level Service

UGA Undergraduate Senior Thesis Advising: August 2010-May 2014  
UGA Macroeconomics PhD Preliminary Exam Committee: June 2011-June 2014  
Ozyegin University Economics Seminar Series Co-organizer: September 2015-May 2017  
UNC-G Undergraduate Curriculum Committee: August 2017-August 2018  
UNC-G Department of Economics Seminar Series Organizer: January 2018-May 2019  
UNC-G Online MA in Economics Program Committee: August 2018-May 2019  
UNC-G Strategic Planning Committee: September 2017-current

UNC-G Faculty Search Committee: October 2017-March 2018

UNC-G Dissertation Committees: Morgan Boyce 2018-current; Samar Alwehaibi 2018-current

UNC-G Department of Economics Graduate Programs Committee: August 2019-current

UNC-G Master Final Project: Nina Khalili 2019

## REFERENCES

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Robert S. Chirinko  
Department of Finance  
University of Illinois at Chicago  
Email: [chirinko@uic.edu](mailto:chirinko@uic.edu)

Neven T. Valev  
Department of Economics  
Georgia State University  
Email: [nvalev@gsu.edu](mailto:nvalev@gsu.edu)

William D. Lastrapes  
Department of Economics  
University of Georgia  
Email: [last@uga.edu](mailto:last@uga.edu)

DATE OF REVISION September 24, 2019

**CURRICULUM VITAE**

***Stephen Matthew Black, Ph.D.***

Professor, Department of Medicine & Physiology  
University of Arizona

**PERSONAL**

Office Address	AHSC Room 7141B PO BOX 245099 University of Arizona Tucson, AZ 85719
Office Telephone	520-621-1729
Email	steveblack@email.arizona.edu
Home Address	8987 E. Tanque Verde Rd. STE#309-423 Tucson, AZ 85749
Date of Birth	30 November, 1964
Place of Birth	Kirkcaldy, Scotland
Citizenship	US/UK joint citizenship
Sex	Male
Race	Caucasian
Marital status:	married

**EDUCATION**

High School

Dates

Attended      Institution & location

1978- 1982      Beath High School, Scotland

College

Dates

Attended      Institution & location  
                         Major

Degrees conferred,  
title or status

1982- 86      University of Edinburgh, Scotland      B.Sc. Hons Molecular Biology

Graduate

<u>Dates</u> <u>Attended</u>	<u>Institution &amp; location</u>	<u>Degrees conferred,</u> <u>title or status</u>	<u>Major</u>
1986-89	University of Edinburgh, Scotland	1990, Ph.D.	Molecular Pharmacology

POSTDOCTORAL TRAINING

<u>Dates</u> <u>Attended</u>	<u>Institution &amp; location</u>	<u>Major</u>
1989-1990	University of Edinburgh, Scotland	Molecular Pharmacology
1991-1993	University of California, San Francisco	Molecular Endocrinology

**PROFESSIONAL****ACADEMIC APPOINTMENTS**

Title	Institution	Dates
Research Chemist	University of California, San Francisco	03/1993-09/1994
Assistant Professor	University of California, San Francisco	10/1994-02/1999
Associate Professor	Northwestern University	03/1999-06/2003
Associate Professor	University of Montana	07/2003-06/2005
Associate Professor	University of Washington	07/2003-03/2006
Professor	University of Montana	06/2005-03/2006
Professor	Augusta University (formerly Medical College of Georgia)	04/2006-12/2014
Professor	University of Arizona	01/2015-present

**ADMINISTRATIVE APPOINTMENTS**Research

Title	Institution	Dates
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Laboratory Director Child Health Research Center	University of California, San Francisco	07/1997-02/1999
Research Director Division of Neonatology	Northwestern University	03/1999-06/2003
Director of Vascular Biology	St. Patrick Hospital	07/2003-04/2006
COBRE Group leader	University of Montana	07/2004-04/2006
Head, Program in Pulmonary Vascular Disease	Augusta University	07/2007-12/2014
Director, Cardiovascular Discovery Institute	Augusta University	07/2010-12/2014
Director, Center for Lung Vascular Pathobiology	University of Arizona	01/2015-present
Dept Medicine P&T committee	University of Arizona	06/2015-present
Chair, Dept. Medicine Space Committee	University of Arizona	06/2015-present
UAVitae evaluation Committee	University of Arizona	01/2018-present
Interim Chief, Division of Translational & Regenerative medicine	University of Arizona	08/2019-present

**RESEARCH ACCOMPLISHMENTS****Grants Awarded as Principle Investigator/Project Leader**

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**ACTIVE**

- 1R01HL131331-01 03/01/2017 – 03/31/2021  
NIH/NHLBI \$2,227,000 Total Costs  
Title: Nitric Oxide Synthase-Mitochondrial interactions & endothelial dysfunction  
Objectives: The overall goals of this proposal are to achieve a clearer understanding of the mechanisms by which shear stress stimulates the redistribution of endothelial NOS to the mitochondria.  
Role: PI
- 1P01HL134610-02 02/01/2018 – 01/31/2023  
NIH/NHLBI \$12,500,000 Total Costs  
Title: Genetics, Epigenetics and Post-translational Modifications in the Development of Ventilator-induced Lung Injury (VILI)  
Objectives: The overall goals of this proposal are to identify new signaling pathways and potential therapies for VILI/ARDS.  
Role: PI
- R01HL142212-01A1 07/01/2018 – 06/30/2022  
NIH/NHLBI \$1,900,000 Total Costs  
Title: PKG Signaling and Sepsis Induced ALI  
Objectives: To investigate the role of PKG nitration in the disruption of endothelial barrier function in ALI/ARDS  
Role: PI
- 5R21AI135935 (Ledford/Mansour) 12/01/2017-11/30/2019  
NIH/NIAID \$425,000 Total Costs  
Title: Surfactant protein a as a novel therapeutic for asthma  
Objectives: To investigate the role of a specific 10 AA sequence within the carbohydrate recognition domain (CRD) of SP-A as a suppressor of allergic inflammation.  
Role: Co-I
- 011384 (PI: Hecker) 10/17/2016 - 09/29/2019  
Boehringer Ingelheim International GmbH  
Determination of the Efficacy of Nintedanib in an Aging Mouse Model of Established/Persistent Lung Fibrosis and to Evaluate Novel Mechanisms of Nintedanib in Age-Relevant in Vitro and in Vivo Models  
Role: Co-I

**PENDING**

- 1P01HL146269-01A1 04/01/2020 – 03/31/2025  
NIH/NHLBI \$ 11,884,298 Total Costs  
Title: Metabolic Reprogramming and Pulmonary Vascular Disease in Congenital Heart Disease

Objectives: The overall goals of this proposal are to investigate the role of mechanical forces in the metabolic reprogramming associated with the development of pulmonary vascular disease in children born with complex congenital heart defects.

Role: PI

1R01HL152514-01

04/01/2020 – 03/31/2025

NIH/NHLBI

\$2,602,355 Total Costs

Title: Role of protein nitration in early inflammatory phase of ventilator-induced lung injury (VILI)

Objectives: The goals of this proposal are to investigate the role of eNOS uncoupling and protein nitration in the stimulation of inflammatory signaling during VILI.

1R01 HL152589-01

04/01/2020 – 03/31/2025

NIH/NHLBI

\$2,410,450 Total Costs

Title: Dysregulation of the NF- $\kappa$ B/Sox18/CLDN5 axis during sepsis induced ALI

Objectives: The goals of this proposal are to investigate how NF- $\kappa$ B signaling disrupts barrier function during sepsis through the attenuation of the expression of the Sox18 transcription factor, Sox18.

1 R01 HL152456-01

04/01/2020 – 03/31/2025

NIH/NHLBI

\$3,036,158 Total Costs

Title: Arginine recycling in neonatal congenital heart disease

Objectives: The goals of this proposal are to elucidate the mechanisms by which the conversion of L-citrulline to L-arginine is disrupted by increased PBF and pressure resulting in attenuated NO signaling and pulmonary endothelial dysfunction.

## **PREVIOUS**

R01 HL60190 (BLACK)

09/01/14-04/30/19

NHLBI

\$2,200,000 Total costs

### ***Perinatal Regulation of endothelial NOS***

We are investigating the post-translational mechanisms that regulate endothelial NOS during the fetal to newborn transition

Role: PI

UAHS Multidisciplinary Program Feasibility Award

### ***UA U54 CounterAct development***

\$200,000 total costs

This support is to help with the revised application to the NIH Counteract Program to develop a U54 Center of Excellence at the University of Arizona. This is a multi-disciplinary award with investigators from Both the College of Medicine and Pharmacy participating.

Role: co-PI (with Donna Zhang, PhD, College of Pharmacy)

R01 HL061284 (FINEMAN, UCSF; Black PI on subcontract)

07/01/2013 -6/30/2017

NHLBI

\$800,000 total costs

### ***Perinatal pulmonary hypertension: developmental mediators***

The major goal of this project is to determine the therapeutic potential of L-carnitine supplementation to attenuate the development of endothelial dysfunction in children with CHD and increased PBF.

Role: PI on subcontract

P01 HL101902

07/10/11-12/31/16

NHLBI

\$11,347,000 total costs

***Endothelial barrier protection and repair in acute lung injury***

The central theme of this program project proposal is that the disruption of the RhoA-Rac1 balance during acute lung injury is mediated by enhanced protein nitration. The program is made up of four projects and three supporting Cores.

Role: PI

RO1 NHD39110 (BLACK) 09/14/06-07/31/12  
 NICHD \$1,300,000 total costs

***Role of neuronal NOS dimerization in neurotoxicity***

We are elucidating how pathways that regulate oxidative and nitrosative stress interact to produce perinatal stroke.

R01HL084739 07/16/2007- 04/30/13  
 NHLBI \$1,400,000 total costs

***Perinatal regulation of TGF beta 1 during vascular remodeling***

We are investigating the mechanisms that regulate TGF beta 1 activation under conditions of increased pulmonary blood flow.

R01 HL67841 (BLACK) 07/01/08-04/30/14  
 NHLBI \$1,800,000 total costs

***Reactive oxygen species in PPHN: Role of ADMA***

The goals of this project are to determine the mechanism by ADMA alters carnitine biosynthesis during the development of pulmonary hypertension and to define the role played by cRAT nitration in this process.

R21 HD057406 (BLACK) 07/01/08-06/30/12  
 NICHD \$500,000 total costs

***Role of Altered Carnitine Metabolism in Perinatal Endothelial Dysfunction***

Our goals are to determine how loss of PPAR gamma signaling alters the expression of the enzymes involved in endothelial carnitine homeostasis.

R01 HL061284 (FINEMAN, UCSF-subcontract) 07/01/2008 -6/30/2012  
 NHLBI \$600,000 total costs

National, Heart, Lung, and Blood Institute

***Perinatal pulmonary hypertension: developmental mediators***

The major goals of this project are to evaluate endothelial function in pulmonary vascular disorders. These include chronic models of pulmonary hypertension secondary to in utero placement of aorto-pulmonary grafts.

Network Grant (BLACK) 10/01/05-09/31/11  
 LeDuq Foundation \$6,000,000 total costs

***Pulmonary vascular remodeling: Early Determinants in congenital Heart Disease (PEDCARD)***

The overall goals of this proposal are to achieve a clearer understanding of the role of early vascular dysfunction in the development of pulmonary hypertension associated with single ventricle physiology.

R01 HL079102 (ROSSI, Wayne State-subcontract) 09/01/05-06/30/10  
 NHLBI \$125,000 total costs

***Neural Control of Na Balance in Hypertension***



The overall goals of this proposal are to achieve a clearer understanding of the role NOS isoforms and NO signaling in neuronal control of systemic blood pressure.

RO1 HL070061 (BLACK) 02/01/03-12/31/08  
NHLBI \$1,800,000 total costs

***NO-mediated signaling in endothelial cells***

The objectives of this proposal were to delineate the mechanisms by which inhaled NO and NO donors inhibit eNOS activity.

HL072123 (BLACK) 12/01/02-11/30/08  
HNLBI \$1,200,000 total costs

***eNOS Dimer Disruption and Endothelial Dysfunction***

The objectives of this proposal were to delineate the different mechanisms by which hydrogen peroxide modulates eNOS expression and activity.

Grant-In-Aid 0550133Z (BLACK) 01/01/05-12/31/08  
AHA \$198,000 total costs

***Effect of shear stress on VEGF receptor signaling in endothelial cells***

The objectives of this proposal were to delineate how shear stress regulates the expression of the VEGF receptors Flt-1 and flk-1.

RO1 HL60190 (BLACK) 12/01/03-09/30/09  
NHLBI \$1,500,000 Total costs

***Perinatal Regulation of endothelial NOS***

The objectives of this award were to evaluate how estrogen regulates endothelial NOS during the fetal to newborn transition

R01 HL061284 (FINEMAN, UCSF-subcontract) 07/01/03 -6/30/2008  
NHLBI \$900,000 total costs

***Perinatal pulmonary hypertension: developmental mediators***

The major goals of this project were to develop acute models of pulmonary hypertension secondary to in utero placement of aorto-pulmonary grafts and to analyze the effect on ET signaling.

RO1 NHD39110 (BLACK) 09/14/99-07/31/04  
NICHD \$1,400,000 total costs

***Role of neuronal NOS dimerization in neurotoxicity***

The overall objective of this award was to elucidate how neuronal NOS was regulated during perinatal stroke.

RO1 HL60190 (BLACK) 04/01/98-03/31/03  
NHLBI \$500,000 Total costs

***Perinatal Regulation of endothelial NOS***

The objectives of this award were to evaluate how shear stress regulates endothelial NOS during the fetal to newborn transition.

R01 HL061284 (FINEMAN, UCSF-subcontract) 07/01/98 -6/30/2003  
NHLBI \$100,000 total costs

***Perinatal pulmonary hypertension: developmental mediators***

The major goals of this project were to develop a chronic model of pulmonary hypertension secondary to in utero placement of an aorto-pulmonary graft and to analyze the effect on NO signaling.

Scientist Development Grant (BLACK) 01/01/98-12/31/02  
AHA \$260,000 total costs

***Effect of shear stress on eNOS expression***

The objectives of this proposal were to delineate how shear stress regulates the expression of endothelial NOS.

R56 NHD39110 (BLACK) 09/14/98-08/31/99  
NICHD \$100,000 total costs

***Role of neuronal NOS dimerization in neurotoxicity***

The overall objective of this award was to elucidate how neuronal NOS was regulated during perinatal stroke.

Grant-In-Aid (BLACK) 07/06/06-06/30/99  
AHA \$165,000 total costs

***Inhibition of eNOS by nitric oxide***

The objectives of this proposal were to delineate the mechanisms by which inhaled NO and NO donors inhibit eNOS activity.

REAC (BLACK) 07/06/06-06/30/99  
UCSF \$18,000 total costs

***Inhibition of eNOS by nitric oxide***

The objectives of this proposal were to delineate the mechanisms by which inhaled NO and NO donors inhibit eNOS activity.

ASCOR (BLACK) 07/06/06-06/30/99  
UCSF \$16,500 total costs

***Inhibition of eNOS by nitric oxide***

The objectives of this proposal were to delineate the mechanisms by which inhaled NO and NO donors inhibit eNOS activity.

**Grants Awarded to Trainees**

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**PREVIOUS**

American Heart Association Pre-doctoral Fellowship (Gross; 2012-2014) ***Sox18 and acute lung injury***

National Heart Lung & Blood Institute K99/ROO (Sud; 2009-2011) ***Beta-arrestin and NO signaling in endothelial cells***

American Heart Association Pre-doctoral Fellowship (Aggarwal; 2009-2011) ***PKG nitration in pulmonary hypertension***

National Heart Lung & Blood Institute KO8 (Oishi, 2007-2010) ***Vascular dysfunction with increased pulmonary blood flow: a role for PPAR gamma*** (co-mentor)

Ruth L. Kirschstein National Research Service Award (Wiseman, 2007-2009) ***Disruption of Zn<sup>2+</sup> homeostasis in endothelial cells***

American Heart Association Pre-doctoral Fellowship (Wilham; 2005-2007) ***Regulation of NO signaling by zinc***

Montana IDeA Networks of Biomedical Research Excellence Program (Rau, 2004-2006) ***Carnitine homeostasis in perinatal asphyxia***

National Institute of Child Health & Human Development K12 (Oishi, 2004-2007) ***Vascular dysfunction with increased pulmonary blood flow*** (co-mentor)

### **Invited Presentations at National and International Conferences**

- 2004: Peroxynitrite 2004, Konstanz, Germany
- 2004: IEEE annual meeting, San Francisco CA
- 2005: CDC International Endothelium Conference, Crete, Greece
- 2006: First International Symposium on Cardiovascular Biology, Prague, Czech Republic
- 2006: German Microvascular Society Annual Meeting
- 2009: Fondation Leducq Symposium, Collège de France in Paris
- 2009: German Pediatric Cardiology Annual Meeting
- 2012: 6th International Symposium on Asymmetric Dimethylarginine

### **Invited Presentations & Visiting Professorships**

- 1989: Stanford University School of Medicine.
- 1990: University of Sheffield, England, U.K. Dept. of Pharmacology
- 1990: CRC Glasgow, Scotland, U.K. Drug Resistance Seminar Series.
- 1992: Vanderbilt University, Tennessee. Molecular Biology Seminar Series.
- 1993: Children's Hospital Oakland Research Institute, Invited Speaker.
- 1997: Biomedical Research Institute, University of Dundee, Scotland, U.K.
- 1998: California Society of Pediatric Cardiology. Invited Speaker.
- 1998: Northwestern University Medical School. CMIER Lecture Series.
- 1999: Northwestern University Medical School. Basic Science Symposium. Robert H. Lurie Comprehensive Cancer Center
- 1999: Northwestern University Medical School. Fienberg Cardiovascular Research Institute Seminar Series.
- 2000: UC Davis Department of Bioengineering
- 2000: SUNY Buffalo, Department of Pediatrics
- 2001: University of Edinburgh CVRI
- 2001: Children's Hospital Oakland Research Institute
- 2001: Perinatal Biology Group, Loma Linda University
- 2003: Children's Memorial Hospital, Chicago, IL
- 2003: Neonatology Research Seminar Series, UC San Francisco
- 2003: Division of Critical Care Medicine Seminar Series, UC San Francisco

- 2004: Ruff Club, Missoula, MT
- 2004: Vascular Biology Center Seminar Series, Medical College of Georgia
- 2005: Vera Moulton Wall Center for Pulmonary Vascular Disease, Stanford University
- 2006: Pediatric Developmental Biology Seminar Series, UC San Francisco
- 2007: Division of Critical Care Medicine Seminar Series, UC San Francisco
- 2008: The Research Institute at Nationwide Children's Hospital Center for Perinatal Research
- 2010: Annual Research Symposium, Endocrinology & Reproductive Physiology Program, University of Wisconsin, Madison
- 2011: Dept. Physiology, University of Arizona, Tucson
- 2011: Paris-Centre de recherche Cardiovasculaire (Le PARCC), Paris, France
- 2011: Vascular Biology Center, Georgia Health Sciences University.
- 2012: Department of Medicine, Georgia Health Sciences University.
- 2013: Department of Internal Medicine, Georgia Regents University.
- 2014: Department of Physiology, University of Sydney, Sydney, Australia
- 2014: Division of Pulmonary Medicine, University of Arizona.
- 2014: Department of Pharmacology, University of Illinois, Chicago.
- 2014: Division of Translational Medicine, University of Arizona.
- 2014: Institute of Pathology, Hannover Medical School, Hannover, Germany
- 2018: OHSU Center for Developmental Health, Portland, Oregon
- 2018: Department of Medicine, University of Dundee
- 2018: School of Veterinary Medicine, LSU
- 2018: Department of Medicine, University of Edinburgh
- 2018: School of Biological Sciences, University of Edinburgh

#### Publications in Peer-Reviewed Journals

1. **Black, S.M.**, Ellard, S., Meehan, R.R., Parry, J.M., Adesnik, M., Beggs, J.D., Wolf, C.R. (1989) The expression of cytochrome P450IIB1 in *S. cerevisiae* results in an increased mutation frequency when exposed to cyclophosphamide. Carcinogenesis 10: 2139-2143.
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## **Abstracts Presented at National & International Meetings Since 2000**

### ***Pediatric Academic Societies-2000***

#### **[2082] Copper-Zinc but Not Manganese Superoxide Dismutase Protects Endothelial NO Synthase from Inhibition by Nitric Oxide**

**Authors:** Stephen M. Black, Janine M. Bekker

### ***Pediatric Academic Societies-2001***

#### **[163] Endothelin B-Mediated Pulmonary Vasoconstriction in 8-Week-Old Lambs with Increased Pulmonary Blood Flow**

**Authors:** Stephen M. Black, Janine M. Bekker, Boaz Ovadia, Stefan Thelitz, Olaf Reinhartz, Michael Johengen, Eugenia Mata-Greenwood, Jeffrey R. Fineman

#### **[282] Lipopolysaccharide (LPS) Affects In Vitro Response of Vascular Cell Adhesion Molecule (VCAM-1) to Mechanical Stretch**

**Authors:** David M. Steinhorn, Lisa Brennan, Lisa Forquer, Stephen M. Black

#### **[1519] Reactive Oxygen Species Act as Endothelium-Derived Hyperpolarizing Factors in Lamb Pulmonary Arteries**

**Authors:** Robin H. Steinhorn, Sylvia F. Gugino, Lisa Forquer, Stephen Wedgwood, James A. Russell, Stephen M. Black

#### **[1530] Lack of Programmed Cell Death in Remodeling Vascular Smooth Muscle During Pulmonary Hypertension**

**Authors:** Robert W. Dettman, Stephen Wedgwood, Robin H. Steinhorn, Jeffrey R. Fineman, Stephen M. Black

#### **[1718] Transforming Growth Factor -1 Increases Vascular Endothelial Growth Factor Through Reactive Oxygen Intermediates**

**Authors:** Nicolas F.M. Porta, Eugenia Mata-Greenwood, Jeffrey R. Fineman, Stephen M. Black

#### **[1742] Nitric Oxide Mediated Activation of p21<sup>ras</sup> Results in Increased Superoxide Formation in Endothelial Cells and Leads to Endothelial NOS Inactivation**



**Authors:** Lisa A. Brennan, Stephen Wedgwood, Janine M. Bekker, Stephen M. Black

**[1824] Ethanol Induces Cytotoxic Oxidative Stress in PC12 Cells: Protection by Scavengers of Reactive Oxygen Species**

**Authors:** Maria L.V. Dizon, Lisa A. Brennan, Stephen M. Black

**[2016] Involvement of PKC $\delta$ - and  $\epsilon$ - in the Synergistic Action of NGF and Ethanol on PC12 Differentiation and Neuronal NOS Regulation**

**Authors:** Maria L.V. Dizon, Stephen M. Black

**[2024] The Induction of Reactive Oxygen Species Production Is a Critical Event in the Mitogenic Effect of Endothelin-1 on Fetal Pulmonary Arterial Smooth Muscle Cells**

**Authors:** Stephen Wedgwood, Robert W. Dettman, Stephen M. Black

**[2026] Acute Pulmonary Vasoconstriction in the Fetal Lamb Following Constriction of the Ductus Arteriosus: A Role for Nitric Oxide and Endothelin-1**

**Authors:** Boaz Ovadia, Janine M. Bekker, Alexander Kon, Stephan Thelitz, Michael J. Johengen, Karen Hendricks-Munoz, Rene Gerrets, Stephen M. Black, Jeffrey R. Fineman

**[2019] Increased Production of Reactive Oxygen Species in a Lamb Model of Persistent Pulmonary Hypertension**

**Authors:** Robin H. Steinhorn, Stephen Wedgwood, James A. Russell, Sylvia F. Gugino, Satyan Lakshminrusimha, Stephen M. Black

***Pediatric Academic Societies-2002***

**{173} Developmental Differences in the Shear Stress-Induced Expression of eNOS: Changing Role of AP-1**

**Authors:** Stephen Wedgwood, Calista J. Mitchell, Everett A. Roark, Stephen M. Black

**{185} Superoxide Produced by Nitric Oxide Synthase (NOS) Impairs Vascular Relaxations in Pulmonary Arteries Isolated from Lambs with Congenital Heart Disease and High Pulmonary Blood Flow**

**Authors:** Robin H. Steinhorn, Satyan Lakshminrusimha, James A. Russell, Stephen M. Black, Jeffrey R. Fineman

**[368] Brain Anti-Oxidant Enzyme Expression and Function During Development**

**Authors:** Janine Y. Khan, Stephen M. Black.

**[2061] Regulation of Endothelin-1 Release by Protein Kinase C Activation**

**Authors:** Lisa K. Kelly, Stephen M. Black

**[2098] Nitric Oxide Synthase Levels Increase in Fetal Guinea Pig Brain Following *In Utero* Exposure to Ethanol**

**Authors:** Maria L. V. Dizon, Stephen M. Black

**[2269] Biphasic Effects of Nitric Oxide on Fetal Pulmonary Arterial Smooth Muscle Cell Growth**

**Authors:** Stephen Wedgwood, Lisa A. Brennan, Jing Lu, Tamas Jilling, Stephen M. Black

**[2728] TGF- 1-Mediated VEGF Upregulation in an Ovine Model of Pulmonary Hypertension Secondary To Increased Pulmonary Blood Flow**

**Authors:** Eugenia Mata-Greenwood, Jeffrey R. Fineman, Stephen M. Black

**[2730] Nitric Oxide Synthase Is a Source of Superoxide in Pulmonary Artery Endothelial Cells (PAEC) from Juvenile but Not Fetal Lambs**

**Authors:** Robin H. Steinhorn, Lisa Forquer, Stephen Wedgwood, Stephen M. Black

**[2751] Induction of Apoptosis in Fetal Pulmonary Arterial Smooth Muscle Cells by EUK-134, a Synthetic Combined Superoxide Dismutase/ Catalase Mimetic**

**Authors:** Stephen Wedgwood, Stephen M. Black

***Pediatric Academic Societies-2003***

**[2007] Hydrogen Peroxide Is a Vascular Signaling Molecule in Pulmonary Arteries (PA) Isolated from Juvenile Lambs**

**Authors:** Eugenia Mata-Greenwood, James A. Russell, Sylvia F. Gugino, Chrystal Jenkins, Stephen M. Black, Robin H. Steinhorn.

**[2448] Activation of Soluble Guanylate Cyclase Mediates the Nitric Oxide Dependent Decrease in Endothelin-1 Release from Cultured Pulmonary Artery Endothelial Cells**

**Authors:** Lisa K. Kelly, Stephen M. Black.

**[3217] Nitric Oxide Synthase Is a Source of Superoxide in Pulmonary Artery Endothelial Cells (PAEC) from Juvenile but Not Fetal Lambs: Role of Hsp90 and Biopterin (BH<sub>4</sub>)**

**Authors:** Eugenia Mata-Greenwood, Chrystal Jenkins, Girija G. Konduri, Stephen M. Black, Robin H. Steinhorn.

**[3132] Role of Endothelin-1-Induced Reactive Oxygen Species in the Down-Regulation of eNOS Gene Expression in Persistent Pulmonary Hypertension of the Newborn (PPHN)**

**Authors:** Stephen Wedgwood, Robin H. Steinhorn, Lisa A. Brennan, Stephen M. Black.

***Pediatric Academic Societies-2004***

**[182] Loss of NO Synthase (NOS) Activity After Hypoxia-Ischemia in the Newborn Rat Is not Associated with a Decrease in Tetrahydrobiopterin (BH<sub>4</sub>) or NOS Dimer Levels**

**Authors:** Mark S. Wainwright, Elsa Arteaga, Ryan Fink, Kandasamy Ravi, Stephen M. Black.

**[183] Simultaneous Real Time Monitoring of Nitric Oxide and Cerebral Blood Flow *In Vivo* During Hypoxia-Ischemia in the Newborn Rat**

**Authors:** Mark S. Wainwright, Ryan Finak, Elsa Arteaga, Dava Derbin, Stephen M. Black.

**[184] Hydroxyl Radical (OH<sup>-</sup>) Levels Increase After Hypoxia-Ischemia (HI) in the Newborn Brain by a Nitric Oxide (NO)-Dependent Mechanism**

**Authors:** Mark S. Wainwright, Ryan Fink, Elsa Arteaga, Dava Derbin, Stephen M. Black.

**[251] Role of FGF-2 in Vascular Remodeling Associated with Increased Pulmonary Blood Flow and Pulmonary Hypertension**

**Authors:** Stephen Wedgwood, Jennifer DeVol, Anthony Azakie, Jeffrey R. Fineman, Stephen M. Black.

**[332] PEG-SOD Prevents Rebound Pulmonary Hypertension and the NOS Inhibition Associated with Inhaled Nitric Oxide Therapy in Lambs**

**Authors:** Peter E. Oishi, Boaz Ovadia, Michael Myette, Cynthia Harmon, Michael Johengen, Stephen M. Black, Jeffrey R. Fineman.

**[354] Acute Alterations in Nitric Oxide and Endothelin-1 Following Surgically Induced Increases in Pulmonary Blood Flow in the Postnatal Lamb**

**Authors:** Peter E. Oishi, Robert Fitzgerald, Anthony Azakie, Boaz Ovadia, Gregory Ross, Michael Myette, Karen Hendricks-Munoz, Jie Xu, Stephen M. Black, Jeffrey R. Fineman.

**[2481] Prostacyclin, NO and O<sub>2</sub> Interactions in PPHN**

**Authors:** Nicolas F. M. Porta, Sylvia F. Gugino, James A. Russell, Stephen M. Black, Robin H. Steinhorn.

**[2674] NO Regulates PDE5 Gene Expression in Ovine Pulmonary Vascular Smooth Cells in a Developmental Fashion**

**Authors:** Kathryn N. Farrow, Arun K. Bhatia, Sylvia F. Gugino, Stephen M. Black, James A. Russell, Robin H. Steinhorn.

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**Authors:** Eugenia Mata-Greenwood, Chrystal Jenkins, Sylvia F. Gugino, James A. Russell, Stephen M. Black, Robin H. Steinhorn.

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**Authors:** Stephen Wedgwood, Jennifer M. DeVol, Albert Grobe, Eileen Benavidez, Anthony Azakie, Jeffrey R. Fineman, Stephen M. Black.

**[2321] Increased Pulmonary Blood Flow Increases NOS Activity but Decreases Bioavailable NO in an Animal Model of Congenital Heart Disease A Role for Superoxide Production?**

**Authors:** Peter Oishi, Anthony Azakie, Cynthia Harmon, Albert Grobe, Eileen Benevidez, Chie-Youn Shih, Stephen M. Black, Jeffrey R. Fineman.

**[2323] Alterations in Plasma B-Type Natriuretic Peptide Following Repair of Congenital Heart Disease with Cardiopulmonary Bypass A Potential Prognostic Tool**

**Authors:** Chie-Youn Shih, Cynthia Harmon, Peter Oishi, Ritu Asija, Anil Sapru, Anthony Azakie, Micheal Myette, Stephen Black, Jeffery R. Fineman.

**[2521] The Role Oxidative Stress in the Development of Pulmonary Hypertension**

**Authors:** Albert C. Grobe, Eileen Benavidez, Peter Oishi, Jeffrey R. Fineman, Stephen M. Black.

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**[4832.102] Disruption of Zinc Homeostasis Underlies Oxidative and Nitrosative Stress-Induced Apoptosis in Fetal Pulmonary Endothelial Cells**

**Authors:** Dean A. Wiseman, MaryAnn Hubbard, Jonathan Welker, Stephen M. Black.

**[4835.107] Asymmetric Dimethylarginine (ADMA) Levels Following Repair of Congenital Heart Disease (CHD)**

**Authors:** Cynthia Harmon, Sandra M. Wells, Chie-Youn Shih, Anil Sapru, Michael Myette, Peter Oishi, Stephen M. Black, Jeffrey R. Fineman.

**[4835.108] Alterations in Downstream Mediators of the NOcGMP Cascade in a Lamb Model of Congenital Heart Disease with Increased Pulmonary Blood Flow (PBF)**

**Authors:** Peter Oishi, Albert Grobe, Cynthia Harmon, Anthony Azakie, Chie-Youn Shih, Stephen M. Black, Jeffrey R. Fineman.

**[4365.8] Oxidants and Antioxidants Modulate Endothelial Nitric Oxide Synthase (eNOS) Promoter Activity Via the Transcription Factor AP-1**

**Authors:** Sanjiv Kumar, Stephen Wedgwood, Stephen M. Black.

**[4685.3] Increased Asymmetric Dimethylarginine (ADMA) Levels in Lambs with Pulmonary Hypertension and Increased Pulmonary Blood Flow Is Due to a Hydrogen Peroxide Mediated Decrease in Dimethylarginine Dimethylaminohydrolase (DDAH) Activity**

**Authors:** Sandra M. Wells, Albert C. Grobe, Peter Oishi, Jeffrey R. Fineman, Stephen M. Black.

***Pediatric Academic Societies-2007***

**[6291.21] Increased FGF Receptor 1 Expression Is Associated with Increased Pulmonary Blood Flow**

**Authors:** Stephen M. Black, Jennifer M. DeVol, Jeffrey R. Fineman, Stephen Wedgwood.

**[7140.8] ZnCl<sub>2</sub> Increases Barrier Function in Pulmonary Arterial Endothelial Cells (PAEC) through Increased Activity of Endothelial NO Synthase (eNOS)**

**Authors:** Anita D. Smith, Jason Wilham, Albert C. Grobe, John D. Catravas, Stephen M. Black.

**[7740.8] Potential Mechanism for Zn<sup>2+</sup>-Associated Mitochondrial Disruption and Induction of Apoptosis Following Acute Nitrosative or Oxidative Stress in Pulmonary Endothelial Cells**

**Authors:** Dean A. Wiseman, Stephen M. Black.

**[7911.8] Decreased Nitric Oxide (NO) Generation in Lambs with Pulmonary Hypertension and Increased Pulmonary Blood Flow Is Associated with Alterations in NO Synthase Substrate and Co-Factor Levels**

**Authors:** Shruti Sharma, Neetu Sud, Albert C. Grobe, Cynthia Harmon, Jeffrey R. Fineman, Stephen M. Black.

**[7911.9] Alterations in the ET-1 Cascade during Postnatal Development in Lambs with Normal**

**and Increased Pulmonary Blood Flow**

**Authors:** Cynthia T. Harmon, Peter E. Oishi, Michael J. Johengen, Anthony Azakie, Stephen M. Black, Jeffrey R. Fineman.

**[7911.11] Tezosantan Increases NOSIII Activity through a Hydrogen Peroxide (H<sub>2</sub>O<sub>2</sub>) Mediated Increase in Ser1177 Phosphorylation**

**Authors:** Sanjiv Kumar, Albert C. Grobe, Melisa Bunderson, Peter E. Oishi, Cynthia Harmon, Jeffrey R. Fineman, Stephen M. Black.

**[7911.12] Superoxide-NO Interactions Following Acute Ductal Constriction in the Fetal Lamb**

**Authors:** Jong-Hau Hsu, Cynthia T. Harmon, Peter E. Oishi, Dean M. Wiseman, Michael J. Johengen, Eniko Sajti, Omar Chikovani, Stephen M. Black, Jeffrey R. Fineman.

***Pediatric Academic Societies-2008***

**[3060.8] Cyclic Stretch Stimulates FGF-2 and FGF R1 Expression in Pulmonary Arterial Smooth Muscle Cells Via ROS Mediated Activation of the Cyclin D1/E2F Pathway**

**Authors:** Stephen M. Black, Paul T. Schumacker, Stephen Wedgwood.

**[3765.8] Acute Zinc-Associated Mitochondrial Disruption and Induction of Apoptosis Is Mediated Through Altered Glutathione Homeostasis in Pulmonary Arterial Endothelial Cells**

**Authors:** Dean A. Wiseman, Stephen M. Black.

**[3770.2] Caveolin 1 Positively Regulates Estrogen Mediated NO Signaling in Pulmonary Arterial Endothelial Cells**

**Authors:** Neetu Sud, Stephen M. Black.

**[3770.3] Effect of PPAR Inhibition of Endothelial Cell Gene Expression: A Microarray Analysis**

**Authors:** Jing Tian, Anita Smith, Nikhil Garge, Jinxiong She, Peter Oishi, Jeffrey R. Fineman, Stephen M. Black.

**[3770.13] BNP/cGMP Signaling and Endothelial Permeability *In Vitro* and *In Vivo***

**Authors:** Saurabh Aggarwal, Anita Smith, Jeffrey R. Fineman, Stephen M. Black.

**[4330.10] Exogenous Nitric Oxide Increases GTP Cyclohydrolase I Expression Both *In Vitro* and *In Vivo***

**Authors:** Xutong Sun, Sanjiv Kumar, Jeffrey R. Fineman, Stephen M. Black.

**[4487.19] Alterations in the TGF- 1/VEGF Axis During Cardiopulmonary Bypass**

**Authors:** Sanjiv Kumar, Dorelan Miller, Jong-Hau Hsu, Peter E. Oishi, Omar Chikovani, Anthony Azakie, Ian Adatia, Jeffrey R. Fineman, Stephen M. Black.

**[4488.1] Alterations in the Plasmin System Correlate with TGF- 1 Activation in Lambs with Increased Pulmonary Blood Flow and Pulmonary Hypertension**

**Authors:** Sanjiv Kumar, Dorlean Miller, Cynthia Harmon, Peter Oishi, Jeffrey R. Fineman, Stephen M. Black.

**[4488.13] Altered Carnitine Metabolism and Mitochondrial Dysfunction in Lambs with**

**Pulmonary Hypertension Secondary to Increased Pulmonary Blood Flow**

**Authors:** Shruti Sharma, Neetu Sud, Dean A. Wiseman, Lee Carter, Sanjiv Kumar, Yali Hou, Thomas Rau, Jason Wilham, Cynthia Harmon, Peter Osihi, Jeffrey R. Fineman, Stephen M. Black.

***Pediatric Academic Societies-2009***

**[2540.10] Endothelin-1 Inhibits Endothelial NOS Transcription Via PKC Mediated STAT3 Activation**

**Authors:** Neetu Sud, Stephen M. Black.

**[3700.9] Shear Stress Stimulates Nitric Oxide Signaling in Pulmonary Arterial Endothelial Cells Via a Reduction in Catalase Activity: Role of Protein Kinase C delta**

**Authors:** Sanjiv Kuamr, Neetu Sud, Fabio V. Fonseca, Manal Elgaish, Stephen M. Black.

**[4340.205] Gene Profiling of Early Determinants in the Pulmonary Vascular Remodeling Induced by Congenital Heart Disease**

**Authors:** Jing Tian, Sohrab Fratz, Jinxiong She, Jeffrey R. Fineman, Stephen M. Black.

**[4755.2] Impaired Lymph Flow in an Animal Model of a Congenital Cardiac Defect with Increased Pulmonary Blood Flow**

**Authors:** Sanjeev A. Datar, Peter E. Oishi, Jing Tian, Eniko Sajti, Oscar Osario, Angela Aramburo, Konstantine Xoinis, Gary Raff, Stephen M. Black, Michael A. Matthay, Jeffrey R. Fineman.

***SFRBM 16<sup>th</sup> Annual meeting 2009***

**The structure of eNOS provides N-terminal rearrangements during redox stress that closes the catalytic cavity**

**Authors:** Ruslan Rafikov, Fabio V Fonseca, Charlie Darragh, Shawn Elms, David Fulton, and Stephen Black

**eNOS covalent dimerization: novel mechanism of multimeric redox enzymes protection**

**Authors:** Ruslan Rafikov, Olga Rafikova, and Stephen M Black

**Identification of tyrosine 247 as the site of PKG, susceptible to peroxynitrite-mediated nitration during the development of pulmonary hypertension**

**Authors:** Saurabh Aggarwal, Sanjiv Kumar, Ruslan Rafikov, Fabio Fonseca, Anita Smith, Jeffrey R Fineman, and Stephen M Black.

***14<sup>th</sup> World Congress of Gynecological Endocrinology-2010***

**Development of a peptide that attenuates the plasma membrane translocation of estrogen receptor alpha**

**Authors:** Black, S.M., Wiseman, DA, Sud, N.

**Follicle depletion induced by 4-vinylcyclohexene diepoxide leads to endothelial dysfunction secondary to the uncoupling of NOSIII**

**Authors:** Black, S.M., Kumar S, Sharma S, Sun X, Mintz JD, Hoyer PB, Stepp DW.

***Pediatric Academic Societies-2010***

**[1135.5] Early Rho-Kinase Activation in a Model of Congenital Heart Disease with Increased Pulmonary Blood Flow**

**Authors:** Gokhan Kalkan, Cynthia Harmon, Peter Oishi, Sanjeev Datar, Jubilee Barton, Rambod Amirnovin, Angela Aramburo, Konstantine Xoinis, Neetu Sud, Anthony Azakie, Stephen M. Black, Jeffrey R. Fineman.

**[3120.2] L-Carnitine Treatment Preserves Pulmonary Vascular Endothelial Function in an Animal Model of Congenital Heart Disease with Increased Pulmonary Blood Flow**

**Authors:** Angela Aramburo, Shruti Sharma, Peter Oishi, Sanjeev Datar, Kon Xoinis, Gokhan Kalkan, Cynthia Harmon, Sanjiv Kumar, Neetu Sud, Gary Raff, Stephen M. Black, Jeffrey R. Fineman.

**[3120.4] Rosiglitazone, a PPAR- $\gamma$  Agonist, Preserves Endothelial Function in a Lamb Model of Increased Pulmonary Blood Flow**

**Authors:** Peter Oishi, Shruti Sharma, Sanjiv Kumar, Sanjeev Datar, Gary Raff, Anthony Azakie, Cynthia Harmon, Michael Johengen, Stephen M. Black, Jeffrey R. Fineman.

***American Thoracic Society-2010***

**Heat shock protein 90 inhibitors prevent LPS-induced RhoA activation and LPS-induced hyper-permeability of human lung microvascular endothelial cells (HLMVEC).**

**Authors:** Dimitropoulou, C., Snead, C., Chang, A.S-Y, Black, S.M. and Catravas, J.D. Am J Respir Crit Care Med 181;2010: A2668

**LPS mediated endothelial barrier disruption: Role of hydrogen peroxide.**

**Authors:** S. Aggarwal, S. Kumar, J. Tian, A. Smith, S. Black. Am J Respir Crit Care Med 181;2010: A3611

**LPS-induced hyper-permeability of human lung microvascular endothelial cells (HLMVEC) involves the nitration-mediated activation of RhoA.**

**Authors:** Rafikov, R., Sud, N., Aggarwal, S., Kumar, S., Hou, Y., Snead, C., Catravas, J.D., Black, S.M. Am J Respir Crit Care Med 181;2010: A3618

**CHIP-dependent GTP cyclohydrolase I degradation underlies the decrease in tetrahydrobiopterin levels in lambs with congenital heart disease and increased pulmonary blood flow: Role of asymmetric dimethylarginine.** Sun, S. Sharma, Y. **Authors:** Hou, J. Tian, S. Kumar, A. Smith, I. Rehmani, J.D. Catravas, C. Patterson, J.R. Fineman, S. Black. Am J Respir Crit Care Med 181;2010: A6720

**LPS decreases dimethylarginine dimethylaminohydrolase (DDAH) activity through the activation of pp60<sup>Src</sup>.**

**Authors:** Sharma, S., Kumar, S., Aggarwal, S., Sud, N., Hou, Y., Snead, C., Catravas, J.D., and Black, S.M. Am J Respir Crit Care Med 181;2010: A6476.

***Pediatric Academic Societies-2011***

***Endothelin-1 Acutely Stimulates Endothelial Nitric Oxide Synthase eNOS): Role of Calcineurin and pp60src.***

**Authors:** Sanjiv Kumar, Neetu Sud, hruti Sharma, Yali Hou, Satish K. Noonepalle, Richard C. Venema, Stephen M. Black. Publication 1670.5.

***Carnitine Homeostasis Is Altered in Patients with Increased Pulmonary Blood Flow Due to Ventricular Septal Defects.***

**Authors:** Aida Field-Ridley, Shruti Sharma, Roberta L. Keller, Peter E. Oishi, Sanjeev A. Datar, Stephen M. Black, Jeffrey R. Fineman. Publication 2928.326

***L-Arginine Supplementation Prevents the Asymmetric Dimethylarginine (ADMA) Mediated Disruption of Nitric Oxide (NO) Signaling in Lambs with Increased Pulmonary Blood Flow: Role of Carnitine Homeostasis.***

**Authors:** Xutong Sun, Shruti Sharma, Sanjiv Kumar, Ruslan Rafikov, Saurabh Aggarwal, Sohrab Fratz, Christian Schreiber, Jeffrey R. Fineman, Stephen M. Black. Publication 4435.4

***Chronic PPAR $\gamma$  Antagonism Increases Superoxide Production and Induces Endothelial Dysfunction in Juvenile Lambs.***

**Authors:** Jubilee R. Barton, Sanjiv Kumar, Sanjeev A. Datar, Hsuan-Chang Kuo, Peter E. Oishi, Stephen M. Black, Jeffrey R. Fineman. Publication 4445.5

***Hydrogen Peroxide Mediates Nitric Oxide-Endothelin-1 Interactions after Surgically Induced Acute Increases in Pulmonary Blood Flow in Lambs.***

**Authors:** Peter Oishi, Sanjiv Kumar, Ruslan Rafikov, Saurabh Aggarwal, Yali Hou, Satish K. Noonepalle, Stephen Wedgwood, Sanjeev A. Datar, Shruti Sharma, Anthony Azakie, Jeffrey R. Fineman, Stephen M. Black. Publication 4517.258.

**American Thoracic Society-2011**

***Nitration-Mediated Inhibition Of Protein Kinase G Is Involved In The Barrier Disruptive Effect Of Lipopolysaccharide, [Publication Page: A4181]***

**Authors:** C. Gross, S. Aggarwal, S. kumar, C. Snead, R. Rafikov, J.D. Catravas, S.M. Black.

***SOX-18 Protects The Endothelium From Shear Stress Induced Barrier Disruption, [Publication Page: A3762]***

**Authors:** S. Aggarwal, J. Tian, C. Gross, S.M. Black.

**ERS-Amsterdam 2011**

***2940: Lipopolysaccharide attenuates endothelial barrier function through a pp60Src mediated inhibition of dimethylaminohydrolase (DDAH).***

**Authors:** S. Aggarwal, S. Sharma, S. Kumar, Y. Hou, S. Black,

***P4591: The nitration mediated inhibition of Rac1 is involved in the endothelial barrier dysfunction induced by lipopolysaccharide.***

**Authors:** C. Gross, R. Rafikov, S. Aggarwal, Y. Hou, S. Black

**SFRBM 18th Annual meeting 2011**

***Role of epidermal growth factor receptor autophosphorylation in pulmonary hypertension development***



**Authors:** O Rafikova, R Rafikov, S Aggarwal, S Sharma, J Desai, SM Black.

***The anti-proliferative effect of bosentan in occlusive pulmonary hypertension***

**Authors:** O Rafikova, R Rafikov, S Kumar, S Sharma, S Aggarwal, F Schneider, D Jonigk, S Tofovic, SM Black.

***Post-translational regulation of RhoA and Rac1***

**Authors:** R Rafikov, Pardo, D, S Aggarwal, Gross CM, SM Black.

***Nitration mediated activation of Akt involved in endothelial nitric oxide synthase translocation***

**Authors:** R Rafikov, O Rafikova, S Aggarwal, Gross CM, J Desai, SM Black.

**American Thoracic Society-2012**

***Sox18 And The Regulation Of Endothelial Barrier Function In Acute Lung Injury, [Publication Page: A6716]***

**Authors:** C. Gross, BS, S. Aggarwal, MD, PhD, S. Kumar, PhD, C. Snead, BS, J.D. Catravas, Ph.D., S.M. Black, PhD

***Role Of PKC $\alpha$  And eNOS In G<sup>+</sup> Toxin-Induced Acute Lung Injury, [Publication Page: A2119]***

**Authors:** D. Fulton, Ph.D., R. Rafikov, PhD, F. Chen, Ph.D., S. Kumar, Ph.D., J. Qian, Ph.D., S.M. Black, PhD

***Ligand-Independent EGFR Activation In The Development Pulmonary Hypertension, [Publication Page: A4758]***

**Authors:** O. Rafikova, MD, PhD, R. Rafikov, PhD, S. Aggarwal, MD, PhD, D. Jonigk, MD, S.M. Black, PhD.

***Asymmetric Dimethylarginine (ADMA) Mediated Activation Of Akt1 Signaling In Endothelial Cells, [Publication Page: A4824]***

**Authors:** R. Rafikov, PhD, S. Aggarwal, MD, PhD, O. Rafikova, MD, PhD, X. Sun, PhD, C. Gross, BS, Y. Hou, MS, S.M. Black, PhD.

***Redox Regulation Of Rac1 In LPS Mediated Endothelial Cell Hyper-Permeability, [Publication Page: A4963]***

**Authors:** R. Rafikov, PhD, S.M. Black, PhD.

**6th International Symposium on Asymmetric Dimethylarginine-2012**

***Asymmetric Dimethylarginine (ADMA) Disrupts Mitochondrial Bioenergetics And Attenuates NO Signaling Via The Proteasomal Degradation Of GTP Cyclohydrolase I (GCHI)***

**Authors:** S Black; S Sharma; X Sun; S Kumar; R Rafikov; J Fineman; Y Hou; P Oishi; S Datar; G Raff, JR Fineman.

**Keystone Symposia conference-Pulmonary Vascular Disease and Right Ventricular Dysfunction: Current Concepts and Future Therapies, Monterey CA September 2012**

***Asymmetric Dimethylarginine (ADMA) Disrupts Mitochondrial Bioenergetics And Attenuates NO Signaling Via The Proteasomal Degradation Of GTP Cyclohydrolase I (GCHI)***

**Authors:** S Sharma; X Sun; S Kumar; R Rafikov; J Fineman; S Black; Y Hou; P Oishi; S Datar; G Raff

***Nitration mediated activation of Akt1 signaling disrupts mitochondrial bioenergetics in pulmonary arterial hypertension via endothelial nitric oxide synthase (eNOS) redistribution***

**Authors:** R Rafikov; O Rafikova; X Sun; S Aggarwal; C Gross; Y Hou; S Black

***Role of ligand-independent epidermal growth factor receptor (EGFR) activation in the development of pulmonary hypertension.***

**Authors:** O Rafikova; R Rafikov; D Jonigk; S Aggarwal; SM Black.

***Krueppel-like factor 2 (KLF-2) enhances NADPH oxidase activity in lambs with increased pulmonary blood flow (PBF) by suppressing peroxisome proliferator-activated receptor gamma (PPAR $\gamma$ ) expression.***

**Authors:** JR Fineman, SS Zhan, PE. Oishi, S Sharma, S Aggarwal, Q Lu, SA Datar, S Kumar, G Raff, A Azakie, J-H Hsu, E Sajti, S Fratz, SM Black.

***Preserving mitochondrial function using L-carnitine prevents the pulmonary endothelial dysfunction associated with increased pulmonary blood flow (PBF).***

**Authors:** SM Black; S Sharma; SA Datar; A Field-Ridley; R Keller; PE Oishi; JR Fineman.

***PPAR $\gamma$  regulates carnitine homeostasis, mitochondrial function and NO signaling in a lamb model of pulmonary hypertension associated with increased pulmonary blood flow***

**Authors:** PE Oishi; S Sharma; R Rafikov; X Sun; SM Black; G Raff; JR Fineman; S Kumar; A Sharma; Y Hou; SA Datar.

***The nitration-mediated inhibition of PKG-1 $\alpha$  is involved in the switch from a contractile to synthetic phenotype in pulmonary vascular smooth muscle cells.***

Stephen M. Black, Ph.D. 35

**Authors:** S Aggarwal, CM Gross, R Rafikov, S Kumar, SM. Black.

## TEACHING ACCOMPLISHMENTS

### **Program Oversight Responsibilities**

***Laboratory Director, Child Health Research Center, UC San Francisco (1997-1999).*** Responsible for teaching basic molecular biology (didactic and practical) to the MD Fellows in the Dept. of Pediatrics.

***Research Director, Division of Neonatology, Northwestern University (1999-2003).*** Responsible for the research training of the MD Fellows and junior faculty in the Division.

***Academic Issues Committee, Northwestern University (2001-2003).*** This committee is responsible for evaluating all academic concerns relating to students, post-doctoral fellows, and faculty.

***Integrated Graduate Program (IGP) Recruitment Committee (2000-2003).*** This committee is responsible for evaluating all graduate program applications and making the final decisions on who will be accepted into the IGP program

***Director of Vascular Biology, St. Patrick Hospital (2003-2006).*** Responsible for the research training of the fellows in the International Heart Institute.

***COBRE Group leader, University of Montana (2004-2006).*** Oversight responsibility for the training of graduate students in the Neuroscience Graduate Program.

***Vice-Chair, Graduate Council, University of Montana (2004-2005).***

***Chair, Graduate Council, University of Montana (2005-2006).*** The Graduate Council has the following responsibilities:

1. Promote, review, and evaluate graduate programs to ensure vitality, currency, and quality.
2. Review and make recommendations on all requests for new programs, for deletions of programs, and for curriculum additions or changes by departments and schools;
3. Consider suggested changes in Graduate School regulations as published in the graduate catalog;
4. Consider issues raised by graduate students relating to regulations of specific graduate programs or their welfare;
5. Initiate and supervise interdisciplinary graduate programs in response to national, regional, or state needs, or to the desires and needs of sufficient numbers of graduate students.
6. Decide on substantive matters relating to graduate programs, curricula, general Graduate School regulations, etc., and forward decisions to the Faculty Senate and to the Provost and Vice President for Academic Affairs for final approval.

### **Course Directorships**

1997-1999	Introduction to Molecular Biology, Department of Pediatrics, UC San Francisco
1999-2003	Research Training, Division of Neonatology, Northwestern University
2004-2006	Pharmacology and Toxicology (PHAR 545), Department of Biomedical & Pharmaceutical Sciences, University of Montana (co-director)
2004-2006	Pharmacology and Toxicology (PHAR 444), Department of Biomedical & Pharmaceutical Sciences, University of Montana (co-director)

- 2005 Academic Development Seminar (BMED 635), Department of Biomedical & Pharmaceutical Sciences, University of Montana (co-director)
- 2007 Frontiers in Vascular Biology (VBI 8020), Medical College of Georgia

### **Teaching Experience**

- 1997-1999 Lecturer, Introduction to Molecular Biology, Department of Pediatrics, UC San Francisco
- 1998 Lecturer, Fetal Pulmonary Physiology, UC San Francisco
- 1999-2003 Advanced Research Training, Division of Neonatology, Northwestern University
- 2000-2003 IGIP Northwestern University (Quals I)
- 2000-2003 IGIP Northwestern University (Quals II)
- 2003-2006 Organizer, Current Research Literature (BMED 593), Department of Biomedical & Pharmaceutical Sciences, University of Montana
- 2004-2006 Advisor, Seminar (BMED 594), Department of Biomedical & Pharmaceutical Sciences, University of Montana
- 2003 Major Advisor, Research (PHAR597), Department of Biomedical & Pharmaceutical Sciences, University of Montana
- 2004 Major Advisor, Research (PHAR599), Department of Biomedical & Pharmaceutical Sciences, University of Montana
- 2005 Major Advisor, Thesis (PHAR697), Department of Biomedical & Pharmaceutical Sciences, University of Montana
- 2005 Lecturer, Academic Development Seminar (BMED 635), Department of Biomedical & Pharmaceutical Sciences, University of Montana
- 2005 Discussion Leader, Academic Development Seminar (BMED 635), Department of Biomedical & Pharmaceutical Sciences, University of Montana
- 2006 Major Advisor, Dissertation (PHAR699), Department of Biomedical & Pharmaceutical Sciences, University of Montana
- 2004-2006 Advisor, Research Laboratory Rotations (PHAR 545), Department of Biomedical & Pharmaceutical Sciences, University of Montana
- 2004-2006 Discussion leader, Pharmacology and Toxicology (PHAR 545), Department of Biomedical & Pharmaceutical Sciences, University of Montana
- 2004-2006 Lecturer, Pharmacology and Toxicology (PHAR 443), Department of Biomedical & Pharmaceutical Sciences, University of Montana
- 2004-2006 Lecturer, Pharmacology and Toxicology (PHAR 444), Department of Biomedical & Pharmaceutical Sciences, University of Montana
- 2004-2006 Lecturer, Cardiovascular Pharmacology & Toxicology (BMED 620), Department of Biomedical & Pharmaceutical Sciences, University of Montana
- 2005-2006 Discussion Leader, Topics in Neurobiology (BMED 667), Department of Biomedical & Pharmaceutical Sciences, University of Montana
- 2006 Lecturer, Critical Analysis of the Mechanisms of Disease (SGS8065) Medical College of Georgia
- 2007-2015 Lecturer, Critical Analysis of the Mechanism of Disease (SGS80065), School of Graduate Studies, Medical College of Georgia
- 2008-2015 Lecturer, Integrative Systems Biology (SGS80033), School of Graduate Studies, Medical College of Georgia
- 2007-2015 Lecturer, Frontiers in Vascular Biology (VBI 8020), Vascular Biology, Medical College of Georgia

2007-2014	Major Advisor, Research In Vascular Biology (VBIO9300), Vascular Biology, Medical College of Georgia
2007-present	Advisor, Introduction to Research I (SGSS8050), School of Graduate Studies, Medical College of Georgia
2008-2014	Graduate Research Day, abstract reviewer
2009	STAR Program Mentor
2010	Lecturer, Cardiology (RCAR5000), Division of Cardiology, Medical College of Georgia
2015-present	BLAISER Program mentor
2018-present	Study Arizona Short-Term Program mentor

## Mentoring Experience

### Post-doctoral Trainees

Trainee Name	Trainee Type	Training Period	Institution Degree, Date Received	Research Project Title	Former Students' Current Positions ®=Research Position ©=Clinical Position (N/A)=School or Clinical Training	Current Students ----Support Source
Aggarwal, S. M.D.	Postdoctoral	2012-2013	Medical College of Georgia, PhD, 2016	Nitration mediated inhibition of PKG	Assistant Professor, University of Alabama, Birmingham, AL®	
Galina Antonova, M.D., Ph.D.	Post-Doctoral	2006-2008	2 <sup>nd</sup> Moscow State Medical Institute; M.D. 1973; Ph.D. 1984	Ubiquitin ligase mediated protein degradation	Post-Doctoral Fellow, Medical College of Georgia ®	
Brennan, L, Ph.D.	Post-Doctoral	2000-2002	University of Ulster, Coleraine, D. Phil., 1996	Mechanisms of NOS inhibition by NO	Assistant Professor, Biomedical Sciences Department, Florida Atlantic University ®	
Bunderson, M., Ph.D.	Post-Doctoral	2003-2006	The University of Montana, Ph.D., 2003	Estrogen signaling in endothelial cells	Post-Doctoral Fellow Dept. Pharmaceutical Sciences, The University of Montana ®	
Chatterjee, A., M.S., Ph.D.	Post-Doctoral	2007-2009	Medical College of Georgia, Ph.D., 2007	Cell signaling in acute lung injury	Post-Doctoral Fellow, NASA Ames Research Center ®	
Dettman, R., Ph.D.	Post-Doctoral	2000 – 2001	Indiana University, Ph.D., 1994	Mesenchymal cell transformation in heart development	Associate Professor of Pediatrics,	

					Northwestern University ®	
Dizon, M., M.D.	Post-Doctoral	2000– 2002	Texas Tech University, MD, 1994	Effects of ethanol on nNOS expression in the brain	Associate Professor of Pediatrics, Northwestern University ®, ©	
Fonseca, F., Ph.D.	Post-Doctoral	2006 – 2009	Biomedical Institute of Sciences of Universidade Federal do Rio de Janeiro, Ph.D., 2003	H <sub>2</sub> O <sub>2</sub> mediated inhibition of NOSIII	Research Scientist (Faculty) Case Western University	
Grobe, A., Ph.D.	Post-Doctoral	2004 – 2006	The University of Montana, Ph.D., 2004	Effects of diabetes on pulmonary endothelial dysfunction	Experimental Archeologist, University of Montana®	
Kelly, L., M.D.	Post-Doctoral	2000 – 2003	University of Southern California, M.D., 1997	NO mediated regulation of ET-1 expression	Assistant Professor, Dept Pediatrics, Keck School of Medicine, USC-deceased	
Manuela Kellner, Ph.D.	Post-doctoral	2015-present	Hannover Medical School, 2016	Effects of cyclic stretch on vascular permeability		HL101902
Kumar, S., Ph.D.	Post-Doctoral	2004 – 2008	Jawaharlal Nehru University, Ph.D., 2001	ROS signaling in pulmonary hypertension	Research Scientist, Department of Obstetrics & Gynecology, Medical College of Georgia ®	
Lu, Q., Ph.D.	Post-Doctoral	2006-2014	Karolinska Institutet, Ph.D, 2003	Modulation of oxidative stress in neonatal HI	Assistant Research Scientist, University of Arizona	

Satish Noonepalle, PhD	Post-Doctoral	2016-2018	Georgia regents University, 2015	BRD4 signaling in endothelial function		HL60190
Rafikova, O., M.D, Ph.D.	Post-Doctoral	2008 – 2012	Medicine, Moscow State University, M.D., 1999, Ph.D., 2005	Peroxynitrite and pulmonary hypertension	Assistant Professor, tenure track University of Arizona	
Rafikov, R., Ph.D.	Post-Doctoral	2008-2013	Chemistry, Biochemical Physics Institute, Moscow, Ph.D., 2005	Effect of nitration on protein structure function relationships	Assistant Professor, tenure track University of Arizona	
Sadkowski T., D.V.M., Ph.D.	Post-Doctoral	2009-2011	Warsaw University of Life Sciences, D.V.M., 2003, Ph.D., 2008	Effect of shear stress on TGF- $\beta$ 1 activation		
Sharma, S., Ph.D.	Post-Doctoral	2006 – 2008	Central Institute of Medicinal and Aromatic Plants Ph.D., 2001	LCAR metabolim in pulmonary hypertension	Assistant Professor, tenure track, Augusta University ®	
Smith, A., Ph.D.	Post-Doctoral	2006-2009	Medical College of Georgia, Ph.D., 2006	Zinc signaling in acute lung injury	Lab Manager, Medical College of Georgia ®	
Sud, N., Ph.D.	Post-Doctoral	2006-2010	Institute of Medical Sciences, New Delhi, Ph.D., 2004	Regulation of NO signaling in endothelial cells		
Tian, J., Ph.D.	Post-Doctoral	2006 – present	Fudan Medical School, Ph.D., 2000	Microarray analysis of gene expression changes in pulmonary hypertension		



Wells, S., Ph.D.	Post-Docctoral	2004-2006	Columbia University College of Physicians and Surgeons, Ph.D. 1994	ADMA in pulmonary hypertension	AssociateProfessor, University of Nebraska, Medical Center, Department of Environmental, Environmental, Agricultural, and Occupational Health ®	
Wedgwood, S., Ph.D.	Post-Docctoral	2000-2002	University of Edinburgh, Ph.D., 1996	Oxidative stress in pulmonary hypertension	Associate Professor UC Davis ®	
Wiseman, D., Ph.D.	Post-Docctoral	2004-2008	Purdue University, Ph.D., 2004	Zinc signaling in endothelial cells	Assist. Professor Fellow, Herman B. Wells Center for Pediatric Research Indiana University School of Medicine®	
Zhan, S	Post-Docctoral	2009-2012		KLF2 signaling in endothelial cells		

**Graduate Students**

<b>Trainee Name</b>	<b>Trainee Type</b>	<b>Training Period</b>	<b>Institution Degree, Date Received</b>	<b>Research Project Title</b>	<b>Former Students' Current Positions ®=Research Position ©=Clinical Position (N/A)=School or Clinical Training</b>	<b>Current Students ----Support Source</b>
Aggarwal, S. M.D.	Pre-Doctoral	2006-2012	Presidency College, Calcutta; B.S. 1997; University College of Science, Technology and Agriculture, Calcutta; M.S. 1999.	Nitration mediated inhibition of PKG	Assistant Professor, University of Alabama, Birmingham, AL	
Rau, T.F., Ph.D.	Pre-Doctoral	2003-2007	The University of Montana, Ph.D., 2007	Mechanisms of LCAR neuroprotection	Associate professor Dept. Pharmaceutical Sciences, The University of Montana ®	
Wilham, J., Ph.D.	Pre-Doctoral	2003-2007	The University of Montana, Ph.D., 2007	Regulation of NOSIII by oxidative stress	Post-Doctoral Fellow, Rocky Mountain Laboratories ®	
Christine Gross, B.S.	Pre-Doctoral	2010-2014	University of South Carolina Aiken, 2009	Regulation of endothelial barrier function by RNS	Medical Student, Augusta University, Augusta, GA	

**Graduate Student Committees**

Jennifer Young, Dept. Critical Care Medicine, Northwestern University, 2001-04  
Thomas Rau, Dept. Biomedical & Pharmaceutical Sciences, University of Montana, 2003-07  
Jason Wilham, Dept. Biomedical & Pharmaceutical Sciences, University of Montana, 2003-07  
Melodie Weller, Dept. Biomedical & Pharmaceutical Sciences, University of Montana, 2003-07  
Saurabh Aggarwal, Vascular Biology, MCG, 2006-present  
Christine Gross, Vascular Biology, MCG, 2010-present  
Christie Yu, Dept. Pathology, MCG, 2008-2013

**Graduate Student Thesis Defense Reader**

Mindy Stone, Dept. Biomedical & Pharmaceutical Sciences, University of Montana, 2004  
Annuran Chatterjee, Vascular Biology, MCG, 2007

**Medical Student Research Supervisor**

Macduff Sheehy, UC San Francisco, 1996  
Dorlean Miller, MCG, 2007

**Undergraduate Students**

Snezan Levic, UC San Francisco, 1998 (AHA Summer Fellow)  
Patric Ross, UC San Francisco 1998 (AHA Summer Fellow)  
Susan Roderick, University of Montana, 2004  
Trevor Neal, University of Montana, 2005 (Summer Undergraduate Research Fellowship)  
Hannah Cathers, STAR student, MCG, 2009

**Teaching Philosophy**

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I believe that it is an obligation of every faculty member to be involved in developing the next generation of investigators. Thus, I see teaching as an important aspect of the academic life. I believe it is an obligation of every faculty member to be involved in teaching related activities whether that be didactic teaching or research mentoring. Throughout my career I have been active in teaching at a variety of levels: undergraduate, graduate as well as medical and pharmacy students and have found that each level has its unique aspects and its own rewards.

My overall teaching style is not to burden the students with too much minute detail but rather to have them be able to see the bigger picture. My belief is that when a student understands the big concepts it is much easier to critically assess new information especially as it relates to the latest literature. Thus, my goal is to get the students to a level where they can think and assess the data presented to them rather than just being able to memorize facts. I think this should be the major goal of all teaching as this is the skill that students will need whatever field they end up working in.

Since a majority of my time is spent running my research operation, it is important to include some comments about mentoring students and fellows in the laboratory. As a role model it is imperative that I demonstrate my eagerness to work hard and to maintain the highest integrity. This is a task that I take very seriously. Done properly, mentoring helps to prepare these individuals for their future careers as

they develop towards independence while at the same time providing the necessary support, advice, and guidance along the way. Indeed I believe that the nurturing of the next generation of investigators is one of the most important of all tasks we undertake as scientists. Mentors must be willing to put the needs of the mentee above their own, and I fully endorse this philosophy. However, it is still important that each student be set goals and milestones. Often these are in the form of abstract deadlines-the possibility to travel to a national or international meeting is a powerful motivator! Setting these deadlines has long-term benefits as it gets the student used to meeting targets that will be important as their career progresses and they submit their own grants.

## SERVICE ACCOMPLISHMENTS

### Editorial Boards

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2001: Editorial Board of Medical Science Monitor  
 2009-: Journal of Chinese Clinical Medicine  
 2015-: Pulmonary Circulation

### Editorships

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1995: Perinatal and Pediatric Pathophysiology (Second Edition). Section Editor (Cellular Physiology)  
 2010: Vascular Pharmacology-Special issue Editor

### Editorial review for journals

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American Journal of Pathology  
 American Journal of Perinatology  
 American Journal Physiology: Heart & Circulatory Physiology  
 American Journal Physiology: Lung Cell Molecular Physiology  
 American Journal Physiology: Regulatory, Integrative and Comparative Physiology  
 Antioxidant & Redox Signaling  
 Canadian Journal of Physiology & Pharmacology  
 Circulation  
 Circulation Research  
 Endocrinology  
 European Journal of Pharmacology  
 Free Radical Biology & Medicine  
 Journal of Biological Chemistry  
 Journal of Cell Biology  
 Journal of Infection and Public Health  
 Journal of Neuroscience  
 Nature Structural Biology  
 Nitric Oxide: Biology & Chemistry  
 Pediatric Research  
 Thomson Reuters' Drug Profiles  
 Vascular Pharmacology

### Grant Review Committees

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AHA Great America Consortium Study Section (member)	2001
AHA Lung, Respiration/Resuscitation Study Section (member)	2001-2006
AHA Lung, Respiration/Resuscitation Study Section (Co-chair)	2003-2006

ZRG1 Special Emphasis panel Study section (member)	2002-present
HED1 study section (AdHoc)	2001
Placenta and Neonatology (AdHoc)	2005
Board of Scientific Counselors NHLBI	2006-2011
External Reviewer for Austrian Science Fund	2008
NHLBI K99/R00 Review Panel	2008
AHA Southeastern Affiliates Lung, Respiration/Resuscitation Study Section (member)	2008
Peer Reviewed Medical Research Program (PRMRP) Pulmonary Hypertension Review Panel	2008
Alberta Heritage Foundation for Medical Research	2008
AHA Region I Vascular Wall Biology	2009-2011
Placenta & Neonatology study section (AdHoc)	2009
ZRG1 EMNR-D Special Emphasis Panel	2009
ARRA GO RC2 Special Review Committee	2009
Placenta & Neonatology study section (member)	2009-2014
ZRG1 EMNR-D Special Emphasis Panel	2009
External Reviewer for Austrian Science Fund	2010
NHLBI Translational Program Project	
Grants in Lung Diseases (co-chair)	2010
RFA HL11-006, Next Generation Genetic Association Studies (U01)	2010
AHA Vascular Bio BP CT (Chair)	2011-2013
RFA , HL-11032 Utilization of Human Lung Tissue	2011-2012
Resource for Vascular Research (Chair) NHLBP Study Section (member)	2013-2017

## National Committees

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- 2003: Pediatric Academic Societies, Annual meeting, Seattle, WA, Session Chair
- 2004: Pediatric Academic Societies, Annual meeting, San Francisco, CA, Session Chair
- 2004: Society for Free Radical Biology & Medicine Annual meeting, St. Thomas, Session Chair
- 2005- Society of Free Radical Biology & Medicine Junior Investigator Judge
- 2005: CDC International Endothelium Conference, Crete, Greece (Session Chair)
- 2005- Society for Free Radical Biology & Medicine Annual Meeting Abstract Reviewer
- 2009: German Pediatric Cardiology Annual Meeting (Session Chair)
- 2009: Society for Free Radical Biology & Medicine Discovery Award Selection Committee
- 2009- Society for Free Radical Biology & Medicine Nominations/Leadership Development Committee
- 2010- Society for Free Radical Biology & Medicine Lifetime Achievement Committee member
- 2012- Pediatric Academic Societies, abstract reviewer
- 2013- Society for Free Radical Biology & Medicine, Board member
- 2015: Pediatric Academic Societies, Annual meeting, San Diego, CA, Session Chair

## Society Memberships

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Title	Type	Dates
U.K. Biochemical society	Student member	1986-90
American Association for the Advancement of Science	Member	1991-present
Western Society of Pediatric Research	Member	1996-1999
Society for Pediatric research	Member	1998-present
Society for Neuroscience	Member	2000-present
Nitric Oxide Society	Member	2000-present
Oxygen Society	Member	2000-present
American Physiological Society	Member	2000-present
American Society for Cell Biology	Member	2002-present
Society for Free Radical Biology & Medicine	Member	20002-present
European Society for Pediatric research	Member	2006-present
Endocrine Society	Member	2009-present
American Thoracic Society	Member	2010-present

## Institutional Committees

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Title	Institution	Dates
Academic Issues Committee	Northwestern University	2001-2003

IGP Recruitment Committee	Northwestern University	2000-2003
Faculty Evaluation Committee	University of Montana	2003-2006
Graduate Recruitment & Admissions Committee	University of Montana	2004-2006
IACUC	University of Montana	2004-2006
Graduate Council Vice-Chair	University of Montana	2004-2005
Graduate Council Chair	University of Montana	2005-2006
Basic Science Leadership	Medical College of Georgia	2008-2014
GRU Health System Bio-repository Committee	Medical College of Georgia	2009-2014
Graduate Council	Georgia Regents University	2012-2014
Dept. Medicine P&T Committee	University of Arizona	2015-
Dept. Medicine Space Committee (Chair)	University of Arizona	2015-

### **Service Awards**

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- 1998: James A. Shannon Director's Award from the National Institutes of Health
- 2007: Distinguished Faculty Award for Basic Science Research, MCG School of Medicine



# Shawn Anthony Christian, PhD

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## EDUCATION

PhD, English and Education, University of Michigan, Ann Arbor  
MA, English, Temple University  
BA, English, Florida State University

## POSITIONS HELD

Associate Provost, Wheaton College (MA), 2014 - 2018  
Associate Professor of English and African American studies, Wheaton College, 2010 – present  
Assistant Professor of English and African American studies, Wheaton College, 2003 – 2009  
Program Coordinator, African, African American, and Diaspora studies, Wheaton College, 2013-2014  
Director, Summer Institute for Literary and Cultural Study (SILCS), Wheaton College (Norton, MA), 2010 – 2013  
Adjunct Instructor, Center for African and African American studies, University of Michigan, 2002  
Adjunct Instructor, English Department, Washtenaw Community College, 1998 -2002  
Adjunct Instructor, Life Skills, Miami-Dade Community College, 1998

## PUBLICATIONS

The Harlem Renaissance and the Idea of a New Negro Reader (University of Massachusetts Press, 2016).

“1930s Black Print Cultures” in *African American Literature in Transition: Volume 12, 1930-1940*. Eds. Eve Dunbar and Ayesha Hardison. Under contract with Cambridge University Press.

Review, Spoofing the Modern: Satire in the Harlem Renaissance, by Darryl Dickson-Carr. *ALH Online Review Series XIII*.  
[https://academic.oup.com/alh/pages/alh\\_review\\_series\\_13](https://academic.oup.com/alh/pages/alh_review_series_13)

"'upon the young people of our race, by our own literature': Alice Dunbar-Nelson's 'Negro Literature for Negro Pupils.'" Legacy: A Journal of American Women Writers 33.2 (2016).

Review, Artistic Ambassadors: Literary and International Representation of the New Negro Era by Brian Russell Roberts. Journal of American Ethnic History 35.3 (Spring

2016): 113-114.

"Enacting 'Smoke, Lilies, and Jade' as Black Gay Print Culture." Ethnic Studies Review 36.1, 2 (Spring 2016 [2013]): 21-35.

"Mule Bone 2.0." Pedagogy. 15.2 (2015): 362-365.

"Love and Civil Rights in Perfect Peace." Mid-Atlantic Writers Association Review (MAWA) 21 (2014): 78-86.

"A (New?) 'Rap on Race': Historicizing Calls for Racial Dialogue in the Early Years of Barack Obama's Presidency" in Reading African American Experiences in the Obama Era: Theory, Advocacy, and Activism (Peter Lang Publishers, 2012)

"Between Black Men: Artistic Collaboration and the Harlem Renaissance in Brother to Brother" in Harlem Renaissance Revisited: Arts, Letters, and Politics (Johns Hopkins University Press, 2010)

Review of Founding Fictions of the Dutch Caribbean: Cola Debrot's "My Black Sister" and Boeli van Leeuwen's A Stranger on Earth, translated by Olga E. Roger and Joesph O. Aimone, Wadabagei: A Journal of the Caribbean and Its Diasporas 11.2 (spring/summer 2008): 111-114.

Review of Daniel Black's They Tell Me of a Home CLA Journal 51.3 (March 2008): 324-328.

### **FELLOWSHIPS, GRANTS, AND AWARDS**

Martin Luther King, Jr. Legacy Award, Wheaton College 2019

NEH/Harvard University DuBois Institute Summer Fellow, 2013

Mellon/Wheaton Faculty Research Grant, Wheaton College, 2013

Mellon/Wheaton Faculty-Student Research Grant, Wheaton College, 2012

Riggio Fellow, Manuscript, Archives, and Rare Book Library, Emory University, 2011-2012

Co-Principal Investigator, Andrew W. Mellon renewal grant (\$362,000) for Summer Institute for Literary and Cultural Studies (SILCS). Wheaton College, 2010-2012.

Faculty Research Grant, Wheaton College, 2010

Mars Student-Faculty Research Grant, Wheaton College, 2009

Cannon Fellow, Manuscript, Archives, and Rare Book Library, Emory University, 2008-2009

Mellon Faculty Research Grant, Wheaton College, 2008

Fellow, Center for the Study of Ethnicity and the Arts, University of Iowa, 2007

Class of 2007 Faculty Appreciation Award, Wheaton College

Arnold Faculty Summer Research Grant, Wheaton College, 2007

Mars Student-Faculty Research Grant, Wheaton College, 2007

Mellon Faculty Research Grant, Wheaton College, 2006

Provost Faculty Research Grant, Wheaton College, 2004  
 Mars Student-Faculty Research Grant, Wheaton College, 2004  
 Intercultural Board Faculty Member of the Year, Wheaton College, 2003

### **SELECTED CONFERENCE PRESENTATIONS**

“*The New Negro* and the Cultivation of a New Negro Reader Abroad,” Society for the History of Authorship, Reading and Publishing, Amherst, July 2019

“NAACP’s Crisis and the Cultivation of a New Negro Reader Abroad,” Modernist Studies Association Conference, Amsterdam, August, 2017

“Editing FREEDOMWAYS: Esther Cooper Jackson on the Art and Literature of Black Freedom,” Society for the Study of American Women Writers, Philadelphia, November 2015

Panelist, “Recovering Alice Dunbar-Nelson for the 21<sup>st</sup> Century,” Society for the Study of American Women Writers, Philadelphia, November 2015

“Two Arts/ ‘Two Artists’: Literary and Visual Collaboration in Harlem Renaissance,” “Poetry and Collaboration in the Age of Modernism,” Trinity College, Ireland, July 2015

“Morrison’s Reader,” “Toni Morrison and Expanding the American/African-American Literary Canon,” Northeast Modern Language Association Conference, Toronto, May 2015

“Uplifting the Race through Education in Nella Larsen’s Quicksand,” “Confluence and Division,” Modernist Studies Association, University of Pittsburgh, November 2014

“In Search of Black Writers (and Readers): Crisis and Opportunity’s Literary Contests,” “African American Expression in Print and Digital Culture,” University of Wisconsin, September 2014

“Reading (and Writing) Toni Morrison’s HOME,” American Literature Association Conference, May 2014

“On James Weldon Johnson’s ‘English 123,’” History of Education Society Annual Meeting, Vanderbilt University, November 2013

“How to Read as a New Negro,” “The Return of the Text: A Conference on the Cultural Value of Close Reading,” Religion and Literature Forum, Le Moyne College, September 2013.

### **LECTURES, PANEL PRESENTATIONS, AND WORKSHOP FACILITATIONS**

Invited Lecturer, “What Was Africa to Zora Neale Hurston?: Some Notes from *Barracoon*,” Africa Week, Bridgewater State University, April 2019

Discussant, Post-Ensemble Reading of *Barracoon*, Mixed Magic Theater, October 2018

Discussant, Post-Play Talk Back for *Sweat* and *Gilded Six Bits*, Mixed Magic Theater, October 2018

Keynote Address, “Starr Was a Witness,” Reading Across Rhode Island Kick-off, Rhode Island Center for the Book, January 2018

Panelist, Discussion of Ta-Nehisi Coates’ *Between the World and Me*, Open Books – Open Minds Forum on Race and Society, Rhode Island College, October 2017

Scholar’s Lecture, “Langston Hughes and The Word,” “21<sup>st</sup> Annual Providence Community Reading Celebrating Langston Hughes’ Birthday,” Rhode Island School of Design, February 2017

Co-Facilitator, “Learning Spaces Collaboratory,” Chief Academic Officers Institute, Council of Independent College, New Orleans, November 2016

Co-Facilitator, “Liberal Arts Colleges: Teaching and Research,” “Teaching at Teaching Intensive Institutions,” Cross-Sector Partnership, University of Massachusetts Amherst, September 2015

Scholar’s Lecture, “Langston Hughes: The People’s Poet and the Poet of His People,” “20<sup>th</sup> Annual Providence Community Reading Celebrating Langston Hughes’ Birthday,” Rhode Island School of Design, February 2015

Co-Facilitator, “Liberal Arts Colleges: Teaching and Research,” “Teaching at Teaching Intensive Institutions,” Cross-Sector Partnership, University of Massachusetts Amherst, September 2014

Scholar’s Lecture, “Langston Hughes on Community,” “18<sup>th</sup> Annual Providence Community Reading Celebrating Langston Hughes’ Birthday,” Rhode Island School of Design, February 2013

## **TEACHING AT WHEATON COLLEGE**

“Collaborations in 20<sup>th</sup> Century African American Literature and Culture” (Senior Seminar)

“Harlem Renaissance as a Usable Past” (Senior Seminar)

“Harlem Renaissance and Modernity”

“Contemporary African American Fiction”

“Contemporary Literary and Cultural Theory”

“Approaches to Literature and Culture”  
 “Cultural Diversity in US Fiction since 1945”  
 “African American Literature and Culture”  
 “First-Year Composition”  
 “Witnessing Contemporary Africanness” (Study Abroad mini-course)  
 “Reading a Renaissance” (First-Year Seminar)  
 “Harlem Renaissance as a Visual Narrative (in Print)” (First-Year Seminar)

### **SERVICE AT WHEATON COLLEGE**

Exploratory Projects, Evaluation, Development, and Innovation Team, 2019 - present  
 Humanities Faculty Representative, Budget and Planning Committee, 2019 - present  
 Advisor, Distinguished Women of Color Collective, 2019 - present  
 Advisor, Community for Advancing Healthy Masculinities, 2019 - present  
 Humanities Faculty Representative, Presidential Search Committee, 2014 -2015  
 Coordinator, Program in African, African American, and Diaspora Studies, 2014  
 Humanities Faculty Representative, Tenure Committee, 2012  
 Member-at-Large, Executive Committee, Wheaton College AAUP chapter, 2008 – 2011  
 Liaison to AAUP, Untenured Faculty Organization, 2008 – 2009  
 Co-coordinator, Untenured Faculty Organization, 2008 – 2009  
 Steering Committee, Summer Institute for Literary and Cultural Studies (SILCS), 2007 – 2013  
 Co-chair, sub-committee on Global Learning, Educational Policy Committee, 2007 – 2008  
 Steering Committee, Untenured Faculty Organization, 2006 – 2009  
 Sub-committee on Global Learning, Educational Policy Committee, 2006 – 2008  
 Steering Committee, First-Year Studies Program, 2006 – 2007  
 College Advisory Committee, 2006 – 2009  
 Advisory Committee, Center for Global Education, 2005 – 2007  
 Search Committee, English Department 18th Century Position, 2005  
 Advisor, TREE (renamed TWAP) House (Males of Color Residence Hall), 2005 -2010  
 Advisory Committee, Program in African, African American, and Diaspora Studies, 2004 – present  
 Sub-committee on Curricular Infusion, Educational Policy Committee, 2004 – 2006

### **OTHER PROFESSIONAL EXPERIENCE AND SERVICE**

Member, Planning Committee for Annual Providence Langston Hughes Community Poetry Reading, 2018 - present  
 Member, Council of Advisors, Mixed Magic Theater, 2013  
 Member (Vice Chair, 2017; Secretary 2015), Board of Directors of the Rhode Island Council for the Humanities, 2012 – 2018  
 Member, Advisory Board, Sleeping Weazel, 2012 – present  
 Member, Advisory Committee, Institute for the Recruitment of Teachers (IRT), Andover Academy, 2007 – 2014  
 Editorial Board, *Pedagogy*, 2007 – present

Advisory Committee, America's Youth Teenage Unemployment Reduction Network (MY TURN), 2005 – 2008

Research Associate, Williams Wade-Golden Research and Consulting Group, 2002 – 2004

#### **PROFESSIONAL MEMBERSHIPS AND OTHER AFFILIATIONS**

Modern Language Association, Regional Delegate (2005-2007)

American Education Research Association

College Language Association

National Council of Teachers of English

Modernist Studies Association

Society for the History of Authorship, Reading, and Publishing

#### **REFERENCES AVAILABLE UPON REQUEST**

# Curriculum Vitæ

## Ian L. Dryden

School of Mathematical Sciences, University of Nottingham, University Park, Nottingham, NG7 2RD, UK.

Telephone: +44 7946 465495

Ian.L.Dryden@gmail.com

Web: <http://www.maths.nottingham.ac.uk/~ild>

## Academic History

1986-89 University of Leeds, UK.

Ph.D. in Statistics: 'The Statistical Analysis of Shape Data'

1983-86 University of Nottingham, UK.

B.Sc (Hons) Mathematics with Statistics (1st class).

## Employment

2000-2010, September 2012- Professor of Statistics, School of Mathematical Sciences, University of Nottingham, UK.

January 2014-July 2018 Head of School, School of Mathematical Sciences, University of Nottingham, UK.

January 2009-August 2012 Professor, Department of Statistics, University of South Carolina, Columbia, South Carolina, USA.

1998-1999 Senior Lecturer, Department of Statistics, University of Leeds, UK

1996-1997 Visiting Assistant Professor, Department of Statistics, University of Chicago, USA.

1989-1998 Lecturer, Department of Statistics, University of Leeds, UK

## Honours and Awards

2012-2017 Royal Society Wolfson Research Merit Award

2012 Elected Fellow of the Institute of Mathematical Statistics

2007 Leverhulme Research Award

2004 Elected member of the International Statistical Institute

2002 Chartered Statistician (CStat) of the Royal Statistical Society (revalidated 2016)

1999 John Wiley and Sons Statistics Book of the Year.

## Recent administrative experience

2019- Postgraduate Research Admissions Director

2014-2018 Head of School, School of Mathematical Sciences (SoM)

2014-2018 Faculty of Science Leadership Group/Management Board

2014-2018 Chair, Executive Board, SoM

2014-2018 Chair, Examination Boards, SoM

2014-2018 Equality, Diversity and Inclusion Committee, SoM  
 2014-2018 Undergraduate Learning Community Forum, SoM  
 2014-2018 Research Board, SoM  
 2014-2018 University of Nottingham Senate  
 2014-2018 Chair, appointment panels, SoM  
 2015-2018 Chair, Data Driven Discovery Research Priority Area, University of Nottingham  
 2014-2015 Chair, Big Data Initiative, University of Nottingham  
 2013 Head of Statistics and Probability Research Group, SoM  
 2012-2018 Chair, Workload Model Group, SoM  
 2013 Royal Statistical Society. President Nominating Committee.

## Publications

### Books

1. Dryden, I. L. and Mardia, K. V. (2016). *Statistical Shape Analysis, with Applications in R (Second Edition)* John Wiley, Chichester. 454 + xxiii pages.
2. Dryden, I. L. and Kent, J. T. (Editors) (2015). *Geometry Driven Statistics*. John Wiley, Chichester. 394 + xviii pages.
3. Dryden, I. L. and Mardia, K. V. (1998). *Statistical Shape Analysis*. John Wiley, Chichester. 347 + xvii pages.

### Research Papers

4. Dryden, I.L., Kume, A., Paine, P.J. and Wood, A.T.A. (2020). Regression modelling for size-and-shape data based on a Gaussian model for landmarks. *Journal of the American Statistical Association* To appear. <https://doi.org/10.1080/01621459.2020.1724115>
5. Varano, V., Piras, P., Gabriele, S., Teresi, L., Nardinocchi, P., Dryden, I. L., Torromeo, C., Schiariti, M. and Puddu, P. E. (2020). Local and global energies for shape analysis in medical imaging. *International Journal for Numerical Methods in Biomedical Engineering* 36:e3252, <https://doi.org/10.1002/cnm.3252>
6. Severn, K.E., Dryden, I.L. and Preston, S.P. (2020). Discussion of the paper by P.Dubey and H.Müller. To appear *Journal of the Royal Statistical Society, Series B*.
7. Dryden, I.L., Goulding, J., Preston, S.P. and Chan, L. (2020). Discussion of the paper by B.W. Silverman. To appear *Journal of the Royal Statistical Society, Series A*.
8. Dryden, I.L., Kim, K., Laughton, C.A. and Le, H. (2019). Principal nested shape space analysis of molecular dynamics data. *Annals of Applied Statistics*, **13**, 2213–2234.
9. Dryden, I.L., Kim, K. and Le, H. (2019). Bayesian linear size-and-shape regression with applications to face data. *Sankhya A*, **81**, 83–103. <https://doi.org/10.1007/s13171-018-0136-8>.
10. Dryden, I.L., Preston, S.P. and Severn, K.E. (2019). Discussion: Object-Oriented Data Analysis, Power Metrics, and Graph Laplacians. *Journal of the American Statistical Association*, **114**, 1097–1098. <https://doi.org/10.1080/01621459.2019.1635477>



11. Acheampong, E., Dryden, I.L., Wattis, J.A.D., Twycross, J., Scrimshaw, M.D. and Gomes, R.L. (2019). Modelling emerging pollutants in wastewater treatment: A case study of the pharmaceutical 17 $\alpha$ -ethinylestradiol. *Computers and Chemical Engineering*, **128**, 477–487. <https://doi.org/10.1016/j.compchemeng.2019.06.020>
12. Dryden, I.L. (2019). *shapes* package, R Foundation for Statistical Computing, Vienna, Austria, Contributed package. Version 1.2.5, December 1, 2019. (Version 1.0, September 16, 2003) <http://www.R-project.org/package=shapes>
13. Lewis, N. H., Hitchcock, D. B., Dryden, I. L. and Rose, J. R. (2018). Peptide Refinement Using A Stochastic Search. *Journal of the Royal Statistical Society, Series C*, **67**, 1207–1236. <https://doi.org/10.1111/rssc.12280>
14. Dryden, I. L. and Hodge, D. J. (2018). Journeys in Big Data Statistics. *Statistics and Probability Letters*, **136**, 121–125. <https://doi.org/10.1016/j.spl.2018.02.013>
15. Vasiliu, D., Dey, T., and Dryden, I. L. (2018). Penalized Euclidean distance regression. *Stat*, **7**, e175. <https://doi.org/10.1002/sta4.175>.
16. Valerio Varano, Paolo Piras, Stefano Gabriele, Luciano Teresi, Paola Nardinocchi, Ian L. Dryden, Concetta Torromeo and Paolo E Puddu. (2018). The Decomposition of Deformation: new metrics to enhance shape analysis in medical imaging. *Medical Image Analysis*, **46**, 35–56. <https://doi.org/10.1016/j.media.2018.02.005>
17. Gudrun A. Fridgeirsdottir, Robert J. Harris, Ian L. Dryden, Peter M. Fischer, and Clive J. Roberts (2018). Multiple linear regression modelling to predict the stability of polymer-drug solid dispersions: Comparison of the effects of polymers and manufacturing methods on solid dispersion stability *Mol. Pharmaceutics*, **15**, 1826–1841. <https://doi.org/10.1021/acs.molpharmaceut.8b00021>.
18. Kenobi, Kim and Atkinson, Jonathan A. and Wells, Darren M. and Gaju, Oorbessy and deSilva, Jayalath G. and Foulkes, M. John and Dryden, Ian L. and Wood, Andrew T.A. and Bennett, Malcolm J. (2017). Linear discriminant analysis reveals differences in root architecture in wheat seedlings by nitrogen uptake efficiency. *Journal of Experimental Botany*. **68**(17), 4969–4981. <https://doi.org/10.1093/jxb/erx300>.
19. Tan, Francisca M. and Caballero-Gaudes, Cesar and Mullinger, Karen J. and Cho, Siu-Yeung and Zhang, Yaping and Dryden, Ian L. and Francis, Susan T. and Gowland, Penny A. (2017). Decoding fMRI events in sensorimotor motor network using sparse paradigm free mapping and activation likelihood estimates. *Human Brain Mapping*, **38**, 5778-5794. <https://doi.org/10.1002/hbm.23767>
20. Varano V., Piras P., Teresi L., Gabriele S., Dryden I.L., Nardinocchi P., Evangelista A., Torromeo C., Puddu P.E. (2017). A Threefold Deformation Decomposition in Shape Analysis for Medical Imaging: Spherical, Deviatoric and Non Affine Components. In: J.M.R.S. Tavares and R.M. Natal Jorge (eds.), *VipIMAGE 2017, Lecture Notes in Computational Vision and Biomechanics 27*, Springer International Publishing AG 2018, 1125-1134. [https://doi.org/10.1007/978-3-319-68195-5\\_124](https://doi.org/10.1007/978-3-319-68195-5_124)
21. Varano, V. and Gabriele, S. and Teresi, L. and Dryden, I.L. and Puddu, P.E. and Torromeo, C. and Piras, P. (2017) The TPS Direct Transport: a new method for transporting deformations in the Size-and-shape Space. *International Journal of Computer Vision*, **124**, 384–408. <https://doi.org/10.1007/s11263-017-1031-9>
22. Dryden, I.L., Hill, B.C., Wang, H. and Laughton, C.A. (2017). Covariance analysis for temporal data, with applications to DNA modelling. *Stat*. **6**, 218–230. <https://doi.org/10.1002/sta4.149>.
23. Cheng, W., Dryden, I. L. and Huang, X. (2016). Bayesian registration of functions and curves. *Bayesian Analysis*, **11**, 447–475. <https://doi.org/10.1214/15-BA957>

24. Zhou, D., Dryden, I. L., Koloydenko, A. A., Audenaert, K. , Li, B. (2016). Regularisation, interpolation and visualisation of diffusion tensor images using non-Euclidean statistics. *Journal of Applied Statistics*, **43**, 943–978. <https://doi.org/10.1080/02664763.2015.1080671>
25. Dryden, I.L., Le, H., Preston, S.P., Wood A.T.A. (2016). Nonparametric statistical methods on manifolds. In: Rabi N. Bhattacharya: selected papers. Edited by Denker, M. and Waymire, E.C., Birkhäuser, Boston. 587–597.
26. Brignell, C.J., Dryden, I.L. and Browne, W.J. (2016). Covariance weighted Procrustes analysis. In: Riemannian Computing in Computer Vision, Edited by Turaga, P.K. and Srivastava, A., pp.189–209, Springer, New York,
27. Brown, D.M., Williams, H., Ryan K.J.P., Wilson, T.L., Daniel, Z.C.T.R., Mareko, M.H.D., Emes, R.D., Harris, D.W., Jones, S., Wattis, J.A.D., Dryden, I.L., Hodgman, T.C., Brameld, J.M. and Parr, T. (2016). Mitochondrial phosphoenolpyruvate carboxykinase (PEPCK-M) and serine biosynthetic pathway genes are co-ordinately increased during anabolic agent-induced skeletal muscle growth. *Scientific Reports*, **6**, Article number: 28693.
28. Maskrey, S.A., Mount, N.J., Thorne, C.R., Dryden, I. (2016). Participatory modelling for stakeholder involvement in the development of flood risk management intervention options. *Environmental Modelling and Software*, **82**, 275-294. <https://doi.org/10.1016/j.envsoft.2016.04.027>
29. Du, J., Dryden, I. L. and Huang, X. (2015). Size and shape analysis of error-prone shape data. *Journal of the American Statistical Association*, **110**, 368–379. <https://doi.org/10.1080/01621459.2014.908779>
30. Nurzyńska, K., Booth, J., Roberts, C. J., McCabe, J., Dryden, I., and Fischer, P. M. (2015). Long-term amorphous drug stability predictions using easily calculated, predicted, and measured parameters. *Molecular Pharmaceutics*. **12**, 3389–3398. <https://doi.org/10.1021/acs.molpharmaceut.5b00409>.
31. Varano, V., Gabriele, S., Teresi, L., Dryden, I., Puddu, P.E., Torromeo, C. and Piras, P. (2015). Comparing shape trajectories of biological soft tissues in the size-and-shape space. BIOMAT 2014, chapter 23, 351-365, World Scientific, Hackensack. [https://doi.org/10.1142/9789814667944\\_0023](https://doi.org/10.1142/9789814667944_0023)
32. Cheng, W., Dryden, I.L. and Huang, X. (2015). Ambient space inference for functional data. In: K.V. Mardia, A. Gusnanto, C. Nooney & J. Voss (eds), *Geometry-Driven Statistics and its Cutting Edge Applications: Celebrating Four Decades of Leeds Statistics Workshops*, pp. 65–68, Leeds, Leeds University Press.
33. Cheng, W., Dryden, I. L., Hitchcock, D. B. and Le, H. (2014). Analysis of Proteomics Data: Bayesian Alignment of Functions *Electronic Journal of Statistics*, **8**, 1734–1741. <https://doi.org/10.1214/14-EJS900C>
34. Cheng, W., Dryden, I. L., Hitchcock, D. B. and Le, H. (2014). Analysis of spike train data: classification and Bayesian alignment. *Electronic Journal of Statistics*, **8**, 1786–1792. <https://doi.org/10.1214/14-EJS865C>
35. Cheng, W., Dryden, I. L., Hitchcock, D. B. and Le, H. (2014). Analysis of AneuRisk65 data: internal carotid artery shape analysis *Electronic Journal of Statistics*, **8**, 1905–1913. <https://doi.org/10.1214/14-EJS938B>
36. Pigoli, D., Aston, J. A. D., Dryden, I. L. and Secchi, P. (2014). Distances and inference for covariance operators. *Biometrika*, **101**, 409–422. <https://doi.org/10.1093/biomet/asu008>
37. Dryden, I. L., Le, H., Preston, S. P. and Wood, A. T. A. (2014). Mean shapes, projections and intrinsic limiting distributions. *Journal of Statistical Planning and Inference*. **145**, 25–32. <https://doi.org/10.1016/j.jspi.2013.08.003>

38. Pigoli, D., Aston, J. A. D., Dryden, I. L. and Secchi, P. (2014). Permutation tests for comparison of covariance operators. In: Contributions in infinite-dimensional statistics and related topics Edited by Enea G. Bongiorno, Ernesto Salinelli, Aldo Goia, Philippe Vieu. Third Edition of the International Workshop on Functional and Operatorial Statistics held in Stresa, Italy. Chapter 38, 215–220. Societa Editrice Esculapio, Bologna.
39. Dryden, I. L. (2014). Discussion: Shape and Object Data Analysis. Discussion of the paper: ‘Overview of object oriented data analysis’ by J.S. Marron and A.M. Alonso. *Biometrical Journal*. **56**, 758–760. <https://doi.org/10.1002/bimj.201300220>
40. Dryden, I. L. (2014). Discussion on the paper by S. Byrne and M. Girolami. *Scandinavian Journal of Statistics*, **41**, 8–9. <https://doi.org/10.1111/sjos.12072>
41. Caballero Gaudes, C., Petridou, N., Francis, S., Dryden, I.L. and Gowland, P. (2013). Paradigm Free Mapping with sparse regression automatically detects single-trial fMRI BOLD responses. *Human Brain Mapping*. **34**, 501–518. <https://doi.org/10.1002/hbm.21452>
42. Petridou, N., Caballero Gaudes, C., Dryden, I.L., Francis, S.T. and Gowland, P.A. (2013). Periods of rest in fMRI contain transient events which are related to slowly fluctuating spontaneous activity. *Human Brain Mapping*. **34**, 1319–1329. <https://doi.org/10.1002/hbm.21513>
43. Zhou, D., Dryden, I.L., Koloydenko, A.A. and Bai, L. (2013). Procrustes Analysis for Diffusion Tensor Image Processing. *International Journal of Computer Theory and Engineering*, **5**, 108–113.
44. Bhattacharya, R.N., Buibas, M., Dryden, I.L., Ellingson, L.A., Groisser, D., Hendriks, H., Huckemann, S., Le, H., Liu, X., Marron, J.S., Osborne, D.E., Patrângenaru, V., Schwartzman, A., Thompson, H.W., and Wood, A.T.A. (2013). Extrinsic data analysis on sample spaces with a manifold stratification. *Advances in Mathematics, Invited Contributions at the Seventh Congress of Romanian Mathematicians, Brasov, 2011*, The Publishing House of the Romanian Academy (Editors: Lucian Beznea, Vasile Brîzanesco, Marius Iosifescu, Gabriela Marinoschi, Radu Purice and Dan Timotin), pp.227–240.
45. Guță, M., Kypraios, T. and Dryden, I.L. (2012). Rank-based model selection for multiple ions quantum tomography. *New Journal of Physics*. **14**, 105002. <https://doi.org/10.1088/1367-2630/14/10/105002>
46. Chernyavsky, I.L., Dryden, I.L. and Jensen, O.E. (2012). Characterising the multiscale structure of fluctuations of transported quantities in a disordered medium. *IMA Journal of Applied Mathematics*, **77**: 697–725. <https://doi.org/10.1093/imat/hxs063>
47. Jung, S., Dryden, I.L. and Marron, J.S. (2012). Analysis of principal nested spheres. *Biometrika*, **99**, 551–568. <https://doi.org/10.1093/biomet/ass022>
48. Kenobi, K. and Dryden, I.L. (2012). Bayesian matching of unlabelled point sets using Procrustes and configuration models. *Bayesian Analysis*. **7**, 547–566. <https://doi.org/10.1214/12-BA718>
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## Research Funding

- **2020-2022** NERC Developing a statistical methodology for the assessment and management of peatland (StAMP). Co-I. PI D.Large. £294,570.
- **2019-2021** EPSRC Risk prediction for Women's Health and Rights in Tanzania: novel statistical methodology to target effective interventions (BEADS). EP/T003928/1. £553,446. PI.
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- **2010** SAMSI Research Fellow, SAMSI, Research Triangle Park, North Carolina.
- **2007-2012** BBSRC/EPSCRC Centre for Integrative Plant Biology (£9.2M). Co-investigator
- **2007-2008** Leverhulme Research Fellowship. Stochastic modelling and inference for medical image analysis. (£30K)
- **2006** Royal Society Travel Award. (£1,370)
- **2005-2006** EPSRC Discipline-hopping grant, as Principal Investigator (PI). EP/C549066/1 Stochastic and Computational Face Recognition (£57,484)
- **2005-2006** Nuffield Summer Undergraduate Research Bursary. Statistical analysis of archaeological field survey data using Bayesian techniques, with C.D.Litton. (£1,400)
- **2003-2005** Collaborator on a £1M+ funded project on face identification with Universities of Sheffield, Nottingham and Kent, sponsored by the US government (TSWG/FBI). (£10,000)
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- **2001-2004** EPSRC Research Assistant, as PI. GR/R55757/01. Identifying structure from shape and image data, with H. Le and A.T.A. Wood (£157,196)
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- **1998** Collaborator with Dr. P. O'Higgins on a project with the Institute of Neurology, London to further examine brain shape in MR images of epileptic patients. Travel costs.
- **1996** EPSRC (£4600) Image fusion and shape variability workshop (jointly with Prof. K.V. Mardia).
- **1995** Collaborator with Drs. P. O'Higgins on a project with the Institute of Neurology, London to examine brain shape in MR images of epileptic patients. Travel costs.
- **1995-1998** EPSRC (£125,904) Multi-scale approaches to shape change and image warping (jointly with Prof. K.V. Mardia, Prof. J.T. Kent, Dr. C.C. Taylor, Dr. R.G. Aykroyd).
- **1994** IMS Young Researchers Travel Fund (US\$600) Travel to Toronto ASA conference.
- **1993-1996** Silsoe/MAFF (£42,000) Automatic identification of crops and weeds (jointly with Dr. C.C. Taylor).
- **1993** British Gas (£7000) A review into the use of context in image analysis (jointly with Prof. K.V. Mardia).
- **1993** Enterprise in Higher Education (£6000) To devise and implement task-focused group projects (jointly with E.J. Redfern).
- **1993** and **1994** EPSRC earmarked studentships (with Prof. J.T. Kent and with Dr. C.A. Glasbey, BioSS).
- **1992** and **1993** Royal Society (£2700) Short study and travel awards to Australia and USA.
- **1992-1995** EPSRC (£108,000) Shape analysis in 2D and 3D images (jointly with Prof. K.V. Mardia, Prof. J.T. Kent, Dr. C.C. Taylor, Prof. M.A. Smith). Post-doctoral research fellow (3 years) and computing equipment.

## Teaching and Learning

### University of Nottingham: (2019-2020)

MATH3027 Optimization (130 students)

MATH4022/MATH3026 Times Series and Forecasting (130 students)

MATH3030/MATH4068 Multivariate Analysis (150 students)

First year tutorials in Mathematics

G14DIS Undergraduate MMath Dissertation (3 dissertations)

G14SDS MSc Statistics Dissertation (6 dissertations)

Personal tutorials (21 students).

### University of Nottingham: (2010, 2012-2019)

HG2MPS Probabilistic and statistical techniques for engineers (150 students)

G14TFG: Time Series and Forecasting (40 students)

HG1M11: Engineering Mathematics I (250 students)

G14CST: Computational Statistics (8 students)

G13TST/G13TS2: Topics in Statistics (60 students)

G14ANS: Applications of Statistics (25 students)

First year tutorials in Mathematics

G14DIS Undergraduate MMath Dissertation

G14SDS MSc Statistics Dissertation

G13PJA/G13PJS Undergraduate Project

Short course: An Introduction to Time Series Analysis  
Personal tutorials.

**University of South Carolina: (2009, 2011-2012)**

STAT 205: Elementary Statistics for Biology and the Life Sciences (100 students)  
STAT 714: Linear Statistical Models (10 students)  
STAT 705: Data Analysis II (twice, 9 students and 18 students)  
STAT 718A: Statistical shape and image analysis (9 students)  
STAT 714: Linear Statistical Models. (14 students)

**University of Nottingham: (2000-2008)**

Level 1: G1ASTA Statistics (three times, 250 students)  
Level 1: HGBMPS/HG1IST Probabilistic and Statistical Techniques for Engineers (twice, 150 students)  
Level 2: G12LIN Linear models (three times, 50 students)  
Level 2: G12PRT Probability Techniques (once, 150 students)  
Level 2: G12SCM Statistical Concepts and Methods (twice, 100 students)  
Level 3: G13INF Statistical Inference (once, 80 students)  
Level 3: G13TST Topics in Statistics (once, 20 students)  
Level 3 and 4: G13AOD/G14FOS: Analysis of Data (once, 10 students)  
Level 4: G14TS2 Topics in Statistics (Spatial Statistics and Image Analysis) (three times, 2-6 students)  
Level 4: G14TFG Time series and forecasting (once, 10 students)  
Level 4: G14CST Computational statistics (once, 10 students)  
First year tutorials in Mathematics  
MMath Dissertation supervisions  
BSc/MMath Project supervisions  
Introduction to R (workshops)  
Personal Tutorials (pastoral support for undergraduates)

**University of Leeds: (1989-1996, 1997-1999)**

Level 1: MATH1730/1740 Introduction to Statistics I, II (89-96: 15 times, including repeated lectures)  
Level 1: MATH1910 Modelling and Investigations (97-99: twice)  
Level 3: MATH3722 Statistical Inference (89-91,93-94, 97-99: four times)  
Level 3: MATH3761 Sequential and Bayesian Analysis (91-94, three times)  
Level 3: MATH3792 Statistics and Images (94-96, twice)  
Level 3: MATH3750 Project supervision (94-96,97-99)  
Consultancy courses in Elementary and Introductory Statistics.  
Tutorials in Statistics, Projects and Dissertations.

**University of Chicago: (1996-1997)**

Level 1: STAT200 Elementary Statistics  
Level 1: STAT220 Introduction to Statistics for Economists  
Level 2: STAT224 Applied Regression Analysis  
Level 4: STAT338 Statistical Shape Analysis

**External Undergraduate Examiner**

University of Cambridge, 2019-2020. Part II, Statistics.  
University of York, 2012-2013. Statistics  
University of Warwick, 2004-2007. BSc, MMorse, MSc Statistics  
Open University, 2005-2007. Course MDST242

University of Surrey, 2001-2004, BSc, MMath Mathematics and Statistics  
Lancaster University, 1999-2002, BSc, MStat Mathematics and Statistics.

## **Outreach Activities**

2015-2018 Offer holder visit welcome presentations  
2014-2018 Open Day casino presentations  
2016 Mathsoc undergraduate student society talk  
2013 Nottingham Experience Summer School, Open Day  
2010, 2013, 2014 Mathematics presentation/demonstration for University of Nottingham Open Day  
2010 UCAS presentation for undergraduate degree applicants and parents  
2006, 2007, 2008 Sutton Trust Summer School presentation.  
2007 EPSRC Showcase Event at the House of Commons, UK Parliament, London, launching EPSRC's brochure on Engaging Maths which had an article on my work on face recognition.

## **Research supervision**

### **Current PhD students**

1. Lorna Burnell (Joint supervisors: Simon Gosling, Nick Mount, Markus Owen). Risks to global water resources from geoengineering the climate with solar radiation management.
2. Noha Ghazi (Joint supervisors: Clive Roberts, Jonathan Burley). 2-D Microarray Printing for Screening of Pharmaceutical Solid Dispersions.

### **Former PhD students**

3. Mohammad Faghihi (joint supervisor: Dr. C.C. Taylor: PhD awarded 1996). Shape analysis of spatial point patterns.
4. Catherine Anderson (joint supervisor: Prof. J.T. Kent: PhD awarded 1997). Object recognition using statistical shape analysis.
5. Mark Scarr (joint supervisor: Dr. C.C. Taylor: PhD awarded 1998). Texture modelling and classification using statistical image analysis.
6. Gary Walker (joint supervisor: Prof. J.T. Kent: PhD awarded 1999). The automatic matching of 2D electrophoretic gel images.
7. Rahman Farnoosh (joint supervisor: Dr. C.C. Taylor: PhD awarded 2000). Size analysis of spatial point patterns.
8. Paul McDonnell (Leeds: joint supervisor: Prof. K.V. Mardia, PhD awarded 2001). Image averaging and shape distributions.
9. Getulio Amaral (joint supervisor: Prof. A.T.A. Wood, PhD awarded 2004). Bootstrap and empirical likelihood methods in statistical shape analysis.
10. Ali Alshabani (joint supervisor: Dr. C.D. Litton, PhD awarded 2005). Statistical analysis of human movement data.

11. Mousa Golarizadeh (joint supervisor: Prof. FG Ball, PhD awarded 2006). Statistical modelling and inference for shape diffusions.
12. Kim Evans (joint supervisor: Dr. H. Le, PhD awarded 2007). Statistical analysis of shape curves and surface matching.
13. Christopher Brignell (joint supervisor: Dr WJ Browne, PhD awarded 2007). Shape analysis and statistical modelling in brain imaging.
14. Kelly Handley (joint supervisor: Dr. WJ Browne, PhD awarded 2007). Statistical analysis of mass-spectrometry data.
15. Ciprian-Ionut Duduiala (joint supervisor: Dr. J. Wattis, PhD awarded 2009). Stochastic nonlinear models of DNA breathing at a defect.
16. Irina Czogiel. Statistical inference for molecular shapes (joint supervisor: Dr CJ Brignell, PhD awarded 2010). Winner of a 2012 Gustav-Adolf-Lienert-Preis, International Biometric Society, German region.
17. Cesar Caballero Gaudes (joint supervisors: Bai Li, Penny Gowland, PhD awarded 2010). Single trial fMRI analysis.
18. Diwei Zhou (joint supervisors: Alexey Koloydenko, Bai Li, PhD awarded 2010). Statistical analysis of diffusion tensor imaging.
19. Aurélien Madouasse (joint supervisor: Martin Green, PhD awarded 2010). Statistical modelling and analysis of diary milk herd infections.
20. Nicola Stone (joint supervisor: Andrew Cliffe, 2011, PhD awarded 2011). Statistical analysis of computer models.
21. Igor Chernyavsky (joint supervisors: Oliver Jensen, Lopa Leach, PhD awarded 2011). Modelling placenta blood flow.
22. Jiejun Du. (joint advisor: Xianzheng Huang, PhD 2012, UofSC) Measurement error models in shape analysis.
23. Nicole Lewis (Joint advisor: David Hitchcock, PhD 2013, UofSC) Protein Identification using Bayesian Stochastic Search.
24. Blake Hill (joint advisor: Hao Wang, PhD 2013, UofSC) Permutation Testing for Covariance Matrices, with Applications in Shape Analysis.
25. Wen Cheng (joint advisor: Xianzheng Huang, PhD 2014, UofSC) Bayesian analysis of continuous curve functions.
26. Heather Pettitt (joint supervisor: Chris Brignell, PhD awarded 2015) Statistical analysis of computed tomography lung images.
27. Hannah Williams (joint supervisors: Jonathan Wattis, Tim Parr, John Brameld, Chungui Lu, PhD awarded 2017). Mathematical modelling of metabolic pathways in pig muscle.
28. Jonathan Davies (joint supervisor: Chris Brignell, PhD awarded 2017). Sparse regression methods with measurement-error for magnetoencephalography.
29. Anthony Hennessey (joint supervisors: Chris Fallaize, Huiling Le, PhD awarded 2018). Statistical shape analysis of large molecular data sets.
30. Andrew Hyde (joint supervisors: Andy Wood, Charlie Hodgman, Craig Sturrock, PhD awarded 2018). Statistical shape analysis of wheat root systems.

31. Katie Severn (Joint supervisor: Simon Preston, PhD awarded 2019). Manifold-valued data analysis of samples of networks.
32. Edward Acheampong (Joint supervisors: Rachel Gomes, Jamie Twycross, Jonathan Wattis), PhD awarded 2020). The impact of user behaviour on wastewater treatment and consequent water treatment.

## **Postdoctoral Researchers**

- Katie Severn funded by EPSRC
- Rowland Seymour funded by EPSRC
- Rachel Carrington funded by EPSRC
- Alfred Kume (now Senior Lecturer, University of Kent) funded by EPSRC
- Kim Kenobi (now Lecturer, University of Aberystwyth) funded by ERC
- Kwang-Rae Kim (now SAS Korea) funded by EPSRC

## **Visiting PhD students**

Luigi Ippoliti (Italy, 5 months), Antonio Gattone (Italy, 1 year), Simone di Zio (Italy, 5 months), Riccardo di Nisio (Italy, 4 months) and Asger Hobolth (Denmark, 6 months).

## **Dissertations**

Several Masters dissertations, with topics including:

The analysis of genetic SNP data in a study of Alzheimer's Disease using functional mixed effect models. Elicitation of the effect of treatment in veterinary medicine. Using Gaussian Graphical Models to estimate gene networks. Analysis of a questionnaire of HPV vaccine knowledge in Greek women. High dimensional sparse regression. DNA shape analysis. Symbolic data analysis. Network analysis.

Undergraduate projects and dissertations. I have supervised a very large number of individual undergraduate projects and dissertations on a wide range of topics, e.g. extreme value theory, survival analysis, shape analysis, mass spectrometry analysis, microarray analysis, spatial statistics, directional data analysis, university league tables, classification.

## **Mentor**

Royal Society University Research Fellowship scheme.

## **PhD and habilitation examinations conducted**

**External PhD examiner:** 1999: Imperial College, University of Wales Swansea, University of Glasgow; 2000: University of Edinburgh, University of Sheffield, University of Newcastle; 2001: University of Bath, Open University, University of Trondheim (Norway); 2003: University of Lancaster; 2005: University of

Leeds; 2006: University of Sheffield; 2007: University of Cambridge, University of Hertfordshire; 2008: University of Glasgow, Imperial College, University of Cambridge, University of Leeds; 2011: University of Warwick; 2014: University of Bath; 2016: University of Côte d’Azur (France); 2017: University of Paris-Saclay (France), University of Glasgow; 2019: École Polytechnique Fédérale de Lausanne (Switzerland); University of Jyväskylä (Finland); 2020: University of Edinburgh.

**Internal PhD examiner:** Leeds (x4), Nottingham (x3).

University of South Carolina (2011-2013): Several PhD Committees and an undergraduate honors dissertation committee.

**Habilitation:** Ecole Normale Supérieure Cachan, France (2013), Université d’Auvergne, France (2015).

## Presentations

I have given over 200 presentations in many countries, including Australia, Austria, Belgium, Brazil, Canada, Denmark, Finland, France, Greece, Germany, Hong Kong, Hungary, India, Italy, Lithuania, New Zealand, Romania, South Africa, Spain, Sweden, Switzerland, Turkey, UK, USA.

1. Manifold valued data analysis of samples of brain networks. Remote presentation at ENAR, Nashville, March 24, 2020.
2. Smoothing splines on Riemannian manifolds, with applications to 3D shape spaces. CMStatistics, London. December 15, 2019.
3. Object data driven discovery. Joint Statistical Meetings, Denver. July 31 2019.
4. Object data driven discovery. Congress of Romanian Mathematicians, Galati, Romania, June 30, 2019.
5. Object oriented data analysis of samples of networks, Oberwolfach, Germany, June 18, 2019.
6. 3rd David Finney Lecture, “Object data driven discovery”, Centre for Statistics, University of Edinburgh, June 10, 2019.
7. Manifold-valued data analysis of samples of networks, Department of Mathematics and Statistics, University of Jyväskylä, Finland, June 4, 2019.
8. Object data driven discovery, Department of Mathematics and Statistics, University of Helsinki, Finland, June 3, 2019.
9. Manifold-valued data analysis of samples of networks: Department of Statistics, University of South Carolina, February 21, 2019.
10. Manifold-valued data analysis of samples of networks: Department of Statistics, Ohio State University, March 5, 2019.
11. Manifold-valued data analysis of samples of networks: Department of Statistics, Florida State University, March 8, 2019.
12. Object data driven discovery, Newton Institute, Cambridge, March 18, 2018.
13. Bayesian Top Space and Quotient Space inference for object data, Newton Institute, Cambridge, November 15, 2017.
14. Principal nested sub-space analysis on manifolds, Workshop on Applications-Driven Geometric Functional Data Analysis, Florida State University, USA, October 9, 2017.
15. Bayesian ambient space inference for object data, CIRM Luminy, France, September 1, 2017.
16. Object Data Driven Discovery, Italian Statistical Society Conference, Florence, June 29, 2017.
17. Sparsity and measurement error in the statistical analysis of MEG data. International Biometric Society Regional Meeting on *Statistical image analysis in medicine and biology*, London, May 23, 2017.
18. Penalized Euclidean Distance Regression, Eötvös Loránd University, Budapest, April 28, 2017.



19. Statistical shape analysis: faces, arteries and enzymes, Eötvös Loránd University, Budapest, April 25, 2017.
20. Principal Nested Shape Space Analysis of Molecular Dynamics Data statistics seminar, University of Cambridge, November 18, 2016.
21. Principal Nested Shape Space Analysis of Molecular Dynamics Data JSM 2016, Chicago, USA. August 2, 2016.
22. Principal nested spheres analysis of molecular dynamics data, Today's Data Predicting Tomorrow, Centre for Data Science, Loughborough University, April 12, 2016.
23. A statistical journey: from Florence Nightingale to Homer Simpson, Mathsoc Talk, University of Nottingham, March 15, 2016.
24. Principal nested shape spaces, with applications to molecular dynamics data CMStatistics, London, December 12, 2015.
25. Ambient space inference for functional data LASR 2015, University of Leeds, June 30, 2015.
26. Penalized Euclidean Distance Regression Statistics Seminar, University of York, May 14, 2015.
27. Penalized Euclidean Distance Regression STOR-i Annual Workshop, Lancaster University, January 8, 2015.
28. Sparse Paradigm Free Mapping Statistical Challenges in Neuroscience, University of Warwick, September 3, 2014.
29. High-dimensional manifold-valued data analysis: principal nested subspaces SIAM Imaging Science Conference, Minisymposium, Hong Kong, May 14, 2014.
30. Curve modelling in shape spaces Rome III University, Italy, December 16, 2013.
31. Sparse Paradigm Free Mapping: detection of brain activations and resting state networks in fMRI Newcastle University, December 6, 2013.
32. Discussant: Shape Analysis session. SCO 2013, Politecnico di Milano, Italy, September 11, 2013.
33. Bayesian Registration and Shape Analysis of Object Data, with Applications to Proteomics and Medical Imaging, Joint Statistical Meetings, Montreal, Canada. August 7, 2013.
34. 3D Shape Analysis European Meeting of Statisticians, Budapest, Hungary. July 25, 2013.
35. Sparse Paradigm Free Mapping: an inverse problem in fMRI, University College London, Centre for Inverse Problems Opening Workshop, March 18, 2013.
36. Bayesian peptide identification from mass spectrometry data, ISBA Regional Meeting/IWCBTA, Banaras Hindu University, Varanasi, India. January 10, 2013.
37. Bayesian registration and shape analysis of object data, with applications to proteomics and medical imaging, Statistics seminar, Durham University, December 3, 2012.
38. Registration Invariance, Bayesian protein analysis, Carotid Artery Analysis, Statistics of Time Warpings and Phase Variations, MBI, Columbus, Ohio, November 13-16, 2012.
39. Sparse Paradigm Free Mapping: detection of activations and resting state networks in fMRI, Statistische Woche, Technical University Vienna, September 19, 2012.
40. Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields, Department of Biostatistics, MD Anderson Cancer Center, Houston, May 10, 2012.
41. Sparse Paradigm Free Mapping: detection of activations and resting state networks in fMRI, NOGGINS Workshop, Department of Statistics, University of Georgia, April 19, 2012.
42. Sparse Paradigm Free Mapping: detection of activations and resting state networks in fMRI, Applied Mathematics Colloquium, New Jersey Institute of Technology, February 17, 2012.
43. Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields, Department of Biostatistics, Georgia Health Sciences University, Augusta, February 2, 2012.
44. Power Euclidean metrics for covariance matrices, with application to Diffusion Tensor Imaging, Biostatistics Forum, University of South Carolina, September 28, 2011.

45. Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields, Department of Mathematical Sciences, Clemson University, September 15, 2011.
46. Curve modeling in shape spaces, Computation for Anatomy Workshop, Banff International Research Station, Banff Canada, August 28, 2011.
47. Manifold data analysis, Joint Statistical Meetings, Miami Beach, August 3, 2011.
48. Bayesian molecular alignment using random fields, Leeds LASR Workshop, Leeds, UK, July 6, 2011.
49. Manifolds, metrics and geometric correspondence, AOOD Transitional Workshop, SAMSI, North Carolina, June 10, 2011.
50. Paradigm Free Mapping with Sparse Regression, SRCOS meeting, Hickory Knob State Park, McCormick, South Carolina, June 7, 2011.
51. Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields, Department of Electrical and Computer Engineering, North Carolina State University, April 15, 2011.
52. Face shape identification, South Carolina Chapter of the ASA, 41st Annual Meeting, April 8, 2011.
53. Mixed effect modelling of proteomic mass-spectrometry data, ENAR, Miami, March 21, 2011.
54. Curve modeling in shape spaces, Biostatistics seminar, University of North Carolina, Chapel-Hill. February 23, 2011.
55. 'Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields.' Statistics Seminar, Cornell University, October 1, 2010
56. Signal Processing and Communications Seminar, University of Cambridge, November 17, 2010.
57. Several presentations as part of the Analysis of Object Data Program: Paradigm Free Mapping in fMRI, Metrics for Covariance Matrices, Shape matching using random fields, Autumn 2010, SAMSI, North Carolina.
58. Three sessions on Statistical Shape Analysis as part of the 'Analysis of Object Data I' course, SAMSI, North Carolina, September/October, 2010.
59. 'Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields.' European Meeting of Statisticians, University of Piraeus, Greece, August 21, 2010.
60. 'Statistical analysis of brains using diffusion tensor images.' International Workshop on Statistical Modelling, University of Glasgow, July 8, 2010.
61. 'A Statistical Journey: Florence Nightingale Meets Homer Simpson.' Open Day, University of Nottingham, June 26, 2010.
62. 'Curve modelling in shape spaces.' Second UK One-day Meeting on Morphometrics and Statistical Shape Analysis, University of Kent, June 7, 2010.
63. 'Statistics of faces.' UCAS talk, University of Nottingham, March 3, 2010.
64. 'Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields.' Department of Statistics, Florida State University, December 4, 2009.
65. 'Face shape identification: how different are we?' Research Seminar, Department of Statistics, University of South Carolina. November 24, 2009.
66. 'Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields.' Department of Statistical Science, Duke University, November 13, 2009.
67. 'Non-Euclidean statistics for covariance matrices, with applications to diffusion tensor imaging.' Shape Stats/Medial Geometry Group. University of North Carolina, Chapel Hill. October 9, 2009.
68. 'Non-Euclidean statistics for covariance matrices, with applications to diffusion tensor imaging', Department of Statistics Colloquium, University of Georgia, October 1, 2009.
69. 'Non-Euclidean statistical analysis of covariance matrices and diffusion tensors' ISI Congress, Durban, South Africa, August 19, 2009.

70. 'Non-Euclidean statistics for covariance matrices, with applications to diffusion tensor imaging' Leeds LASR Workshop 2009, July 7, 2009.
71. 'Face shape identification' RSS East Kent Local Group, July 2, 2009.
72. 'Non-Euclidean statistics for covariance matrices, with applications to diffusion tensor imaging' SRCOS 2009, Jekyll Island, Georgia, June 10, 2009.
73. 'Mixed effect modeling of proteomic mass-spectrometry data' Department of Statistics Colloquium, University of South Carolina, February 26th, 2009.
74. 'A short introduction to Bayesian statistics' Sir Peter Mansfield MR Centre, University of Nottingham, December 5th, 2008.
75. 'Non-Euclidean statistics for diffusion tensors in brain imaging', RSS General Applications Section, RSS Headquarters, December 3rd, 2008.
76. 'Face shape identification', Young Statisticians Training Day, Royal Statistical Society International Conference 2008, University of Nottingham, September 1st, 2008.
77. 'Non-Euclidean statistics for covariance matrices, with applications to diffusion tensor imaging', University of Warwick, June 19th, 2008.
78. 'Non-Euclidean statistics for shapes and covariance matrices', INRIA, Sophia Antipolis, France, June 6th, 2008.
79. 'Shape analysis and molecule matching', Shape and Size in Medicine, Biotechnology and Materials Science, Workshop, Università degli Studi di Milano, Italy, April 29th, 2008.
80. 'Face shape identification', Research Students Conference, Plenary presentation, University of Nottingham, March 31st, 2008.
81. 'Multilevel modelling of proteomic mass spectrometry data', Newton Institute, University of Cambridge, March 13th, 2008.
82. 'The statistical analysis of diffusion tensor images', Seminar, University of Lancaster, February 15th, 2008.
83. 'Shape analysis and molecule matching', RSS North East Group, University of Newcastle, January 17th, 2008.
84. 'Shape analysis and molecule matching', Isaac Newton Institute Workshop, January 7th, 2008 (poster).
85. 'Face shape identification', Internal Seminar, Division of Statistics, University of Nottingham, December 19th, 2007.
86. 'Shape analysis and molecule matching', Seminar, University of Southampton, December 6th, 2007.
87. 'The statistical analysis of diffusion tensor images', Seminar, University of Bristol, November 30th, 2007.
88. 'Shape analysis and molecule matching' Seminar, University of South Carolina, USA, September 27th, 2007.
89. 'Factored principal components analysis and likelihood based face recognition' International Workshop on Statistical Modelling, Barcelona, July 4th, 2007.
90. 'Face shape identification: how different are we?' Seminar, University of Bath, April 27th, 2007.
91. 'Travels in Shape Spaces' Seminar, University of Glasgow, November 29th, 2006.
92. 'Statistical shape analysis and its applications' Data Sciences Meeting, Unilever, Port Sunlight, Wirral, October 4th, 2006.
93. 'Face shape identification: how different are we?' RSS Conference, Belfast, September 11th, 2006.
94. 'Ornstein-Uhlenbeck shape processes, simulation and inference' IMS Annual Meeting, Rio de Janeiro, Brazil, July 30th, 2006.
95. 'Travels in Shape Spaces' Swiss Statistics Seminar, Berne, Switzerland, May 19th, 2006.
96. 'Shape space smoothing splines for planar landmark data' IMA workshop on Shape Spaces, Minneapolis, USA, April 3rd-7th, 2006 (poster).

97. 'Summarizing shape variability and hypothesis testing'. MICCAI Tutorial on Statistics of Anatomic Geometry, Palm Springs, USA, October 26th, 2005.
98. 'Statistical analysis of unlabelled point sets: comparing molecules'. Stochastic geometry and its applications, Berne, Switzerland, October 7th, 2005.
99. 'Statistical analysis of SELDI protein chip data from breast cancer cell lines exposed to chemotherapeutic agents LASR workshop', University of Leeds, July 4th, 2005.
100. 'Shape densities, shape diffusions and some old friends'. RSS General Applications and Statistical Computing Sections, London. June 8th, 2005.
101. 'Non-stationary spatio-temporal analysis of karst water levels' RSS/EPSRC funded workshop on Spatio-temporal Modelling, University of Southampton, May 26th, 2005.
102. 'Surface shape analysis, with applications to MR brain images and spine profiles' RSS Medical Section, London. April 26th, 2005.
103. 'Statistical analysis on high-dimensional spheres and shape spaces' Bernoulli World Congress, Barcelona. July 30th, 2004.
104. 'Shape analysis in mathematical medicine' Keynote, ECCOMAS, Jyväskylä, Finland. July 25th, 2004.
105. 'Size and shape analysis of DNA molecular dynamics simulations' Minisymposium, ECCOMAS, Jyväskylä, Finland. July 25th, 2004.
106. 'Hierarchical Bayesian modelling of spatial age-dependent mortality' EPSRC/NERC EMS workshop, Nottingham. April 15th, 2004.
107. 'Statistical shape analysis [short course]' 3e cycle romand de statistique et probabilités appliqués, Les Diablerets, Switzerland. March 7th-10th, 2004.
108. 'Statistical shape analysis of points, functions, curves and surfaces' Young Researcher's Day, Université Catholique Louvain, Belgium. 19th May, 2003.
109. Three lectures at the CNRS funded workshop Mathematics in Computer Vision, Cachan, France, May, 2003.
110. 'Surface shape analysis from MR images' Sesto Convegno Internazionale Metodi Quantitativi per le Scienze Applicate, Sienna, Italy, September 19th, 2002.
111. 'Statistical Shape Analysis [short course]' Jyväskylä Summer School, Jyväskylä, Finland. August 12-16, 2002.
112. 'Statistical Shape Analysis [short course]' SINAPE (Brazilian National Symposium of Probability and Statistics), Aguas de Lindoia, Brazil. 29th July-2nd August, 2002.
113. 'Surface shape analysis from MR images' SINAPE (Brazilian National Symposium of Probability and Statistics), Aguas de Lindoia, Brazil. 29th July-2nd August, 2002.
114. 'Nonparametric shape analysis' Nonparameterics conference, Crete, Greece. July 17th, 2002.
115. 'Surface shape analysis from MR images' Stochastic geometry, spatial statistics and statistical physics workshop. Oberwolfach, Germany. 10th-16th, February, 2002.
116. 'Statistical Shape Analysis [short course]' Danish Technical University, Copenhagen. November, 2001.
117. 'Statistical Shape Analysis [short course]' RSS conference Glasgow, July, 2001.
118. 'Surface shape from MR images' Leeds LASR conference on Functional and spatial data, July 2001.

plus approximately 90 presentations 1987-2000

**2000** Computational Stochastics workshop, Århus, Denmark; Leeds LASR Workshop: Shape, directions and images; Pescara, Italy: Spatial Statistics in Archaeology; Minnesota, USA: Computer Vision Workshop; RSS Statistics in Image Analysis and Processing study group meeting Bath.

**1999** A series of 8 workshops and a conference presentation on shape analysis at the Indian Statistical Institute, Calcutta; Statistical image analysis workshop, Gothenburg, Sweden; Shape Analysis short course at the JSM, Baltimore, USA.

**1998** Oberwolfach, Germany (Stochastic Geometry and Spatial Statistics meeting <https://doi.org/10.14760/TB-1998-1>);

Sherbrooke, Canada (Statistical Society of Canada); Vilnius, Lithuania (EMS); Strathclyde (RSS98)  
**1997** Duke University, USA (Statistics workshop, three lectures); Auckland (New Zealand Statistical Association conference); Newcastle University, Australia (Image matching workshop); Istanbul, Turkey (ISI Biennial conference); Open University (8th one day conference on Spatial Statistics)  
**1996** Toulouse (Semstat3)  
**1995** Oberwolfach, Germany (Mathematische Stochastik meeting <https://doi.org/10.14760/TB-1995-10>); Leeds (CISSA shape conference)  
**1994** Toronto (ASA joint meetings); Newcastle (RSS94)  
**1993** Philadelphia (IMS/ENAR Regional Meeting); Paris (ORSA Probability in Engineering); Lithuania (European Young Statisticians Meeting); Leeds (Shape workshop).  
**1992** Hong Kong (Multivariate Analysis symposium); Sydney (Anatomy symposium); Sheffield (RSS92).  
**1990** Princeton, USA (SS Wilks Workshop); Oberwolfach, Germany (Probabilities on Groups conference).  
**1989** Leuven, Belgium (Statistics, Earth and Space Sciences); Glasgow (Research students' conference).  
**1988** Surrey (Research students' conference)  
 and additional statistics seminars at  
**2004** Sheffield. **2003** Lancaster, Kent, York. **2001** Newcastle, Manchester, Cambridge. **2000** Sheffield, Bristol, Eötvös Loránd University (Budapest), Edinburgh. **1999** Bath, Strathclyde. **1998** University of Western Ontario, Canada; Joint Reading/Surrey/Royal Holloway seminar at Reading; Birmingham. **1997** Australian Statistical Association, Canberra Chapter; ANU, Canberra and University of Queensland, Brisbane, Australia. **1996** Imperial College, University of Chicago (USA). **1995** Bristol, Birmingham, Highland RSS Group, Leeds (Medical Statistics). **1994** UMIST, Warwick. **1993** Penn State (USA), Rutgers (New Jersey, USA), Temple (Philadelphia, USA), Bell Labs (New Jersey, USA), Lancaster. **1992** Sydney (CSIRO), Western Australia (Mathematics), Western Australia (Biology), London (LSE). **1991** Surrey, Bristol, Glasgow, Edinburgh, Manchester. **1990** Sheffield, Nottingham, Leeds (Medical Statistics). **1988** Leeds. **1987** Leeds.

## Conference and Workshop Committees

2019 Mathematical Foundations of Computational Anatomy, Shenzhen, China.  
 2017 Mathematical Foundations of Computational Anatomy, Quebec City, Canada.  
 2016 Statistical analysis of manifold-valued data and beyond, University of Nottingham  
 2016, 2017 CVPR workshop on DIFFerential geometry in Computer Vision and Machine Learning (DIFF-CVML)  
 2015 Mathematical Foundations of Computational Anatomy, Munich, Germany.  
 2013 Mathematical Foundations of Computational Anatomy, Nagoya, Japan.  
 2010-11 SAMSI Program on the Analysis of Object Oriented Data, North Carolina.  
 2011 Mathematical Foundations of Computational Anatomy, Toronto.  
 2009 The 10th European Congress of Stereology and Image Analysis, Milan.  
 2008 Mathematical Foundations of Computational Anatomy, New York.  
 2006 Mathematical Foundations of Computational Anatomy, Copenhagen.  
 2004 NERC-EPSRC EMS workshop on modelling uncertainty in complex environmental and biological systems, Nottingham.  
 1995-96, 1998-99 Leeds Research Workshop joint organizer  
 1994-1997 Royal Statistical Society: Research Section Committee. Joint organizer of RSS/BMVA meetings.  
 1995-1996 The RSS96 Conference Planning Committee (Research Section Representative)  
 1995 European Young Statisticians' Meeting (EYSM95) UK Organizer

## Editorial service and reviewing

I have carried out a large amount of refereeing for all the main Statistics journals. I have also reviewed for biomedical journals, image analysis journals, book publishers, and many research funding councils.

2018 EPSRC CDT outline stage panel (April 2018)

2016 EPSRC Mathematics Panel (September 2016)

2014-2016 Royal Society International Exchanges Committee

2007-2013 Member of the Editorial Board of Methodology and Computing in Applied Probability

2008-2010 Joint Guest Editor: Shape Analysis Special Issue in IEEE Pattern Analysis and Machine Intelligence (April 2010 issue)

2007-2008 Royal Statistical Society Research Section Committee Chair

*The Research Section Committee deals with the editorial processes for handling the Royal Statistical Society's prestigious discussion papers, and other research related issues*

2006 EPSRC Doctoral Training Grant Mathematics Panel (Postgraduate Training Allocations, December 2006)

2006 EPSRC Review panel for Statistics Mobility Fellowships (May 2006)

2003 Statistics assessor for University of Hong Kong RAE internal review

2006-2007 Royal Statistical Society Research Section Committee member

2002-2005 Associate Editor of the Journal of the Royal Statistical Society Series C

2002-2008 EPSRC Peer Review College member

2000-2002 EPSRC Cross-disciplinary panel

2000 FCT Portuguese Foundation of Science Mathematics visiting panel

1998-2000 RSS Research Section Honorary Secretary

1995-1998 Editorial board of Computerized Medical Imaging and Graphics Journal

1997-1998 Associate Editor of the Journal of the Royal Statistical Society Series B

1994-1997 Royal Statistical Society Research Section Committee member

1993-1998 Book Review Editor for Journal of Applied Statistics.

## Earlier Service (1991-2012)

2011-2012 UofSC Department of Statistics Hiring Committee Member.

2011-2012 Colloquium Chair, Department of Statistics, University of South Carolina.

2011-2012 Palmetto Lecturer Chair, Department of Statistics.

2011-2012 May Qualifying Exam Committee (Chair in 2011), Department of Statistics, University of South Carolina.

2009-2011 Program Organizer SAMSI program on the Analysis of Object Data.

2011-2012 Department of Statistics Computing Committee Member, University of South Carolina.

2009 Department of Statistics Hiring Committee Member.

2009 Department of Statistics Computing Committee Chair, University of South Carolina.

2009-2012 Theme Leader, Highly Structured Data, Department of Statistics, University of South Carolina.

2006-2009 Management Group, Centre for Medical Imaging and Analysis on the GRID, UoN.

2007-2008 Bridging-the-Gaps Strategy Group. Large Datasets Theme Leader.

2007-2008 Knowledge Transfer Network (KTN) for Industrial Mathematics Scientific Committee member, Smith Institute.

2006-2008 Honours Committee, Royal Statistical Society

2006-2008 Royal Statistical Society Consultation Group

2004-2007 Director of Research and Chair of Research Committee, School of Mathematical Sciences.

2005-2006 Postgraduate Training Working Group (Chair). 2005-2007 Engineering and Physical Sciences Strategy Group for research, University of Nottingham.

2004-2005 Faculty of Science Postgraduate Taught Courses Committee

2002-2004 Honorary Secretary (Membership Secretary), Royal Statistical Society.  
 2002-2004 Member of Council, Royal Statistical Society,  
 2002-2004 Executive Committee member, Royal Statistical Society,  
 2002-2004 Professional Affairs Committee member, Royal Statistical Society.  
 2002-2004 Education Committee member, Royal Statistical Society  
 2002-2004 Examinations Committee member, Royal Statistical Society.  
 2002-2004 Membership Services Group (Chair), Royal Statistical Society.  
 2000-2004 Resources Committee Chair. 2000-2004 Examinations Monitoring Group. 2001 Major Course Review Committee; 2000-2008 Statistics Web Co-ordinator. 1997-2000 Postgraduate Research and Admissions Tutor for Statistics; 1998-2000 School of Mathematics Staff/Postgraduate Committee (Chair); 1998-2000 Programme Committee of the RSS; 1997-2000 Statistics Seminar Organizer; 1998-2000 PG training organizer for the School of Mathematics; 1990-96, 97-99 (Leeds), 2000-01 (Nottingham) UCAS Interviewer; 1998-1999 Faculty Research Committee; 1995-96, 97-2000 School of Mathematics IT Committee; 1997-2000 Department of Statistics Teaching and Learning Committee; 1994-2000 RSS Leeds-Bradford Local Group Committee; 1995-1996, 1997-1999 Centre of Medical Imaging Research steering group, University of Leeds; 1997-2000 School of Mathematics/Education Liaison Committee; 1997-2000 School of Mathematics Public Relations Committee; 1998-2000 School of Mathematics Research Advisory Group; 1999-2000 School of Mathematics Staff Development Group; 1991-1997 University of Leeds: Board of the Faculty of Science; 1994-1996 Web developer for Department of Statistics, Leeds.

## **Professional and learned societies**

Associate Fellow of the Higher Education Academy (Nottingham Recognition Scheme)  
 Member of the International Biometric Society (ENAR)  
 Fellow of the Royal Statistical Society  
 Member of the American Statistical Association  
 Elected Fellow of the Institute of Mathematical Statistics (2012)  
 Elected Member of the International Statistical Institute (2004)  
 Chartered Statistician (CStat) of the Royal Statistical Society (2002, revalidated 2016).

June 7, 2020.

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**CURRICULUM VITAE**  
*Jason W. Mitchell, PhD, MPH*

**CONTACT INFORMATION**

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Zoom: <https://zoom.us/j/9326562911>

**RESEARCH INTERESTS**

- Gender and sexual minority adults, couples
- Leveraging mHealth, eHealth, telehealth for intervention development
- LGBT health, HIV/STI and substance use prevention
- Mixed methods and advanced methods for tailoring interventions (SMART/MOST/JITAI)

**TEACHING INTERESTS**

- Applied health behavior theory
- Intervention development using iterative processes and human-centered designs
- LGBT health
- Mixed methods
- Digital technologies for Public Health
- Grant and manuscript development
- Mentorship

**ACADEMIC APPOINTMENTS**

8/2019 – present	Associate Professor (tenured), University of Hawai'i at Mānoa, Office of Public Health Studies
10/2016 – 7/2019	Assistant Professor (tenure-track), University of Hawai'i at Mānoa, Office of Public Health Studies
7/2014 – 9/2016	Assistant Professor (tenure-track), University of Miami Miller School of Medicine, Department of Public Health Sciences, Division of Prevention Science and Community Health
7/2012 – 6/2014	Assistant Professor (tenure-track), University of Michigan School of Nursing, Division of Risk Reduction and Health Promotion Programs

**EDUCATION**

2010 – 2012	Post-Doctoral Training in HIV Prevention Research Center for AIDS Intervention Research (CAIR) Medical College of Wisconsin – Milwaukee, Wisconsin Department of Psychiatry and Behavioral Medicine Grant: T32-MH19985 (PI: Pinkerton, S. D.) Mentors: Jeff Kelly, PhD; Steve Pinkerton, PhD; Andrew Petroll, MD
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- 2006 – 2010      PhD in Public Health, Health Behavior & Health Promotion  
Oregon State University – Corvallis, Oregon  
Department of Public Health  
Dissertation Title: “*Examining the Role of Relationship Characteristics and Dynamics on Sexual Risk Behavior among Gay Male Couples*”  
Mentors: S. Marie Harvey, DrPH; Donna Champeau, PhD
- 2000 – 2003      MPH in Epidemiology  
University of Hawai’i at Mānoa – Honolulu, Hawai’i  
Department of Public Health Sciences  
Thesis Title: “*Reaching Those Most at Risk for HIV: A Detailed Report on Hawai’i’s Community-based Organizations’ Prevention Efforts for Men who Have Sex with Men*”  
Mentor: Alan Katz, MD, MPH
- 1996 – 2000      B.S. in Biology  
Widener University – Chester, Pennsylvania  
Mentor: David Coughlin, PhD

## **ADDITIONAL TRAINING**

- 2012              mHealth Winter Training Institute by National Institutes of Health (12/1 – 12/2), Washington, D.C.
- 2013              Multilevel Modeling by Statistical Horizons (3/21 – 3/22), Philadelphia, PA
- 2013 – 2015      NIH Loan Repayment Program: HIV/AIDS Clinical Research. Qualitative methods training (Mentors: Guillermo Prado, PhD and Julie Barroso, PhD)
- 2015              Optimization of Behavioral and Biobehavioral Interventions. Funded by NIH (PI Linda Collins) (5/15 – 5/20), Bethesda, MD
- 2015 – 2017      NIH Loan Repayment Program: HIV/AIDS Clinical Research. Mixed methods training (Mentor: Julie Barroso, PhD)
- 2017 – 2019      NIH Loan Repayment Program: HIV/AIDS Clinical Research. Longitudinal dyadic data analysis training

## **FELLOWSHIPS AND HONORS**

- 2015              NIH Early Career Reviewer Program, Center for Scientific Review, National Institutes of Health
- 2014, 2015      Faculty merit award for scholarship activity, University of Miami Miller School of Medicine
- 2013              Faculty merit award for scholarship activity, University of Michigan School of Nursing
- 2010 – 2012      Ruth L. Kirchstein NRSA Postdoctoral Fellowship, Center for AIDS Intervention Research, Medical College of Wisconsin

2010	Honorable Mention, Excellence in Abstract Submission for Next Generation of HIV/AIDS Scholars, American Public Health Association
2009 – 2010	Ruth Gill-Hammond Dissertation Fellowship, Oregon State University
2008	Art Koski Fellowship, Oregon State University
2006 – 2009	Graduate Student Teaching Fellowship, Oregon State University, Department of Public Health
2001 – 2003	Graduate Teaching Assistantship, University of Hawai'i
2000 – 2001	Graduate Student Fellowship, University of Hawai'i
1998 – 2000	Biological Honor Society, Widener University

## CURRENT RESEARCH PROJECTS – NIH FUNDED

### *Principal Investigator*

8/01/19 – 7/30/22	<p><i>Heterosexual couples' attitudes and associated factors of couple's HIV testing and counseling</i></p> <p>1R21MH118966-01 (PI: Mitchell J) – NIMH \$369,658 (with NCE)</p> <p>Couples HIV testing and counseling (CHTC, known as Testing Together) entails both partners of the couple receive counseling, test for HIV/STIs, and obtain their test results together. The majority of studies involving heterosexual couple-based HIV risk reduction interventions in the US, including CHTC, have been conducted with specific subgroups (e.g., drug-users) and/or occurred in a specific location (e.g., methadone clinics). Although these projects have demonstrated effectiveness for reducing HIV risk, implementation and uptake of CHTC to capture a wider range of mixed-sex couples is critical as heterosexual sexual transmission accounts for 25% of new HIV infections in the US. As such, additional research is needed to identify barriers and facilitators of CHTC uptake among mixed-sex couples. Offering CHTC to a larger number and wider range of couples would help increase identification of serodiscordant dyads, link newly diagnosed partners to HIV care and treatment, and promote the uptake of other primary prevention strategies (e.g., condoms, PrEP) among those who receive a HIV-negative test result. Implementation and training needs of HIV test counselors must also be considered to increase uptake of CHTC among more mixed-sex couples in the US. Thereby, we propose to conduct a novel, mixed method, two-year project with a nation-wide sample of 300 mixed-sex couples, and 25 HIV test counselors who provide CHTC, as well as 25 HIV test counselors who are CHTC untrained / naïve. All study activities will occur online through established protocols by using HIPAA-compliant web servers, survey software, and video portals. To begin, we will conduct a nation-wide, cross sectional survey to collect quantitative dyadic data from 300 mixed-sex couples to assess their willingness to use CHTC and associated factors (Aim 1). We hypothesize that couples will fall into 3 groups on whether both, neither, or only one partner (i.e., discrepant) is willing to use CHTC. Among these 300 couples, we will then randomly select 30 couples to conduct qualitative interviews with equal representation from each of these 3 groups to</p>
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explore and contextualize their perceived barriers and facilitators toward using CHTC; both partners will be interviewed separately and simultaneously (Aim 2). Finally, we will conduct qualitative interviews with 50 HIV test counselors (25 provide CHTC, 25 untrained) to examine and identify their implementation and training needs to provide CHTC to more mixed-sex couples (Aim 3). Our findings will help identify what additional implementation and training needs are required for HIV test counselors, as well as the strategies to increase willingness to use CHTC to achieve greater uptake of CHTC among more mixed-sex couples in the US.

07/05/18 – 05/31/21 *A patient-centered decision aid to inform HIV prevention choices for at-risk male couples in new relationships*

1R21MH116684-01A1 (PI: Mitchell J) – NIMH

\$377,498 (with NCE)

Up to two-thirds of MSM acquire HIV from their main partner (i.e., male couples). Given the multitude of available HIV prevention options, male couples may experience anxiety and decisional conflict in determining which HIV prevention methods to use in their relationship. Moreover, uptake of different evidence-based preventive strategies (e.g., PrEP, nPEP, couples- and individual-level HIV/STI testing) remains subpar in these two groups of male couples, which inhibits the overarching goal to reduce HIV and STI incidence. Patient-centered decision aids (PtDAs) have been shown to reduce decisional conflict and increase uptake of preventative behaviors; however, there are no existing couples-based HIV prevention PtDAs to assist male couples in choosing and then using their selected strategy(ies). The overarching goal of this two-year, mixed method project is to develop and examine the acceptability of a tailored, web-based, patient-centered decision aid (PtDA) to encourage a convenience sample of at-risk male couples in new relationships to develop a prevention plan, and order and use their selected prevention strategies based on their plan. Method: All project activities will be web-based. First, semi-structured, individual qualitative interviews will be conducted with both partners of 45 male couples (n=90 men), who are in new relationships, to examine perceived barriers and facilitators of partners' decision-making processes to use prevention strategies in their relationship (Aim 1). Findings from Aim 1 will be combined and applied to the proposed outline, design, and experience of the PtDA with the web development company, consultant, and community advisory board (CAB). The CAB and investigative team will then test the prototype and alpha version of the PtDA before beginning Aim 2 with the beta version of it. With the use of a different convenience sample of 30 eligible male couples in new relationships (Aim 2), the acceptability of the PtDA will be assessed to (1) create a prevention plan that meets their needs, and (2) order and (3) use/intend to use their selected HIV preventive strategy(ies) in the near future. Acceptability of the PtDA's (4) content, (5) exercises, (6) menu-order system, and (7) aesthetic appeal will also be examined. Semi-structured, individual interviews will be conducted 1 month after being given access to use the PtDA to examine primary acceptability outcomes 1-3, and secondary outcomes 4-7. The sample – for both aims – will be stratified (e.g., race/ethnicity, couples' HIV-status). Significance: If acceptability of the HIV prevention PtDA is high and shows initial promise to improve uptake and use of evidence-based strategies, our findings will support follow-up with a R01 application to test the intervention efficacy in a fully powered randomized controlled trial with a larger diverse sample of at-risk male couples in new relationships.

06/01/16 – 03/31/21 *Understanding the effects of substance use on male couples' risk for HIV*

1R01DA040541-01A1 (PI: Mitchell J) – NIDA

\$2,366,992 (with NCE)

The majority of HIV prevention research in the US has targeted MSM at individual- and community-levels, yet between one- and two-thirds of MSM acquire HIV from their main relationship partners. Studies conducted over the past few decades have identified that substance use is strongly linked to condomless anal sex and HIV seroconversion among MSM. Although recent studies with male couples suggest partners' use of substance with sex increases the couples' risk for acquisition and/or transmission of HIV, more research is needed to examine partner-level influences and dyadic interactions for development of novel HIV and substance use prevention interventions. To fill this critical need, the proposed 4-year mixed-methods longitudinal study will collect dyadic data to examine how relationship partners' influence one another's substance use with sex, and how their usage impacts the couples' risk for HIV. These findings will then be used to develop and pilot-test a tailored intervention for feasibility and acceptability among substance-using male couples in a subsequent R01.

#### *Co-Investigator*

- 02/01/19 – 01/30/20 Provider-initiated couple-centered HIV prevention approaches: Perspectives and practice  
Funded through R25MH087217-09 for PI: LeBlanc N via Research Education Institute for Diverse Scholars (REIDS) at the Center for Interdisciplinary Research on AIDS (CIRA) at Yale University Pilot Project program  
\$1,720 (2% FTE as Co-I)
- 06/01/18 – 05/31/20 *Investigating the Acceptability of an eHealth HIV Prevention Toolkit for Black Heterosexual Couples in Western New York State.*  
CFAR – University of Rochester (PI: LeBlanc N)  
\$30,000 (0 FTE as Co-I)

### **CURRENT RESEARCH PROJECTS – INSTITUTION FUNDED**

#### *Principal Investigator*

- 09/01/17 – 07/31/20 *Adaptation of an online HIV prevention toolkit for male couples in Lima, Peru*  
Office of Public Health Sciences, UH-Mānoa, developmental grant (PI: Mitchell J)  
\$8,000  
Many men who have sex with men in Peru acquire HIV from their primary same-sex relationship partners (i.e., male couples). Male couples' risk for HIV acquisition and/or transmission increases when: 1) condomless anal sex (CAS) occurs before confirmation of negative HIV status; 2) CAS is practiced within and outside the relationship; 3) pre-exposure prophylaxis (PrEP) is not being used; and/ or 4) viral load suppression has been maintained through antiretroviral treatment (ART). Unlike in the U.S, male couples in Peru typically do not form a sexual agreement – an explicit, mutual understanding made between two relationship partners about which sexual and other behaviors may occur with one another, and if applicable, with others. Because few evidence-based HIV prevention interventions exist for male couples in Peru, we are pilot testing this intervention to assess acceptability and feasibility that male couples in Lima would use this online, interactive HIV prevention toolkit to form a sexual agreement tailored to meet their unique needs while reducing their risk for HIV. Results from our current toolkit show promise for reducing U.S. HIV-negative male couples' risk for HIV via establishment of a sexual agreement. Because primary and secondary HIV prevention

methods (PrEP, ART) are vital for reducing HIV acquisition and transmission among HIV-discordant and HIV-positive male couples, the present study aims to adapt the content and modules of the toolkit to meet the specific needs of all male couples in Lima. Through the use of informative interviews, the proposed study will identify how best to tailor the prevention toolkit to meet the specific needs of male couples living in Lima. Findings from the newly adapted toolkit will well position this investigator for obtaining an R01 (in prep for 1/2020 submission) to further adapt and test the toolkit's efficacy via a RCT in Peru. To date, 1 manuscript has been published, two are currently under review, and another one is being prepared from this work.

- 01/01/19 – 12/31/20 *Primary health and relationship concerns among LGBTQ couples in Hawai'i*  
Office of Public Health Sciences, UH-Mānoa, developmental grant (PI: Mitchell J)  
\$3,000  
Limited research has been conducted in Hawai'i with SGM adults and to our knowledge, studies have yet to include SGM couples, despite the powerful influences that relationship partners have on one another's behaviors and decisions associated with their health. With the future overarching goal of developing an evidence-based, health promotion intervention with SGM couples in Hawai'i, we are conducting an explanatory sequential mixed method, longitudinal project that is theoretically guided by the Couples Interdependence Theory and constructs of self-efficacy, and social support. Our project will identify SGM couples' primary health and relationship concerns (e.g., top 3), and the reasons why these are a concern to them. We are also exploring the ways in which participants perceive their partner to be un/supportive about their health and relationship across different topics of interest to them, as well as other perceived barriers and facilitators. In Phase 1, we collected quantitative dyadic data from a convenience sample of 75 SGM couples via a brief, online survey. We also collected qualitative data from 25 of the 75 dyads via purposive selection through a one-time, individual interview. For Phase 2, happening 12 months later, we are now collecting quantitative follow-up data from the 75 dyads to assess feasibility to retain a cohort, examine relationship stability, and changes in relationship and health concerns over time. Phase 3 is in the works to expand this research nationally. Findings from this project will further our understanding about SGM couples' health and will lead to intervention development and testing for couples-based health promotion focused on multiple health behavior change. Three manuscripts are currently in preparation from this work.

## **FUTURE RESEARCH PROJECTS (UNDER REVISE & REVIEW)**

- 09/01/20 – 08/30/23 *Acceptability, feasibility, and preliminary impact of a web-based, HIV prevention toolkit with cisgender male couples in Lima, Peru*  
R34MH124473-01 (PI: Mitchell, J) – NIMH  
\$555,999  
Reviewed in March 2020; Impact score 34 at 14% (Resubmitting in May 2020)  
Sexual minority men in Lima, Peru are disproportionately impacted by HIV, and a substantial proportion of these men acquire HIV while in a relationship (i.e., cisgender male couples). Studies conducted by members of the investigative team found that cisgender male couples' use of evidence-based HIV/STI prevention strategies (e.g., ART, PrEP, routine HIV/STI testing, condom use) are sub-optimal to reliably prevent acquisition and/or transmission of HIV and other STIs given their current engagement in sexual risk behaviors. To date, no couples-based HIV/STI prevention interventions are available in Lima or elsewhere in Peru. The overarching goal of the proposed 3-year

project is to help fill this critical gap in Peru's HIV/STI prevention services. To start, we conducted a mixed method pilot project to assess the acceptability of the PI's theoretically-grounded eHealth, couples-based HIV/STI prevention toolkit intervention with 42 cisgender male couples in Lima (14 concordant HIV-negative, 16 discordant, 12 concordant HIV-positive). 90% of couples reported high acceptability of the intervention, and liked the agreement builder activity the most. Couples told us they wanted more information about HIV treatment as prevention (PrEP, ART, TasP/U=U) and how to strengthen their own and familial relationships. They also wanted accessibility of the intervention to be improved for use on different web-connected devices (i.e., digital health). Additional findings revealed only 33%-50% of couples included evidence-based HIV/STI prevention strategies in their agreement. Our solution to help improve couples' uptake and continued use of evidence-based prevention strategies is to integrate an electronic algorithm into the agreement builder activity to provide them with tailored recommendations that align with their engagement in sexual behaviors and relationship profile. Methods: Via the proposed R34, our next steps are to apply the remaining stages of the ADAPT-ITT model followed by conducting a 6-month pilot RCT with a waitlist control to assess the feasibility, acceptability, and preliminary impact of the adapted, web- and couples-based HIV/STI prevention toolkit intervention with 60 cisgender male couples, stratified by their dyad HIV serostatus, on outcomes of: a) formation and adherence to a tailored risk-reduction plan and agreement; b) relationship functioning (e.g., communication); c) use of evidence-based HIV prevention strategies; and d) HIV/STI incidence over time. Our proposed approach is **rigorous with scientific premise** as mixed methods and a pilot RCT with a waitlist control will be used to achieve our Specific Aims. Our project is also timely and practical with key stakeholder buy-in, suggesting the **high Public Health significance** of our proposal. Our findings will reveal the feasibility, acceptability and preliminary impact of the adapted toolkit intervention to reduce couples' HIV/STI risk via sustained use of evidence-based HIV prevention strategies over time through their formation and adherence to a tailored agreement and risk-reduction plan. Our next step will be to apply these findings (e.g., R01) to test the intervention for efficacy. Our project is of interest to NOT-MD-19-001.

09/01/20 – 08/30/23 *Personalized prevention for couples*

R01MH124758 (MPI: Mitchell J, Stephenson R) – NIMH  
\$3,042,300

Reviewed in April 2020; Impact score 35 at 20% (Resubmitting in June 2020)

Up to two-thirds of new HIV infections among MSM are attributable to sex with main partners (male couples).<sup>1,2</sup> 48% of HIV-positive MSM in 5 US cities who were HIV tested in CDC's NHBS project were unaware of their status,<sup>3</sup> suggesting the potential for high levels of unknown sero-discordance among male couples. Research has also illustrated the role relationship dynamics (e.g., HIV-specific social support, constructive communication, sexual agreements) have in shaping male couples' risk for HIV<sup>4-41</sup>; this has also been shown longitudinally, strongly suggesting that promoting positive relationship dynamics is a significant intervention point for reducing HIV transmission among male couples.<sup>42-44</sup> There is also evidence couples can work together towards shared HIV prevention and care-related goals, which is vital in the era of U=U, which is dependent on ART adherence and resultant viral suppression, leading to increased health and reduced likelihood of onward HIV transmission.<sup>45-53</sup> Innovative and tailored solutions are needed to meet the HIV prevention and care needs of male couples. Our solution is leverage our strong findings from the preliminary work we conducted with male couples in the US (R34 pilot RCT & mixed method acceptability project)<sup>54-57</sup> to propose a highly novel, 5-year project to revise and update an existing, eHealth couples-

based HIV/STI prevention toolkit intervention that showed promise for reducing couples' HIV risk. The intervention is theoretically grounded in Couples Interdependence Theory for health behavior change.<sup>58,59</sup> We will first apply the remaining stages of the ADAPT-ITT model<sup>60</sup> with elements of human-centered design<sup>61-64</sup> to incorporate sero-concordant negative, sero-concordant positive, and sero-discordant male couples' prevention and relationship needs while also including the latest science in HIV/STI prevention. We will then conduct a 16-month randomized controlled trial (RCT) with 300 male couples using a waitlist control condition of 8 months. Our Specific Aims are to: 1) examine efficacy of the toolkit intervention on couples' a) formation and adherence to a risk-reduction plan and agreement, b) relationship functioning, c) use/adherence to evidence-based HIV/STI prevention strategies; 2) evaluate their use of the toolkit intervention over time by using three different data sources; 3) explore moderating and mediating effects on couples' outcomes a-c. Our proposal has high Public Health significance given the HIV disparities and importance of attending to couples unique needs, including the provision of a tailored and accessible couples-based intervention. We believe results from the fully powered RCT will show efficacy toward improving sustained engagement in couples' HIV prevention planning and uptake of strategies through their use of the revised and updated eHealth, couples-based toolkit intervention that will contain relationship-focused skills-building activities. The scientific premise and rigor will further allow us to understand the processes through which couples work together to manage HIV/STIs in their relationships. Our next steps will be to apply these findings to conduct a pragmatic controlled trial to assess effectiveness. This project is of interest to NOT-MD-19-001.

## **FUTURE RESEARCH PROJECTS (TO BE SUBMITTED TO NIH IN 2020)**

04/01/21 – 03/31/23 *Beyond Two: Improving Methods to Include Multimember Sexual Relationships in Online Health Studies*

PI: Mitchell, J

R21 – NICHD

Interest in consensual nonmonogamy (CNM) has proliferated, leading to important implications for sexual health and STI prevention given the influence that relationship partners have on one another's health-related decisions and behaviors. The number of partners in a CNM relationship may vary: triads have three partners, and quads+ have four or more. Prior research has found that partners in CNM relationships report higher rates of condom use and testing for STIs than those in unfaithful monogamous relationships. However, these studies have only collected data from one partner of a triad/quad+, thereby limiting our ability to detect whether differences/similarities of sexual health and STI prevention related behaviors exist between partners, much less how their relationship dynamics relate to these behaviors. Moreover, web-based methods that enable researchers to collect data, and then subsequently identify, verify, and validate these data uniquely represent all partners of a triad and quad+ sexual relationship are lacking. Development of such methods would allow characterization and assessment – through appropriate analyses – of the dynamics and sexual behaviors that exist among all partners of a triad/quad+, and how these factors may contribute to STI prevention. As such, we propose to conduct a novel, two-phase project using an exploratory mixed-method study design theoretically guided by the Couples Interdependence Theory and social support. Our Specific Aims are to: 1) Characterize the relationship dynamics and sexual health behaviors; 2) Assess the influence that triad and quad+ partners have on one another's sexual health-related decisions and behaviors relative to STI prevention by applying the social relationships model with a round-robin design; and 3) Develop (Phase



1) and evaluate (Phase 2) an online verification and validation enrollment procedure to collect, verify, and validate data from all partners of triads and quads+ in web-based studies. Phase 1 will consist of enrolling 20 triads and 20 quads+ for a group webcam interview about their dynamics and sexual health behaviors, followed by each partner completing an online survey. Initial analyses of data from Phase 1 will be used to develop the online verification and validation enrollment procedure. Phase 2 will consist of enrolling 30 triads and 30 quads+ by having each partner complete the online verification and validation enrollment procedure followed by an online survey. Once all partners have enrolled and completed the survey, we will conduct a group webcam interview with each triad/quad+. Analyses of data collected from Phase 2 will be used to evaluate the online verification and validation enrollment procedure. We will then use all data collected from Phases 1 and 2 (50 triads, 50 quads+) to accomplish Aim 1, and all quantitative data (50 triads, 50 quads+) for Aim 2. Findings from this timely project will illuminate what strategies triads/quads+ use for STI prevention that could be leveraged for other types of sexual relationships, along with the development of an accessible methodology for researchers to include all partners of sexual relationships consisting of more than two adults in future web-based studies.

04/01/21 – 03/31/26 *Multiple health behavior change among sexual and gender minority couples*

PI Mitchell, J

R01 – NINR, NIC

A number of health inequities exist among sexual and gender minority (SGM) individuals in the U.S., such that they are disproportionately more likely to report having worse mental, physical, and sexual health outcomes that can lead to a variety of chronic diseases, diagnoses, and/or conditions. Multiple health behavior change (MHBC) may provide a useful framework to help reduce health inequities among SGM adults. Further, relationship partners play a powerful and important role in positively and negatively influencing one's health. Yet, the ways in which relationship partners negatively and positively impact one another's health remains critically understudied, and in light of MHBC as many health behaviors are closely linked to one another (e.g., exercise and nutrition, substance use and HIV prevention). Our goal is to better understand SGM couples' un/successes in MHBC over time to identify future intervention targets to reduce their health inequities. We will accomplish this goal by conducting a novel 5-year, longitudinal mixed method study that will be theoretically guided. We will enroll an eligible, diverse sample of 300 SGM couples who will be followed for 18 months and asked to provide a qualitative, quantitative, biomedical and para data over time. Significance: Findings from this highly innovative project will further our understanding about the context of behavior change across a variety of topics, as well as what types of support they may need for their health and MHBC.

## COMPLETED RESEARCH PROJECTS

### *Principal Investigator*

10/01/16 – 12/31/18 *Hierarchal influences on PrEP willingness and readiness among male couples*

1R21MH111445-01 (MPI: Mitchell J, Stephenson R) – NIMH

\$437,553

Although a growing interest in male couples' relationships has emerged in HIV prevention research, few studies have been conducted about their attitudes and support of pre-exposure prophylaxis (PrEP), as well as documenting their barriers to obtaining

PrEP. To respond to this critical gap in understanding PrEP attitudes and support, we propose to conduct a novel two-year mixed method study to collect dyadic data from 150 self-reported HIV-negative and 150 self-reported HIV-discordant male couples from areas throughout the US that differ with respect to HIV prevalence, racial and ethnic diversity, and PrEP availability. Our innovative study will be guided by Brofenbrenner's Ecological Model paired with advanced analytic methods (e.g., Actor-Partner effects, hierarchical modeling) and qualitative interviews to examine how individual, dyadic, social network and community factors shape support and willingness to adopt PrEP among a sample of concordantly HIV negative and discordant male couples.

07/01/10 – 06/30/18 *Examining the Role of Sexual Agreements for HIV/STI Risk among Gay Male Couples in the U.S.*

As part of my post-doctoral training, I conducted a web-based project that used technology and social media to recruit and collect cross-sectional dyadic data from 361 male couples throughout the U.S. The survey assessed couples' relationship dynamics, sexual agreements, communication patterns, HIV and STI testing histories, attitudes toward new biomedical HIV prevention approaches, substance use with/out sex, and a variety of sexual behaviors. Original support for this project was provided by the Center for AIDS Intervention Research, Medical College of Wisconsin, grant P30-MH52776 (PI: Kelly, J.). In total, 20 manuscripts have been published from this work. Further, findings from this project have helped to justify the need for future development of novel HIV prevention interventions (e.g., R34MH102098, R34MH105202, R01DA040541, 1R21MH111445).

01/01/15 – 04/30/18 *Examining relationship characteristics, behaviors and attitudes of at-risk adult heterosexual couples in the U.S.*

The primary objective of this web-based, nation-wide study is to evaluate the attitudes and behaviors of relationship characteristics among adult heterosexual couples with respect to HIV risk. 850 heterosexually-identified partnered adults were recruited via targeted Facebook ads to complete a brief, anonymous, one-time, unpaid online survey. The data were collected confidentially through SurveyGizmo on the University's secure web server. No email addresses or other personal identifying information were collected. Recruitment and survey data are currently being analyzed to disseminate findings through peer-reviewed journals and conference presentations. This project will serve as pilot data for a proposal submission to NIH to pursue development of a couples-focused sexual health program for at-risk, adult heterosexual couples. Two peer-reviewed manuscripts have been published from this work.

09/01/14 – 04/30/18 *A Mobile App to Increase Routine HIV Testing among High-risk Diverse MSM*  
R34MH105202 (MPI: Mitchell J, Horvath K) – NIMH  
\$700,018

The aims of this project are to (1) conduct 6 focus groups with diverse, high-risk men who have sex with men (MSM) to identify contents and functions of a smartphone application ("app") that will maximize interest in downloading, initiating use, and sustaining engagement over time of a tailored HIV/STI testing app; (2) develop the smartphone app to promote regular HIV/STI testing with input from key stakeholders; and (3) assess the feasibility and acceptability of the HIV/STI testing app intervention in a small-scale pilot RCT. The project is innovative as it will be one of the first studies to develop a smartphone app to promote regular HIV/STI testing among high-risk, diverse MSM. Regarding public health significance, the smartphone app will be tailored to the group most at-risk for HIV in the US, and the app may be easily scaled up to address

inadequate HIV testing rates among this underserved population. Two peer-reviewed manuscripts have been published from this work thus far; several other manuscripts are in preparation.

04/01/16 – 01/05/18 *LGBT Couples Health Promotion Project*

In collaboration with University of Michigan (Co-I, Dr. Kristi Gamarel), the primary objective of this web-based, nation-wide study is to conduct a needs assessment to evaluate attitudes towards health behavior prevention programs for lesbian, gay, bisexual, transgender, and queer (LGBQ) adults in primary partnerships. Over 1000 partnered, eligible adults were recruited via targeted Facebook ads. Consented and enrolled participants completed a brief, anonymous, one-time, unpaid online survey; the survey was offered in English and Spanish. The data were collected anonymously through SurveyGizmo on the University's secure web server. Recruitment and survey data were analyzed to disseminate findings through peer-reviewed journals and conference presentations. This project has served to generate pilot data for two proposal submissions to NIH to pursue development of couples-focused health and relationship programs for LGBQ adult couples living in the U.S. Three manuscript have been published.

09/01/15 – 06/30/17 *Adaptation of an online HIV prevention toolkit for HIV-discordant and concordant HIV-positive male couples*

P30AI073961 – NIAID, U-Miami CFAR pilot project grant  
\$36,000

Between one- and two-thirds of men who have sex with men in the United States acquire HIV from their primary same-sex relationship partners (i.e., male couples). Male couples' risk for HIV acquisition and/or transmission increases when: 1) condomless anal sex (CAS) occurs before confirmation of negative HIV status; 2) CAS is practiced within and outside the relationship; 3) pre-exposure prophylaxis (PrEP) is not being used; and/ or 4) viral load suppression has not been maintained through antiretroviral treatment (ART). Many male couples in the US form a sexual agreement – an explicit, mutual understanding made between two relationship partners about which sexual and other behaviors may occur with one another, and if applicable, with others. However, few couples incorporate HIV preventive methods of testing, PrEP and ART in their agreements. Because few evidence-based HIV prevention interventions exist for male couples in the US, we recently developed an online, interactive HIV prevention toolkit to encourage HIV-negative male couples to form a sexual agreement tailored to meet their unique needs while reducing their risk for HIV. Results from our current toolkit show promise for reducing HIV-negative male couples' risk for HIV via establishment of a sexual agreement. Because primary and secondary HIV prevention methods (PrEP, ART) are vital for reducing HIV acquisition and transmission among HIV-discordant and HIV-positive male couples, the present study aims to adapt the content and modules of the toolkit to meet the specific needs of this population, and how the toolkit may be used in the clinical setting. By conducting focus groups, the proposed study seeks to identify how best to tailor the prevention toolkit to meet the specific needs of HIV-discordant and HIV-positive male couples living in Miami. To date, one manuscript has been published and another two are under peer review. Findings are being disseminated Findings from the newly adapted toolkit will well position this new investigator for obtaining an R01 to test the toolkit's efficacy (i.e., in prep for 1/2020 submission).

09/01/13 – 04/30/17 *Development of a HIV Prevention Toolkit for at-risk HIV-negative Male Couples*  
R34MH102098 (PI: Mitchell J) – NIMH  
\$713,288

In the U.S., most men who have sex with men (MSM) acquire HIV through condomless anal sex (CAS) while in a same-sex relationship. Yet, the majority of HIV prevention research and efforts have targeted MSM at the individual- and community-levels, which excludes how relationship dynamics, including sexual agreements, impact male couples' risk for acquiring HIV and STIs. To help fill this critical gap in Public Health services, the proposed 3-year study developed and pilot tested, via an online RCT, a theoretically derived, web-based HIV prevention toolkit (MCAP) for at-risk HIV-negative male couples in the U.S. Findings from MCAP showed promise to reduce HIV risk among couples assigned to the intervention when compared to the control. Findings are being disseminated through peer-reviewed journals and conference presentations. The next iteration of MCAP is currently being proposed through a R01 grant proposal (in prep for 1/2020 submission) to test for efficacy in a fully powered RCT.

- 09/01/15 – 03/31/17 *A Mobile App to Increase Routine HIV Testing among Spanish-Speaking MSM*  
3R34MH105202 (MPI: Mitchell J, Horvath K) – NIMH Administrative Supplement  
\$138,824  
The aims of this 1-year supplement include: 1) Conduct 3 focus groups (n=5 per focus group) with high-risk Spanish-speaking HIV-negative/unknown men who have sex with men (MSM) to assess current mobile app use and preferences for a mobile app to promote regular HIV testing (months 1-3); 2) Adapt current intervention content to high-risk Spanish-speaking HIV-negative/unknown MSM (months 4-9); and 3) Conduct usability testing of the developed intervention with 5-6 high-risk Spanish-speaking HIV-negative/unknown MSM (months 10-11) to prepare the app for the pilot RCT (month 12) in the final year of the parent grant. This administrative supplement directly addresses the NIMH's priority to develop innovative interventions to increase the frequency of HIV testing in high-risk populations. If successful, the additional research activities proposed in this administrative supplement will optimize the reach of the novel mobile app intervention already being developed in the parent grant to a larger population of MSM in the US.
- 07/01/10 – 06/30/15 Oregon State University Dissertation Study, "Examining the Role of Relationship Characteristics and Dynamics on Sexual Risk Behavior among Gay Male Couples", was supported by the Center for AIDS Intervention Research, Medical College of Wisconsin, grants P30-MH52776 (PI: Kelly, J.) and T32-MH19985 (PI: Pinkerton, S. D.), the University of Michigan School of Nursing, and the University of Miami Miller School of Medicine. This project recruited and collected dyadic data from 144 gay male couples in Portland, Oregon and Seattle, Washington. Data were analyzed using multilevel regression modeling, mixed methods, and estimates of actor-partner effects. In total, 7 peer-reviewed publications resulted from this work.

#### *Co-Investigator*

- 06/01/14 – 05/31/18 *Providing Online Counseling for Home Based HIV Testing with MSM Couples*  
R01HD078131 (PI: Stephenson, R.) – NICHD  
\$573,449  
The goal of this project is to screen an online sample of 500 MSM couples across the US, recruiting 400 couples to be randomized: 200 couples to receive two home HIV-testing kits and 200 couples to receive two home HIV-testing kits plus a skype-based video counseling session with a remotely located counselor.

2010 – 2011      Provided data analysis support for CDC grant UR6PS000434 (PI: Seal, D.W.)  
“Culturally-Tailored HIV Risk Reduction for African American MSM.”

## PEER-REVIEWED PUBLICATIONS

1. **Mitchell, J. W.**, Chavanduka, T. M. D., Sullivan, S. P., & Stephenson, R. (2020). Recommendations to improve screening procedures for online studies with couples: Findings from a descriptive evaluation of an online HIV prevention study with a large sample of same-sex male couples. *JMIR Public Health and Surveillance*, forthcoming: <https://dx.doi.org/10.2196/15079>.
2. **Mitchell, J. W.**, Lee, J., Wu, Y., Sullivan, P. S., & Stephenson, R. (2020). *Feasibility and acceptability of an electronic health HIV prevention toolkit intervention with concordant HIV-negative, same-sex male couples on sexual agreement outcomes: Pilot, randomized controlled trial*. *JMIR Formative Research*, 4(2), e16807.
3. Horvath, K. J., Lammert, S., Dahn, T., & **Mitchell, J. W.** (2019). *The feasibility, acceptability and preliminary impact of mobile application to increase repeat HIV testing among sexual minority men*. *AIDS and Behavior*; in press. <https://doi.org/10.1007/s10461-019-02755-7>.
4. Stephenson, R., Chavanduka, T. M. D., Sullivan, S. P., & **Mitchell J. W.** (2019). *Correlates of successful enrollment of same-sex male couples into an online HIV prevention research study*. *JMIR Public Health and Surveillance*, 5(4), e15078. doi: 10.2196/15078
5. **Mitchell, J. W.**, Brown, S., Pennington, J., Wu, Y. Y., & Konda, K. (2019). Brief Report: *Same-sex male couples' characteristics and attitudes toward different HIV prevention services, by dyad HIV serostatus, in Lima, Peru*. *International Journal of Sexual Health*, 31(4), 375-383.
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7. **Mitchell, J. W.**, Lammert, S., Dahn, T., & Horvath, K. J. (2019). *Optimizing enrollment methods: Lessons learned from a mHealth, pilot HIV prevention randomized controlled trial with sexual minority men*. *International Journal of STD & AIDS*. <https://doi.org/10.1177/0956462419831854> IF: 1.494
8. Sophus, A. I., & **Mitchell, J. W.** (2019). *A review of approaches used to increase awareness of pre-exposure prophylaxis (PrEP) in the United States*. *AIDS and Behavior*, 23(7): 1749-1770.
9. **Mitchell, J. W.**, Wu, Y. Y., & Gamarel, K. E. (2019). *Timing and sequence of events: HIV serostatus disclosure, condomless anal sex, and sexual agreement formation among same-sex male couples*. *Journal of Sex Research*, 56(6): 728-739.
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*partnered adults*. Journal of the Association of Nurses in AIDS Care, 29(5): 728-736. doi: 10.1016/j.jana.2018.04.007.

11. **Mitchell, J. W., Lee, J-Y., Godoy, F., Asmar, L., & Perez, G.** (2018). *HIV-discordant and concordant HIV-positive male couples' recommendations for how an eHealth HIV prevention toolkit for concordant HIV-negative male couples could be improved to meet their specific needs*. AIDS Care, 30(Suppl 2): 54-60.
12. Leblanc, N. M., & **Mitchell, J. W.** (2018). *Providers' perceptions of couples HIV testing and counseling: Perspectives from a U.S. HIV epicenter*. Couple and Family Psychology: Research and Practice, 7(1): 22-33.
13. **Mitchell, J. W.,** Torres, M. B., Asmar, L., Danh, T., & Horvath, K. (2018). *Developing sustainable and impactful mobile phone HIV testing interventions for Spanish-speaking men who have sex with men in the United States (US): Lessons learned from informative interviews*. JMIR Public Health and Surveillance, 4(2):e45.
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27. **Mitchell, J. W., Torres, M. B., Joe, J., Danh, T., Gass, B., & Horvath, K. J.** (2016). *Formative work to develop a tailored HIV testing smartphone application for diverse at-risk HIV-negative men who have sex with men: A focus group study*. *Journal of Medical Internet Research uHealth and mHealth*, 4(4):e128.
28. **Mitchell, J. W., Lee, J-Y., & Stephenson, R.** (2016). *How best to obtain valid, verifiable data online from male couples? Lessons learned from an eHealth HIV prevention intervention for HIV-negative male couples*. *Journal of Medical Internet Research Public Health and Surveillance*; 2(2):e155.
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Note: Underlined names represent mentored students and research assistants

### *Under Review*

**Mitchell, J. W.**, Brown, S., Pennington, J., Calvo, G., Diaz, D., Assaf, R., & Konda, K. (under review). Acceptability of an eHealth HIV prevention toolkit for male couples in Lima, Peru with recommendations to better meet their prevention and relationship needs. International Journal of Sexual Health. Submitted 04/09/2020.

**Mitchell, J. W.**, & Konda, K. (under review). Analysis of male couples' sexual agreements after using an eHealth, couples-based HIV prevention intervention in Lima, Peru. Journal of Sex Research. Submitted 04/06/2020.

Sophus, A. I., & **Mitchell, J. W.** (under revise & review). HIV/AIDS prevention interventions for Black women in the U.S.: A systematic review. AIDS and Behavior. Submitted 2/29/2020.

Aung, B., **Mitchell, J. W.**, & Braun, K. (under review). Effectiveness of mHealth interventions for improving contraceptive use in low- and middle-income countries: A systematic review. Global Health: Science and Practice. Submitted 2/14/2020.

**Mitchell, J. W.**, Gamarel, K. E., Kam, K. K., & Pennington, J. T. (under review). Perceived facilitators of decision-making and usage of biomedical HIV prevention strategies: Findings from an online, qualitative study with same-gender male couples in the United States. AIDS Care. Submitted 10/20/2019.

**Mitchell, J. W.** & Sophus, A. I. (under revise & review). Decision making dominance and associated factors among same-sex male couples. Journal of Social and Personal Relationships.

Note: Underlined names represent mentored students and research assistants

### *In Prep*

Curtis, M. G., Kogan, S. M., Stephenson, R., & **Mitchell, J. W.** (in prep) Effects of internalized homophobia, depression, and relationship satisfaction on dyadic substance misuse in same-sex male couples.

**Mitchell, J. W., Lee, J., Wu, Y., Sullivan, P. S., & Stephenson, R.** (in prep). HIV/STI testing and sexual risk behavior outcomes from a pilot, randomized controlled trial of an eHealth HIV prevention toolkit intervention with concordant HIV-negative, same-sex male couples.

**Mitchell, J. W., Lee, J., Wu, Y., Sullivan, P. S., & Stephenson, R.** (in prep). Changes in relationship dynamics over time: Analysis of dyadic longitudinal data from a pilot RCT of an eHealth HIV prevention toolkit intervention with concordant HIV-negative, same-sex male couples.

**Mitchell, J. W., Lee, J-Y., Asmar, L., Perez, G., & Godoy, F.** (in prep). Emphasis on togetherness: Perceptions from same-sex male couples using a couples-based, eHealth HIV prevention intervention.

**Mitchell, J. W., Lee, J-Y., Godoy, F., Asmar, L., & Perez, G.** (in prep). Broadening the concept of sexual agreements to better meet the needs of same-sex male couples: The perceived importance of finances and family.

**Mitchell, J. W.** (in prep). Circumstances in honoring and breaking a sexual agreement among gay male couples.

**Sophus, A. I., Mitchell, J. W., Lee, J-Y., & Rodriguez-Diaz, C.** (in prep). Factors associated with the assessment of the “I” to “We” orientation of sexual health outcomes among gay male couples.

**Mitchell, J. W., Sophus, A. I., & Rodriguez-Diaz, C.** (in prep). Factors associated with the assessment of the “I” to “We” orientation of general health and lifestyle outcomes among gay male couples.

**Rodriguez-Diaz, C., Wu, Y. Y., Sophus, A. I., & Mitchell, J. W.** (in prep). Enacted and perceived stigma regarding access to healthcare services among same-sex male couples.

**Mitchell, J. W., Wu, Y. Y., & Gamarel, K.** (in prep). Same-sex male couples primary health concerns: Considerations for health promotion and prevention.

**Mitchell, J. W., Wu, Y. Y., & Gamarel, K.** (in prep). Same-sex male couples primary relationship concerns: Considerations for interventions.

Note: Underlined names represent mentored students and research assistants

## BOOKS, CHAPTERS AND TECHNICAL REPORTS

**Mitchell, J. W., Moskowitz, D., & Seal, D. W.** (2012). Understanding the agreements and behaviors of men who have sex with men who are dating or married to women: Implications for a universal HIV/STI testing protocol. In H. Klein & J. Merrick (Eds.), *Human immunodeficiency virus (HIV) research: Social science aspects*. New York, NY: Nova Science.

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**Mitchell, J. W.** (2012). HIV Prevention. In M. D. Gellman & J. R. Turner (Eds.), *Encyclopedia of Behavioral Medicine*. New York, NY: Springer Science+Business Media. DOI 10.1007/978-1-4419-1005-9.

Hidalgo, B., & **Mitchell, J. W.** (2012). Suicide prevention. In M. D. Gellman and J. R. Turner (Eds.), *Encyclopedia of Behavioral Medicine*. New York, NY: Springer Science+Business Media.

García, L. I., & **Mitchell, J. W.** (2012). Gender Differences. In M. D. Gellman and J. R. Turner (Eds.), *Encyclopedia of Behavioral Medicine*. New York, NY: Springer Science+Business Media.

## PEER REVIEWED PRESENTATIONS

1. **Mitchell, J. W.**, Lee, J-Y., Wu, Y., Sullivan, P. S., & Stephenson, R. (2020). Sexual risk behavior outcome results from a pilot randomized controlled trial of an eHealth HIV prevention toolkit intervention with seroconcordant negative male couples. Poster presentation to be offered at the 16<sup>th</sup> International Congress of Behavioral Medicine at Glasgow, Scotland (August 19-22).
2. **Mitchell, J. W.**, Lee, J-Y., Wu, Y., Sullivan, P. S., & Stephenson, R. (2020). HIV/STI testing outcome results from a pilot randomized controlled trial of an eHealth HIV prevention toolkit intervention with seroconcordant negative male couples. Poster presentation to be offered at the 16<sup>th</sup> International Congress of Behavioral Medicine at Glasgow, Scotland (August 19-22).
3. **Mitchell, J. W.**, Lee, J-Y., Wu, Y., Sullivan, P. S., & Stephenson, R. (2020). Changes in relationship dynamics over time: Findings from a Pilot RCT of an eHealth HIV/STI prevention intervention with HIV-negative male couples. Presentation to be offered at the International Association of Relationship Research Conference in London, England (July 30 – August 3<sup>rd</sup>).
4. **Mitchell, J. W.**, Lee, J-Y., Wu, Y., Sullivan, P. S., & Stephenson, R. (2020). Sexual risk behavior outcome results from a pilot randomized controlled trial of an eHealth HIV prevention toolkit intervention with seroconcordant negative male couples. Presentation to be offered at the 10<sup>th</sup> Annual Asia Pacific Conference on Reproductive and Sexual Health and Rights at Siem Reap, Cambodia (May 26-29).
5. **Mitchell, J. W.**, Lee, J-Y., Wu, Y., Sullivan, P. S., & Stephenson, R. (2020). HIV/STI testing outcome results from a pilot randomized controlled trial of an eHealth HIV prevention toolkit intervention with seroconcordant negative male couples. Presentation to be offered at the 10<sup>th</sup> Annual Asia Pacific Conference on Reproductive and Sexual Health and Rights at Siem Reap, Cambodia (May 26-29).
6. Sophus, A., & **Mitchell, J.W.** (2020). HIV/AIDS Prevention Interventions for Black Women in the U.S.: A Systematic Review. Poster to be presented at the 10th International Workshop on HIV & Women, Boston, MA (March 6-7)
7. Leblanc, N., Juarez A., **Mitchell, J. W.**, McMahon, J. (2019). Acceptability of an online HIV prevention toolkit among Black, heterosexual couples in Western New York. Poster presentation offered at the New York State End the Epidemic Summit, Albany, New York (December 3-4).
8. **Mitchell, J. W.**, Pennington, J., Brown, S., Assaf, R., & Konda, K. (2019). Acceptability of an eHealth, HIV prevention toolkit among same-sex male couples in Lima, Peru. Oral presentation

offered at the Annual meeting of the Society for the Scientific Study of Sexuality (SSSS), Denver, CO (November 7-10).

9. **Mitchell, J. W.**, Pennington, J., Brown, S., Assaf, R., & Konda, K. (2019). Sexual health communication among same-sex male couples in Lima, Peru. Brief oral presentation offered at the Annual meeting of the Society for the Scientific Study of Sexuality (SSSS), Denver, CO (November 7-10).
10. **Mitchell, J. W.**, Pennington, J., Brown, S., Assaf, R., & Konda, K. (2019). Same-sex male couple characteristics by couple serostatus and their views of PrEP and other HIV prevention strategies. Brief oral presentation offered at the Annual meeting of the Society for the Scientific Study of Sexuality (SSSS), Denver, CO (November 7-10).
11. **Mitchell, J. W.**, Takiguchi, J., Wells, J., & Wu, Y. (2019). What are sexual and gender minority couples' top health and relationship concerns? Poster presentation offered at the Summit 2019: Queering Healthcare Access & Accessibility, Vancouver, B.C., Canada (October 31 – November 1).
12. **Mitchell, J. W.**, Takiguchi, J., Wells, J., & Wu, Y. (2019). Partner-level support about their top health concerns: Insights from sexual and gender minority couples. Poster presentation offered at the Summit 2019: Queering Healthcare Access & Accessibility, Vancouver, B.C., Canada (October 31 – November 1).
13. Aung, W., **Mitchell, J. W.**, & Braun, K. L. (2019). Effectiveness of using mobile technology to increase contraceptive use in low- and middle-income countries: A systematic review. Poster presentation offered at the American Public Health Association conference, Philadelphia, PA (November 2-6).
14. **Mitchell, J. W.**, Chavanduka, T., Sullivan, S., & Stephenson, R. (2019). A descriptive evaluation of procedures used to detect fraudulent cases in an online, HIV prevention study with same-sex male couples. Poster presentation offered at the 14<sup>th</sup> International AIDS Impact Conference, London, United Kingdom. (July 29-31).
15. **Mitchell, J. W.**, Chavanduka, T., Sullivan, S., & Stephenson, R. (2019). Unable to obtain PrEP: Findings from a mixed methods project with same-sex male couples in the U.S. Oral presentation offered at the 14<sup>th</sup> International AIDS Impact Conference, London, United Kingdom. (July 29-31).
16. Stephenson, R., Chavanduka, T., Sullivan, S., & **Mitchell, J. W.** (2019). What makes a successful couple? Factors associated with successfully enrolling male dyads into online HIV research. Oral poster presentation offered at the 14<sup>th</sup> International AIDS Impact Conference, London, United Kingdom. (July 29-31).
17. **Mitchell, J. W.** (2018). Factors associated with couples' top health concerns: Findings vary by the number of health concerns shared by both relationship partners. Poster presentation offered at the International Congress of Behavioral Medicine, Santiago, Chile (November 14-16).
18. **Mitchell, J. W.** & Wu, Y. Y. (2018). Perceived abilities to honor a sexual agreement: Differences at the dyadic-level among same-sex male couples in the U.S. Poster presentation offered at the International Union for Sexually Transmitted Infections Asia Pacific Sexual Health Congress, Auckland, New Zealand (November 1-3).

19. **Mitchell, J. W.** & Wu, Y. Y. (2018). Correlates between reasons for breaking a sexual agreement and perceived abilities to honor one among same-sex male couples in the U.S. Poster presentation offered at the International Union for Sexually Transmitted Infections Asia Pacific Sexual Health Congress, Auckland, New Zealand (November 1-3).
20. **Mitchell, J. W.**, Lee, J., Traynor, S. M., Feaster, D. J., Sullivan, P. S., & Stephenson, R. (2018). Oral presentation offered within the symposium *Moving Beyond HIV Prevention: Sexual Health Promotion for Gay and Bisexual Men* ("Findings from the Male Couples Agreement Project: Who included what in their agreements?") at the International Academy of Sex Research (IASR), Madrid, Spain (July 17-20).
21. Lee, J., **Mitchell, J. W.**, Wu, Y. Y., Sophus, A., & Rodriguez-Diaz, C. (2018). Reasons for forming a sexual agreement: Are there differences based on couples' concordance of having an agreement? Poster presentation to be offered at the International Academy of Sex Research (IASR), Madrid, Spain (July 17-20).
22. Sophus, A., **Mitchell, J. W.**, Wu, Y. Y., Lee, J., & Rodriguez-Diaz, C. (2018). Decision-making toward HIV/STI prevention and testing among gay male couples in Miami and Puerto Rico. Poster presentation to be offered at the International Academy of Sex Research (IASR), Madrid, Spain (July 17-20).
23. Sophus, A., & **Mitchell, J. W.** (2018). A review of approaches used to increase awareness of pre-exposure prophylaxis (PrEP) in the United States. Poster presented at the Biomedical Sciences and Health Disparities Symposium, University of Hawai'i, Honolulu (April 18-19).
24. **Mitchell, J. W.**, Lee, J., Traynor, S. M., Feaster, D. J., Sullivan, P. S., & Stephenson, R. (2017). Findings from a web-based, randomized controlled trial of an eHealth prevention toolkit to encourage at-risk, HIV-negative male couples to establish and adhere to a sexual agreement. Oral presentation offered at the 13<sup>th</sup> International AIDS Impact Conference, Cape Town, South Africa. (November 13-15).
25. **Mitchell, J. W.**, Lee, J., Godoy, F., Asmar, L., & Perez, G. (2017). Adapting an eHealth prevention toolkit to meet the health and relational needs of HIV-discordant and HIV-positive male couples. Poster presentation offered at the 13<sup>th</sup> International AIDS Impact Conference, Cape Town, South Africa. (November 13-15).
26. **Mitchell, J. W.**, Lee, J., Traynor, S. M., Feaster, D. J., Sullivan, P. S., & Stephenson, R. (2017). Recruitment and enrollment results from a randomized controlled trial of an eHealth, behavioral HIV preventive intervention for HIV-negative male couples in the U.S. Oral presentation offered at the 9<sup>th</sup> International AIDS Society Conference on HIV Pathogenesis, Treatment and Prevention, Paris, France. (July 23-26).
27. Lee, J. & **Mitchell, J. W.** (2017). Factors Associated with Greater Interest in Using Couples HIV Testing and Counseling (CHTC): Findings from a Nation-Wide, Online Study. Poster presentation offered at the Society for Prevention Research Annual Meeting, Washington, D.C. (May 30 – June 2).
28. **Mitchell, J. W.** & Lee, J. (2016). Challenges and recommendations for recruiting and verifying online dyadic data efficiently: Lessons learned from an eHealth HIV prevention

intervention for HIV-negative male couples. Poster presentation offered at the International Academy of Sex Research (IASR) Annual Conference, Malmö, Sweden (June 26-29).

29. **Mitchell, J. W. & Sophus, A.** (2016). An examination of sexual relationship power and associated factors among a large, online convenience sample of male couples in the U.S. Oral presentation offered at the International Academy of Sex Research (IASR) Annual Conference, Malmö, Sweden (June 26-29).
30. **Mitchell, J. W., Rodriguez-Diaz, C. E., Sophus, A., Lee, J., & Vargas, R.** (2016). Sexual and relational health among Hispanic male couples in Miami and Puerto Rico: Findings from an online mixed methods study. Oral presentation offered at the 22nd International Union for Health Promotion and Education Conference, Curitiba, Brazil (May 22-26).
31. Rodriguez-Diaz, C. E., **Mitchell, J. W., Sophus, A., Lee, J., & Vargas, R.** (2016). Relational and mental health among Hispanic male couples in Miami and Puerto Rico: Findings from an online mixed methods study. Oral presentation to be offered at the 22nd International Union for Health Promotion and Education Conference, Curitiba, Brazil (May 22-26).
32. **Sophus, A. & Mitchell, J. W.** (2015). Differences in male couples' relationship dynamics and engagement in CAS by relationship HIV-status. Poster presentation offered at the International Academy of Sex Research (IASR) Annual Conference, Toronto, CAN (August 8-11).
33. **Lee, J., Mitchell, J. W., & Harvey, S. M.** (2015). Young heterosexual partnered men and women's attitudes on the acceptability of prevention health programs. Poster presentation offered at the International Academy of Sex Research (IASR) Annual Conference, Toronto, CAN (August 8-11).
34. **Mitchell, J. W., Lee, J., Bauermeister, J., Woodyatt, C., Sullivan, P., & Stephenson, R.** (2015). Challenges and rewards of establishing a sexual agreement among HIV-negative male couples: Formative research toward development of a tailored online HIV prevention toolkit about agreements. Oral presentation offered at the 2015 12<sup>th</sup> International AIDS Impact Conference, Amsterdam, The Netherlands (July 28-30).
35. **Mitchell, J. W., Danh, T., & Horvath, K.** (2015). Formative research toward development of a tailored smartphone app to promote interval HIV testing for HIV-negative men who have sex with men. Oral presentation offered at the 2015 12<sup>th</sup> International AIDS Impact Conference, Amsterdam, The Netherlands (July 28-30).
36. **Mitchell, J. W., Lee, J., Bauermeister, J., Woodyatt, C., Sullivan, P., & Stephenson, R.** (2015). When and how male couples form a sexual agreement in their relationship: Qualitative findings toward development of a tailored online HIV prevention 'toolkit' for at-risk HIV-negative male couples. Poster presentation offered at the 8<sup>th</sup> International AIDS Society Conference on HIV Pathogenesis, Treatment and Prevention, Vancouver, B.C. (July 19-22).
37. **Mitchell, J. W., Lee, J., Bauermeister, J., Woodyatt, C., Sullivan, P., & Stephenson, R.** (2015). HIV-negative male couples' attitudes about pre-exposure prophylaxis (PrEP), and PrEP use within the context of their relationships and sexual agreements. Poster presentation offered at the 8<sup>th</sup> International AIDS Society Conference on HIV Pathogenesis, Treatment and Prevention, Vancouver, B.C. (July 19-22).

38. **Mitchell, J. W., Davis, F. V., Yue, P., & Feaster, D.** (2015). Online feasibility study about HIV-negative male couples substance use with weekly ecological momentary diary assessments. Poster presentation offered at the Research Society of Alcoholism Annual Conference, San Antonio, TX (June 20-24).
39. **Mitchell, J. W., Davis, F. V., Yue, P., & Feaster, D.** (2015). Online feasibility study about HIV-negative male couples substance use with weekly ecological momentary diary assessments. Poster presentation offered at the College on Problems of Drug Dependence Annual Conference, Phoenix, AZ (June 13-18).
40. **Mitchell, J. W., Davis, F. V., Yue, P., & Feaster, D.** (2015). Online feasibility study about HIV-negative male couples substance use with weekly ecological momentary diary assessments. Oral presentation offered at the Society for Prevention Research Annual Conference, Washington, D.C. (May 26-29).
41. **Mitchell, J. W., Davis, F. V., Yue, P., & Feaster, D.** (2015). Online feasibility study about HIV-negative male couples substance use with weekly ecological momentary diary assessments. Poster presentation offered at the Society of Behavioral Medicine Annual Conference, San Antonio, TX (April 22-25).
42. **Mitchell, J. W., Stephenson, R., Woodyatt, C., Patrick, S., Lim, S., Lee, J., Bauermeister, J., & Sullivan, P.** (2015). Frequency and contexts of HIV-negative male couples checking-in about their sexual agreement: Findings from first stage of developing an HIV prevention program. Oral presentation offered at the 4<sup>th</sup> Global Congress for Qualitative Health Research, Yucatán, Mexico (March 18-20).
43. **Mitchell, J. W., Stephenson, R., Woodyatt, C., Patrick, S., Lim, S., Lee, J., Bauermeister, J., & Sullivan, P.** (2015). HIV-negative male couples' attitudes about pre-exposure prophylaxis (PrEP), and PrEP use within the context of their relationships and sexual agreements. Oral presentation to be offered at the 4<sup>th</sup> Global Congress for Qualitative Health Research, Yucatán, Mexico (March 18-20).
44. **Leblanc, N., DeSantis, J., & Mitchell, J. W.** (2015). Exploring the concept of Negotiated Safety: Implications for reducing HIV risk among Black men who have sex with men. Oral presentation to be offered at the 2015 National African American MSM Leadership Conference on HIV/AIDS and other Health Disparities, Atlanta, GA (January 15-18).
45. **Mitchell, J. W., Stephenson, R., Bauermeister, J., & Sullivan, P.** (2014). Findings from Phase 1: Development of a HIV prevention toolkit for at-risk HIV-negative male couples in the U.S. Oral presentation offered within the symposium *The Importance of Using a Dyadic Approach for Development of Couples' Sexual Health Programs* at the International Academy of Sex Research (IASR), Dubrovnik, Croatia (June 25-28).
46. **Mitchell, J. W., McCabe, S. E., Boyd, C.** (2014). Examining gay male couples use of alcohol and drugs with sex: Differences by partner type, engagement of risky sex, and HIV status. Oral presentation offered at the 37<sup>th</sup> Annual Research Society on Alcoholism (RSA) Scientific Meeting, Bellevue, WA (June 23).



47. **Mitchell, J. W.** (2013). Predictors of men's attitude toward use of PrEP among 275 HIV-negative and 59 HIV-discordant gay male couples. Oral presentation offered at the *2013 American Public Health Association Meeting*, Boston, MA. (November 6).
48. **Mitchell, J. W. & Moskowitz, D.** (2013). Predictors of men's attitude toward use of PEP among 275 HIV-negative and 59 HIV-discordant gay male couples. Poster presented at the *2013 American Public Health Association Meeting*, Boston, MS. (November 6).
49. **Mitchell, J. W.** (2013). Perceptions of power among HIV-negative male couples: Implications for HIV prevention. Poster presented at the *11<sup>th</sup> International AIDS Impact Conference*, Barcelona, Spain (September 29<sup>th</sup> – October 2).
50. **Mitchell, J. W.** (2013). The association between gay male couples' use of substances with sex and aspects of their sexual agreements. Poster presented at the *International Academy of Sex Research Meeting*, Chicago, Illinois (August 8 - 10).
51. **Mitchell, J. W.** (2013). Gay male couples' attitude toward use of an over-the-counter rapid HIV test in their home. Oral presentation offered at the *7<sup>th</sup> International AIDS Society Conference on HIV pathogenesis, Treatment and Prevention*, Kuala Lumpur, Malaysia (June 30 – July 3).
52. **Mitchell, J. W.** (2013). Use of substances with sex and risk-reduction strategies among YMSM couples: Implications for HIV prevention. Oral presentation offered at the *Yth:Live 2013 Conference*, San Francisco, CA (April 6-9).
53. **Mitchell, J. W.** (2012). Similarities and differences in strategies used to reduce HIV risk within and outside of the relationship among a large sample of gay male couples in the U.S. Oral presentation offered at the *2012 American Public Health Association Meeting*, San Francisco, CA. (October 29).
54. **Mitchell, J. W.** (2012). Differences in relationship factors, testing and sexual behaviors, and attitudes toward new technologies within and between younger and older gay male couples: Implications for HIV prevention. Poster presented at the *2012 American Public Health Association Meeting*, San Francisco, CA. (October 29).
55. **Mitchell, J. W. & Petroll, A. E.** (2012). Patterns of substance use during unprotected anal intercourse within and outside of gay male couples' relationships. Poster presented at the *Gay & Lesbian Medical Association's 30<sup>th</sup> Annual Conference*, San Francisco, CA (September 21).
56. **Mitchell, J. W.** (2012). Differences and similarities in HIV risk reduction strategies used within and outside of HIV-negative seroconcordant and discordant gay male couples' relationships. Poster presented at the *XIX International AIDS Conference*, Washington, D.C. (July 24).
57. **Mitchell, J. W.** (2012). Sexual agreements among gay male couples: An analysis of characteristics and allowed sexual behaviors. Poster presented at the *XIX International AIDS Conference*, Washington, D.C. (July 24).
58. **Mitchell, J. W. & Moskowitz, D.** (2012). Who is doing what and with who? An analysis of sexual behaviors and relationship characteristics among a large sample of HIV-negative

seroconcordant gay male couples in the U.S. Oral presentation offered at the *International Academy of Sex Research Meeting*, Lisbon, Portugal (July 10).

59. **Mitchell, J. W.** (2012). Relationship dynamics and sexual health of YMSM couples: Findings from a national online study. Oral presentation offered at *Sex::Tech 2012 Conference*, San Francisco, CA (April 1).
60. **Mitchell, J. W.** (2012). Attitudes toward new social and biomedical HIV prevention techniques among male couples. Oral presentation offered at *CDC's 2012 National STD Prevention Conference*, Minneapolis, MN (March 14).
61. **Mitchell, J. W.** (2011). Adherence to a sexual agreement reduces HIV risk among HIV-negative seroconcordant gay male couples. Oral presentation offered at the *2011 American Public Health Association Meeting*, Washington D.C. (November 1).
62. **Mitchell, J. W.** (2011). Examining relationship dynamics and sexual risk behaviors among male couples: Implications for HIV prevention. Oral presentation offered at the *Center for AIDS Intervention Research, Research Conference Seminar Series*, Milwaukee, WI (September 27).
63. **Mitchell, J. W.** (2011). Adherence to a sexual agreement reduces HIV risk among HIV-negative seroconcordant gay male couples. Poster presented at *CDC's 2011 National HIV Prevention Conference*, Atlanta, GA (August 15).
64. **Mitchell, J. W. & Seal, D. W.** (2011). Predictors of concordance among a sample of gay male couples' establishment of, type of, and adherence to, sexual Agreements. Poster presented at the *International Academy of Sex Research Meeting*, Los Angeles, CA (August 11).
65. **Mitchell, J. W. & Seal, D. W.** (2011). Adherence to a sexual agreement reduces HIV risk among HIV-negative seroconcordant gay male couples in the U.S. Poster virtually presented at the *6th International AIDS Society Conference on HIV Pathogenesis, Treatment and Prevention*, Rome, Italy (July 17).
66. **Mitchell, J. W.** (2011). The role of relationship factors on HIV risk among gay male couples. Oral presentation offered at the *Center for AIDS Intervention Research, Interdisciplinary Sexuality Seminar Series*, Milwaukee, WI (March 11).
67. **Mitchell, J. W.** (2010). Differences in interpartner concordance on relationship factors among gay male couples: Implications for future HIV/STI prevention programs. Poster presented at the *2010 American Public Health Association Meeting*, Denver, CO (November 8).
68. **Mitchell, J. W.** (2010). Relationship factors associated with risky sexual behavior among a sample of gay male couples in the pacific northwest. Poster presented at the *2010 American Public Health Association Meeting*, Denver, CO (November 8).
69. **Mitchell, J. W.** (2009). Emerging issues in sexual health: The boyfriend study. Oral presentation offered at the *5th National Canadian Gay Men's Health Summit*, Vancouver, B.C. (November 10).

70. **Mitchell, J. W.**, Hoppe, T., & Jesdale, B. (2009). P-values, regressions, and correlations: How to read, interpret, and critique scientific research on LGBT populations. Oral presentation offered at the *2009 National LGBTI Health Summit*, Chicago, IL (August 16).
71. **Mitchell, J. W.** & Hoppe, T. (2009). Gay men's sexual health: Adventures into new cutting-edge research. Oral presentation offered at the *2009 National LGBTI Health Summit*, Chicago, IL (August 16).
72. **Mitchell, J. W.** (2009). Disparities in peer-based HIV prevention: Challenges and how to avoid them. Oral presentation offered at the *2009 National LGBTI Health Summit*, Chicago, IL (August 15).

Note: Underlined names represent mentored graduate students and research assistants

## INVITED PRESENTATIONS

**Mitchell, J. W.** (2016). It takes two to tango: A primer to dyadic methods. Oral presentation offered at the *2016 Society for Scientific Study of Sexuality Conference*, Phoenix, AZ (November 17-20).

**Mitchell, J. W.** (2016). PrEP and harm reductions practices among sexual minority men. Oral presentation offered at the *2016 Texas HIV/STD Conference*, Austin, TX (October 4-6).

**Mitchell, J. W.** (2016). Couples, relationship dynamics, and technology: Considerations for development of sexual health and HIV preventive interventions. Oral presentation offered at the *University of Hawai'i - Mānoa*, Honolulu, HI (June 22).

**Mitchell, J. W.** (2016). The power of two: Enhancing relationship dynamics for development of couples-focused preventive interventions. Oral presentation offered at the *Uniformed Services University, Department of Defense*, Washington DC (June 10).

**Mitchell, J. W.** (2016). Harnessing the power of relationship dynamics to develop sexual health programs for male couples. Oral presentation offered at the *5<sup>th</sup> Annual Puerto Rico Public Health Conference*, San Juan, Puerto Rico (May 2-4).

**Mitchell, J. W.** (2016). An examination of sexual relationship power and associated factors among a large, online convenience sample of male couples in the U.S. Oral presentation offered at the *International Biannual Invited Meeting: Contemporary Issues in Gay Men's Sexual Health Research*, Puerto Vallarta, Mexico (April 5-10).

**Mitchell, J. W.** (2016). Challenges and future directions for developing dyadic-focused preventive and health promotion interventions. Oral presentation offered at the *University of Southern California School of Social Work*, Los Angeles, CA (March 18).

**Mitchell, J. W.** (2014). A cause for concern: Male couples' sexual agreements and their use of substances with sex. Oral presentation offered at the *International Invited Meeting: Contemporary Issues in Gay Men's Sexual Health Research*, San Juan, Puerto Rico (February 5-9).

**Mitchell, J. W.** (2013). HIV Prevention Research with Male Couples: Implications for Development of Interventions. Oral presentation offered at the *Center for AIDS Intervention Research, Interdisciplinary Research Seminar Series*, Milwaukee, WI (December 16).

**Mitchell, J. W.** (2013). Why is HIV prevention for gay male couples in the US needed? *Invited Speaker for "Sexuality & Health Disparities: A Focus on Sexual Minority Populations" Talk series* sponsored by the University of Michigan School of Public Health and SexLab, Ann Arbor, MI (February 1).

**Mitchell, J. W.** (2012). Factors associated with, and attitudes toward, use of newer social and biomedical HIV prevention techniques among gay male couples. Oral presentation offered at the *2012 Texas HIV/STD Conference*, Austin, TX (October 31).

**Mitchell, J. W.** (2012). HIV prevention among gay male couples in the U.S. Oral presentation offered at the *Medical College of Wisconsin School of Medicine, Department of Infectious Disease Grand Rounds*, Milwaukee, WI (June 7).

**Mitchell, J. W.** (2012). Preliminary results from an online study: Characteristics, sexual behaviors, and attitudes among a large sample of male couples in the U.S. Oral presentation offered at the *Gay Men's Sexual Health: A Focus on Couples International Invited Meeting*, San Juan, Puerto Rico (February 16-19).

## **MEDIA / PRESS RELEASES**

University of Hawai'i News, 4/30/2018: <https://www.hawaii.edu/news/2018/04/30/making-a-mobile-app-to-encourage-routine-hiv-testing/>

University of Hawai'i News, 10/17/2018: <https://www.hawaii.edu/news/2018/10/17/new-relationship-hiv-prevention/>

## **MENTORSHIP EXPERIENCE**

### *Undergraduate Students: B.S. in Public Health*

**Pua Lani Yang.** Undergraduate student majoring in Public Health at The University of Hawai'i at Mānoa, Myron B. School of Social Work, Office of Public Health Studies. Mentor role: Development and application of skills for online research studies. Timeframe: Spring 2017 – Fall 2017.

**Sara Riggs.** Undergraduate student majoring in Public Health at The University of Hawai'i at Mānoa, Myron B. School of Social Work, Office of Public Health Studies. Mentor role: Development and application of skills for online research studies. Timeframe: Spring 2017.

**Lauren Loualhati.** Undergraduate student majoring in Public Health at The University of Hawai'i at Mānoa, Myron B. School of Social Work, Office of Public Health Studies. Mentor role: Development and application of skills for online research studies. Timeframe: Spring and Fall 2017.

**Elyssa Elliott.** Undergraduate student majoring in Public Health at The University of Hawai'i at Mānoa, Myron B. School of Social Work, Office of Public Health Studies. Mentor role: Development and application of skills for online research studies. Timeframe: Spring 2017 – Fall 2017.

### *Master's Students: Thesis / Practicum / Research Projects*

**Hailey Maede, BS.** Master's student in Public Health at the The University of Hawai'i at Mānoa,

Myron B. School of Social Work, Office of Public Health Studies. Paid GRA in REACH Lab.  
Mentor role: Development and application of research skills to assist with R21 on CHTC.  
Timeframe: Fall 2019 - onward

**Jaelyn Takiguchi, BS.** Master's student in Public Health at the The University of Hawai'i at Mānoa, Myron B. School of Social Work, Office of Public Health Studies. Paid GRA in REACH Lab.  
Mentor role: Development and application of research skills to assist with R01 on substance use and sexual health. Timeframe: Summer 2018 – onward.

**Shari Brown, BA.** Master's student in Psychology at the The University of Hawai'i at Mānoa. Volunteer GRA in REACH Lab. Mentor role: Development and application of research skills toward intervention development for male couples in Lima, Peru. Timeframe: Summer 2018 – onward.

**Jacob Pennington, BS, MPH** Master's student in Public Health at the The University of Hawai'i at Mānoa, Myron B. School of Social Work, Office of Public Health Studies. Paid GRA in REACH Lab. Mentor role: Development and application of research skills to assist with R21 on patient-centered decision aid. Timeframe: Summer 2018 – Spring 2019.

**Amber I. Sophus, BS, MPH.** Practicum title: Examining awareness of biomedical HIV prevention strategies (e.g., PrEP, couples-testing, nPEP) among AIDS-service and Community-based organizations in Miami-Dade County, Florida. Graduation date: 5/2016. Mentor role: Primary mentor. Timeframe: 9/2014 – 7/2017.

**Ji-Young Lee, BS, MSPH.** Thesis title: *Young heterosexual partnered men and women's attitudes on the applicability of prevention health programs.* Graduation date: 8/2016. Mentor role: Primary mentor; Timeframe: 9/2014 – 5/2016.

**Lucy Asmar, BS, MPH student.** Paid GRA in REACH Lab. Mentor role: Development and application of research skills to assist with R34 on HIV testing with MSM; Timeframe: 11/2014 – 5/2016.

#### *Doctoral Dissertation / Research Projects*

**Kasey Kam, BSN, DNPc.** Candidate for Doctor of Nursing Practice at the University of Hawai'i at Mānoa. Paid GRA in REACH Lab. Paid GRA in REACH Lab. Mentor role: Development and application of research skills to assist with R21 on patient-centered decision aid. Timeframe: Summer 2018 – onward.

**Amber Sophus, MPH, PhDc** at The University of Hawai'i at Mānoa, Office of Public Health Studies. Dissertation project: Is PrEP for me? Knowledge, attitudes, behaviors, and perspectives about PrEP among Black women living in HIV prevalent areas in the South. Mentor role: Primary mentor / Dissertation chair. Also paid GRA in REACH Lab for development and application of research skills to assist with R01 on substance use and sexual health. Timeframe: 8/2017 – onward.

**Banyar Aung, PhDc** at The University of Hawai'i at Mānoa, Office of Public Health Studies. Dissertation project: TBD. Mentor role: Primary mentor / Dissertation chair; Timeframe: 8/2018 – onward.

**Hayley McKown, PhDc** at The University of Hawai'i at Mānoa, Department of Kinesiology. Dissertation project: Understanding perceptions and efficacy of pre-service teachers towards

implementing physical activity in the school day. Mentor role: Dissertation committee member; Timeframe: 5/2019 – onward.

**Samantha DeLine, BA, PhD** at The University of Hawai'i at Mānoa, Department of Sociology. Former paid GRA in REACH Lab for development and application of research skills to assist with R01 on substance use and sexual health. Timeframe: 8/2017 – 12/2018.

**Manuel A. Ocasio, PhD** at The University of Miami School of Medicine. Dissertation / F31 Proposal: Family impact on drug use and HIV risk behavior in Hispanic sexual minority youth. Expected graduation date: 12/2017. Former mentor role: Dissertation / F31 committee member; Timeframe: 5/2015 – 7/2016.

**Natalie M. LeBlanc, PhD** at The University of Miami School of Nursing. Dissertation Proposal: Provider Perceptions of Couples HIV Testing and Counseling. Graduation date: 8/2016. Mentor role: Dissertation committee member; Timeframe: 3/2015 – 5/2016.

**Shana Green, PhD** at The University of South Florida School of Public Health. Dissertation title: A Mixed Methods Study of Dating Risk and Communication among Emerging Adults. Graduation date: 5/2017. Mentor role: Methods mentor; Timeframe: 5/2015 – 5/2016.

**Shannon Dunlap, PhD** at The University of California, Los Angeles Luskin School of Public Affairs. Dissertation (1F31HD091981-01A1): Adolescent and parent stress and support related to adolescent gender identity. Expected graduation date: 5/2020. Mentor role: Dyadic methods mentor; Timeframe: 9/2018 – onward.

**Ji-Young Lee, BS, MSPH**: doctoral student at The University of Miami School of Medicine. Doctoral student. Dissertation project: TBD. Anticipated graduation date: 5/2020. Mentor role: Secondary mentor; Timeframe: 6/2016 – onward.

**Joshua Rusow, MSW**, doctoral student at The University of Southern California, Suzanne Dworak-Peck School of Social Work. Dissertation project: TBD. Anticipated graduation date: 5/2020. Mentor role: Primary role for use of technology to advance sexual health among sexual minority young adults. Timeframe: 4/2017 – onward.

### *Junior Faculty*

**Charlene Tomas, PhD** at The University of Hawai'i at Mānoa, John A. Burns School of Medicine. Mentor role: Research content (LGBT health, research methods), manuscript writing (constructive feedback), and grant proposal development. Timeframe: Fall 2016 – Spring 2017.

**Natalie M. LeBlanc, PhD** at The University of Rochester School of Nursing. Mentor role: Research content (relationship science, use of technology in intervention development), and grant proposal development. Timeframe: Fall 2017 – onward

## TEACHING EXPERIENCE

### *University of Hawai'i at Mānoa, Office of Public Health Sciences*

Fall 2017      Grant Writing. Junior Faculty. No credit.  
This fifteen week grant writing workshop discusses the various components of

a R-level, NIH proposal with each session focusing one particular section (e.g., Specific Aims). In-between sessions, junior faculty draft and submit a section of their proposal for critique. Each faculty member receives detailed constructive feedback for that particular section. The overall aim of this workshop series is to encourage Junior faculty to submit their proposal for potential funding. Number of participatory junior faculty (N=3); Number of funding proposals submitted by junior faculty (N=3 expected); Number of proposals funded by junior faculty (N=2).

- Fall 2019 PH765: Advanced Evaluation Approaches. Graduate students. 3 credits.  
 Fall 2018 Program evaluation is essential for designing, operating, and monitoring  
 Fall 2017 whether programs achieve their intended outcomes. Program developers and funders want to know if programs achieve their objectives with outcomes related to better health. Evaluations provide information to program managers and policymakers that can assist them in making decisions about which programs to fund, modify, expand, and/or eliminate. Evaluation involves monitoring and describing program implementation and its results – activities and outcomes – for purposes of improving the effectiveness of the program or policy and/or tracking the program or policy’s success. Evaluation is an essential public health function and is critically important in the development and maintenance of evidenced-based practice. This interactive, practical course introduces concepts, methodology, and skills used to evaluate health promotion programs. We will focus on the knowledge and acquisition of skills through the development of realistic program evaluation plans in a select sample of public health programs. Course activities involve short lectures, class discussions, written assignments, group work, class presentations, exams and creating a program evaluation proposal.
- Spring 2017 Grant Writing. Junior Faculty. No credit.  
 This fifteen week grant writing workshop discusses the various components of a R-level, NIH proposal with each session focusing one particular section (e.g., Specific Aims). In-between sessions, junior faculty draft and submit a section of their proposal for critique. Each faculty member receives detailed constructive feedback for that particular section. The overall aim of this workshop series is to encourage Junior faculty to submit their proposal for potential funding. Number of participatory junior faculty (N=3); Number of funding proposals submitted by junior faculty (N=4); Number of proposals funded by junior faculty (N=3).
- Spring 2017 PH203: Global Health. Undergraduate students. 3 credits.  
 This introductory course is designed to introduce students to the global parameters of public health and to begin learning how to apply public health principles to issues and challenges in global public health. Students will learn about the strong linkages between health, economic and social development, as well as disparities in health and related socio-economic indicators, challenges to public health faced by wealthier countries, and the role of globalization and its impacts on health. Population-based public health interventions to address this wide array of health challenges will be discussed as well, including the role of community-based efforts in improving public health and the need for interdisciplinary and trans-disciplinary approaches to address global health issues.

***University of Miami Miller School of Medicine***

- Fall 2016 EPH717: Integrating Behavioral Health Theories and Models. Doctoral students.  
 Fall 2015 3 credits.

This writing intensive PhD course was designed to provide an opportunity for synthesis and integration of knowledge regarding the phenomenon of health behavior. The focus is on critical examination of theoretical and empirical work in the area of health behavior from a public health perspective. Health behavior is examined as a concept relevant to the promotion and maintenance of health in clients, including individuals, groups, families, and populations at domestic and global/international levels. An emphasis will be placed on evaluation of the impact and use of technology in the understanding and development of health behaviors and the design of health-based preventive interventions. Students will propose health behavior research using either an existing model or one that they develop.

Winter 2014 EPH617: Introduction to Disease Prevention and Health Promotion.

MPH students. 3 credits. / MD-MPH students. 3 credits.

This course introduced students to the science of disease prevention and health promotion. Through didactic presentations, in class assignments, group discussions, article readings and critiques, reaction papers, student presentations, and a term project, this course focused on providing students with an overview of: the top preventable causes of disease in the U.S., the common pathways across the lifespan to the top preventable causes of disease in the U.S., the role of theoretical frameworks in informing the development of preventive interventions, the role of both quantitative and qualitative methodology in prevention science, and the stages of intervention development and testing, including implementation and dissemination of evidence-based preventive interventions. The course also provided an overview of preventive interventions at multiple levels, including: practitioner, couple, family, and community. Examples from the fields of diabetes, obesity, substance use, injuries, mental health, and HIV/AIDS were used to illustrate the course learning objectives.

### *University of Michigan School of Nursing*

Spring 2013 NURS225: Global HIV/AIDS Epidemic. Undergraduate students. 3 credits.

Spring 2014 This multidisciplinary course provided an introduction to the global HIV/AIDS epidemic by incorporating different perspectives from the fields of Anthropology, Nursing, Psychology, Public Health and Women's Studies. The second half of the twentieth century was marked by the emergence of a new epidemic of Acquired Immune Deficiency Syndrome (AIDS) caused by the Human Immunodeficiency Virus (HIV). HIV has now spread to all parts of the globe. The epidemic has caused unimaginable human suffering and had a profound impact on many aspects of contemporary life. This interdisciplinary course reviewed these developments, provided basic information about the history, biology, politics, and culture of HIV, surveyed the current state of the epidemic in different parts of the globe, and described how the epidemic has been shaped by gender, sexuality, race, poverty, political economy, and other structures of social inequality. Topics covered included risk, prevention, treatment, activism, representation, globalization, and specific strategies of response to the epidemic.

Fall 2012 NURS802: Epidemiology. Doctoral Nurse Practitioner students. 3 credits.

Fall 2013 This blended – in-person and online – course discussed the principles, concepts and methods of population-based epidemiology research. The lectures, discussions and class activities of this course enabled students to discuss the terminology of epidemiology; calculate and interpret measures of diseases frequency and measures of association; recognize and evaluate epidemiological study designs and their limitations; and synthesize how epidemiology is applied in a chosen research area, as well as within the Nurse Practitioner profession.



Fall 2012 NURS862: Theoretical and Methodological Issues in Applied Health Behavior. Fall 2013  
 Doctoral students. 3 credits.  
 This writing intensive PhD course provided an opportunity for synthesis and integration of knowledge regarding the phenomenon of health behavior. The focus was on critical examination of theoretical and empirical work in the area of health behavior from a nursing perspective. Health behavior was examined as a concept relevant to the promotion and maintenance of health in clients, including individuals, groups, families, and populations at domestic and global/international levels. An emphasis was placed on evaluation of the impact and use of technology in the development, maintenance and measurement, and development of health behaviors and the design of nursing interventions. Students proposed health behavior research using either an existing model or one that they develop.

### ***Oregon State University***

Fall 2007 H312: AIDS and STDs in Modern Society: A Global Perspective.  
 Spring 2008 Undergraduate students. 3 credits.  
 Winter 2009 Fundamental principles relating to etiology, nature, prevention, and control of Spring 2009  
 AIDS and other sexually transmitted diseases in contemporary society were discussed and emphasis on the social, psychological, legal, economic, and ethical issues surrounding these diseases were highlighted. Students were evaluated for their understanding and ability to describe complex issues associated with HIV/AIDS and vulnerable populations.

Spring 2008 H476: Planning and Evaluating Health Promotion Programs. Undergraduate students. 3 credits.  
 This writing intensive course used a systematic approach to planning, implementing, and evaluating health promotion programs in public agencies, community settings, worksites, educational settings, and health care settings. Students were evaluated for quality of writing and development of a detailed health promotion program with an evaluation plan.

### **PROFESSIONAL AFFILIATIONS**

2008 – present	American Public Health Association (APHA), HIV/AIDS section
2009 – present	Society for the Scientific Study of Sexuality (SSSS)
2011 – present	International AIDS Society (IAS)
2011 – present	International Academy of Sex Research (IASR), Full member
2012 – present	International Association for Relationship Research (IARR)
2012 – present	Gay & Lesbian Medical Association (GLMA)
2012 – present	American Sexually Transmitted Diseases Association (ASTDA)
2015 – present	Society for Prevention Research
2015 – present	Society for Behavioral Medicine

### **SCIENTIFIC REVIEW COMMITTEE APPOINTMENTS**

2011 – 2015	Abstract reviewer; APHA - HIV/AIDS section
2013	Abstract reviewer; mHealth Summit
2013 – 2014	Scientific Program Committee; IASR
2014 – current	Abstract reviewer; International AIDS Society

2015	Abstract reviewer; APHA – Alcohol and substance use section
2015 – 2016	Co-chair HIV/AIDS Scientific Program; Society for Prevention Research

## SERVICE TO THE UNIVERSITY

2012 – 2014	Chairperson and organizer of HIV Faculty Research Cluster of Anthropology, Women's Studies, Psychology, Nursing, and OB GYN
2012 – 2014	University of Michigan faculty participant in Undergraduate Research Opportunity Program (UROP)
2013 – 2014	Member of School of Nursing Research Committee
2013 – 2014	Faculty member and advisor of Hillman Scholars program of BSN to PhD in School of Nursing
2013 – 2014	Member of faculty senate for the University of Michigan
2014 – 2016	PhD admissions committee for the Department of Public Health, University of Miami Miller School of Medicine
2014 – 2016	Faculty member of Miami Center for AIDS Research
2015 – 2016	Co-Leader of Junior Faculty Support Group in Department of Public Health Sciences, University of Miami Miller School of Medicine
2015 – 2016	New faculty hire committee for the Department of Public Health, University of Miami Miller School of Medicine
2016 -	PhD admissions committee, Office of Public Health Sciences, University of Hawai'i at Mānoa
2016 – 2019	Student affairs committee, Office of Public Health Sciences, University of Hawai'i at Mānoa
2016 -	HPM admissions committee, Office of Public Health Sciences, University of Hawai'i at Mānoa
2017 -	SBHS admissions committee, Office of Public Health Sciences, University of Hawai'i at Mānoa
2018 -	Chair of research committee, Office of Public Health Sciences, University of Hawai'i at Mānoa
2019 -	Evaluation committee, Office of Public Health Sciences, University of Hawai'i at Mānoa
2017 – 2019	Social and Behavioral Sciences IRB reviewer, University of Hawai'i at Mānoa
2020 –	Vice Chair of Social and Behavioral Sciences IRB, University of Hawai'i at Mānoa

## SERVICE TO ACADEMIC JOURNALS

### Ad-hoc Reviewer

Journal of Sex Research  
 International Journal of Sexual Health  
 Journal of Sexual Medicine  
 Journal of Homosexuality  
 Journal of Sex & Marital Therapy  
 Social Science & Medicine  
 PLoS One  
 Journal of Acquired Immune Deficiency Syndromes  
 Journal of Adolescent Health

Journal of the International Association of Providers of AIDS Care  
 American Journal of Men's Health  
 Health Education & Behavior  
 AIDS  
 BMC Public Health  
 Sexually Transmitted Infections  
 LGBT Health  
 Culture, Health & Sexuality  
 Journal of Urban Health  
 Prevention Science  
 Sexually Transmitted Diseases  
 European Health Psychology Society  
 Psychology of Men & Masculinity  
 Journal of Medical Information Research, eHealth and uHealth  
 Journal of Medical Information Research, Public Health and Surveillance  
 Journal of Medical Information Research, Protocols  
 Journal of Advanced Nursing  
 Journal of Relationships Research  
 Journal of the International AIDS Society  
 Journal of Women's Health

*Editorial Board Member*

AIDS and Behavior  
 Archives of Sexual Behavior

**SERVICE TO STATE AND GOVERNMENT AGENCIES**

*Grant Reviewer*

2/2013, 2/2014	Michigan Department of Community Health, Division of Health, Wellness, and Disease Control - HIV/AIDS Prevention & Intervention Section
6/2016	National Institute of Health, Small Business: HIV/AIDS Innovative Research Applications, ZRG1 AARR-G (10)
9/2016	National Institute of Health, Uniformed Services University, Global Health
11/2016	National Institute of Health, Small Business: HIV/AIDS Innovative Research Applications, ZRG1 AARR-G (10)
3/2017	National Institute of Health, Small Business: HIV/AIDS Innovative Research Applications, ZRG1 AARR-G (10)
11/2017	National Institute of Health, Behavioral and Social Consequences of HIV/AIDS Study Section (BSCH)
3/2018	National Institute of Health, Behavioral and Social Consequences of HIV/AIDS Study Section (BSCH)

3/2018	National Institute of Health, Small Business: HIV/AIDS Innovative Research Applications, ZRG1 AARR-G (10) B
7/2018	National Institute of Health, Behavioral and Social Consequences of HIV/AIDS Study Section (BSCH)
11/2018	National Institute of Health, Public Health Approaches to HIV/AIDS Study Section (PPAH)
12/2019	National Institute of Health, Integrated HIV/AIDS Research Applications (Member Conflict: ZRG1 AARR N (02)

## **PROFESSIONAL SERVICE**

2001	Peace Corps, HIV Prevention – Kenya
2002 – 2003	Mpowerment Co-Coordinator, Life Foundation – Honolulu, HI
2004	Sexual Health Educator, Children’s Hospital of LA – Los Angeles, CA
2005	Peace Corps, Sexual Health and HIV prevention – Fiji
2008 – 2009	Men’s Wellness Center Manager, Cascade AIDS Project – Portland, OR

## **COMMUNITY SERVICE**

2011 – 2012	HIV/STI Testing Counselor; BestD Clinic, Milwaukee, WI
2010 – 2012	Community Advisory Board member; Diverse & Resilient, Milwaukee, WI
2014 – 2015	Board Member of Natadores LGBT Masters Swim Team, Miami, FL
2014 – 2016	Board Member of Flamingo Parkview Home Owners Association, Miami Beach, FL
2017 –	Volunteer, Hawai’i LGBT Legacy Foundation, Honolulu, HI

## **RESEARCH METHODS AND ANALYSIS EXPERTISE**

### **Research Methods**

- Online and in-person data collection and questionnaire designs (e.g., mobile, dyadic data)
- One-group, quasi-experimental, and experimental research designs
- Adaptive study designs, including MOST and SMART
- Community-based organizational program development and evaluation
- Use of Agile Development and Iterative Processes to design and pilot-test mHealth and eHealth interventions

### **Quantitative Analysis**

- Multilevel/hierarchical linear modeling, including Actor-Partner Interdependence Model and Structural Equation Modeling with indistinguishable and distinguishable dyads
- Analysis of variance and regression
- Statistical packages: Stata, SAS

## Qualitative Methods

- Thematic and content analysis
- Qualitative packages: MaxQDA2, NVivo

## Mixed Methods

- Convergent, sequential, and embedded designs
- Merging and embedding data

## REFERENCES

Al Katz, MD

Professor in Public Health at University of Hawaii

Relationship: colleague / supervisor

katz@hawaii.edu | 808-956-5741

Kristin Bacon, MPH

IRB Chair at University of Hawaii

Relationship: colleague / supervisor

kbacon@hawaii.edu | 808-956-8480

Rob Stephenson, PhD

Professor and Department Chair at University of Michigan

Relationship: colleague / fellow investigator

rbsteph@umich.edu | 734-763-1188

Julie Barroso, PhD

Professor and Department Chair at Medical College of South Carolina

Relationship: colleague / fellow investigator

barroso@muscc.edu | 843-792-2110

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# CURRICULUM VITAE

**ROBERTO G. LUCCHINI, MD**

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[www.mountsinai.org/profiles/roberto-lucchini](http://www.mountsinai.org/profiles/roberto-lucchini)

## APPOINTMENTS/EMPLOYMENT

Department of Environmental Medicine and Public Health  
Icahn School of Medicine at Mount Sinai  
One Gustave L. Levy Place, Box 1057  
New York, New York 10029, USA

Department of Medical-Surgical Specialties  
Radiological Sciences and Public Health  
University of Brescia  
P.le Spedali Civili 1, 25123 Brescia, Italy

Published Work in MyBibliography: <http://goo.gl/cGV0mk>  
PlumX: <https://plu.mx/mtsinai/u/rlucchini>  
Linkedin: [linkedin.com/pub/roberto-lucchini/34/145/124](https://www.linkedin.com/pub/roberto-lucchini/34/145/124)  
ResearchGate: [www.researchgate.net/profile/Roberto\\_Lucchini](https://www.researchgate.net/profile/Roberto_Lucchini)  
SCOPUS ID: 7005066011  
ORCID: 0000-0002-9723-0237

## Academic Positions

2012-present	Professor of Medicine, Pulmonary, Critical Care and Sleep Medicine
2005-present	Associate Professor, Occupational Health, University of Brescia, Italy
2004-present	Research Associate, University of California, Santa Cruz, Environmental Toxicology
2002-2005	Assistant Professor, Occupational and Environmental Health, University of Brescia, Italy
1992-2018	Attending Physician, Clinic of Occupational Medicine, Spedali Civili Brescia, Italy

## Administrative Positions

2012-present	Director, NIOSH Education and Research Center for Region II – NY/NJ: Oversees graduate training and continuing education in Occupational Medicine Residency (Mount Sinai, Rutgers University), Industrial Hygiene (CUNY School of Public Health), Occupational Health Nursing and Ergonomics (NYU), Occupational Safety and Health (New Jersey Institute of Technology)
2012-present	Deputy Director, World Trade Center Health Program Data Center, Mount Sinai, New York, New York. Coordinates data management and analysis.
2012-2019	Director, Division of Occupational and Environmental Medicine, Department of Environmental Medicine and Public Health, Icahn School of Medicine, Mount Sinai, New York, New York

1996-present PI of research grants from Italian, EU and NIH funds, at the Department of Medical-Surgical specialties, Radiological Sciences and Public Health, University of Brescia, Italy

**GAPS IN EMPLOYMENT** None

**EDUCATION**

1991 Residency in Occupational Medicine, University of Parma, School of Medicine, Parma, Italy. Thesis: Neurobehavioral effects in operating theater personnel exposed to anesthetic gases.

1987 Medical Degree, University of Brescia, School of Medicine, Italy. Thesis: Biological monitoring and neuroendocrine effects among aluminum exposed workers.

**Post Graduate Education and Training**

1995 Internship at CINBIOSE (Centre pour l'étude des interactions biologiques entre la santé et l'environnement), Université du Québec à Montréal. Exchange Agreement Program of the Medical Research Council of Canada and National Research Council of Italy.

1992 Training at the Division of Psychophysiology, National Institute of Working Life, Solna, Sweden: Computerized psychometric test system SPES (Swedish Performance Evaluation System) Version 5.

1992 Third International Course on "Behavioral and psycho- physiological effects of the physical and chemical work environment". NIVA Nordic Institute for advanced training in Occupational Health. Salsomaggiore (Parma), Italy.

1990 Course in clinical neurotoxicology: "Assessment and diagnosis of neurological and behavioral alterations due to exposure to industrial toxic substances". WHO Regional Center for Pesticide Safety, Busto Garolfo (Milan), Italy.

1989 International Course on "Occupational Neurotoxicology". NIVA Nordic Institute for advanced training in Occupational Health. Kuusamo, Finland.

1988 Intensive residency in Occupational Health, Extended Program in Medical Education, University of California, San Francisco, USA.

**CERTIFICATION**

1992 Board certification in Occupational Medicine, University of Parma, Italy  
#CE20128024039000002

**LICENSURE**

1988 Medical License for the Province of Brescia, Italy #4852

**HONORS/AWARDS**

2016 ICOH Service award, Chair of Scientific Committee on Neurotoxicology and Psychophysiology 2006-2012

2017 Mount Sinai Selikoff Centers for Occupational Health. Appreciation Award in recognition of continued support of 9/11 workers and volunteers

2018 Giovan Giacomo Giordano – NIAF Lifetime Achievement Award for Ethics and Creativity in Medical Research. 2018 National Italian American Foundation Gala. October 13, 2018. Washington, DC.

**PATENTS**

Depero LE, Bontempi E, Borgese L, Zacco A, Lucchini RG. Method For The Analysis Of Samples. International patent n. WO/2009/116107. Publication Date 24.09.2009  
<http://www.wipo.int/pctdb/en/wo.jsp?WO=2009116107>



## OTHER PROFESSIONAL ROLES

### Professional Affiliation and Committee Service

2019	Neurology, Aging, Musculoskeletal Epidemiology (NAME) Study Section, Center for Scientific Review, National Institutes of Health – Permanent member
2019	Occupational Knowledge International <a href="http://www.okinternational.org/">www.okinternational.org/</a> Board Member
2017	Neurotoxicology and Alcohol (NAL) Study Section Center for Scientific Review, National Institutes of Health - Ad-hoc reviewer
2016	Neurology, Aging, Musculoskeletal Epidemiology (NAME) Study Section, Center for Scientific Review, National Institutes of Health - Ad-hoc reviewer
2016	Councilor, International Neurotoxicology Association
2015	NYC Business and Labor Coalition – Infrastructure Committee
2015	NYC Occupational Health Interest Group
2015	Chair of the ICOH SC "Toxicology of Metals" 2015-2018
2015	Board member of LDOH, Foundation for Learning and Developing Occupational Health <a href="http://www.ldoh.net/">www.ldoh.net/</a>
2014	Board member of the Association of Occupational and Environmental Clinics
2012	Association of Occupational and Environmental Medicine
2012	Reviewer for EU funding system (E-COST and HORIZON)
2012	Secretary of the ICOH SC "Toxicology of Metals" 2012-2015
2011	Councilor of the International Society for Trace Element Research in Humans
2010	Society of Toxicology
2010	International Society of Environmental Epidemiology
2009	Chair of the ICOH SC "Neurotoxicology and Psychophysiology" for 2009-2012
2008	Fellow of Collegium Ramazzini
2006	Chair of the ICOH SC "Neurotoxicology and Psychophysiology" for 2006-2009
2003	Secretary of ICOH SC "Neurotoxicology and Psychophysiology" for 2003-2006
2000	Secretary of ICOH SC "Neurotoxicology and Psychophysiology" for 2000-2003
2000	International Neurotoxicology Association
1993	Italian Association of Preventive Medicine for Health Care workers
1993	International Commission on Occupational Health (ICOH)
1990	Italian Society of Occupational Health and Industrial Hygiene

### International Collaborations

2019	Expert panelist and advisor for the Future Of Work agenda of the International Labor Organization, New York
2018	Representative of ISMMS and ICOH for two UN High Level meetings on EndTb (NYC, September 26 <sup>th</sup> ) and CombatNCDs (NYC, September 27 <sup>th</sup> )
2015	Advisor of the First All-Russian Week of Occupational Safety on 13-17 April, 2015, Olympic Park, Imereti lowland, Sochi, Russian Federation
2004	Resource scientist for the program "Regional Awareness Raising Workshops on Mercury Pollution", United Nations Environmental Program (UNEP).
2003	Panelist of an expert group for the consensus on diagnostic criteria for the assessment of manganism, CSST and IRSST of Quebec. Consensus document on: <a href="http://www.irsst.qc.ca/en/publicationirsst_100134.html">http://www.irsst.qc.ca/en/publicationirsst_100134.html</a>
2003	Appointment at the Research Participation Program "Neurological Health of Welders", NIOSH, Morgantown, West Virginia, USA
2002	Panelist of an expert group "Manganese Neurotoxicity" hosted by Health Canada Ottawa, December 5 and 6, 2002. This led to a re-evaluation of the risk assessment of manganese

- by Health Canada, that concluded in a novel protective standard based on the occupational data by Lucchini et al., 1999 ([www.hc-sc.gc.ca/ewh-semt/pubs/air/manganese-eng.php](http://www.hc-sc.gc.ca/ewh-semt/pubs/air/manganese-eng.php))
- 1996 Project referent of the "Study on early neurotoxic effects due to occupational exposure to manganese". Supported by the scientific and technological cooperation program between Italy and Québec for triennium 1996-1998
- 1995 Project referent of inter-university cooperation entitled "Health effects due to manganese exposure". Supported by the scientific and Technological agreement between Italy and the People's Republic of China for triennium 1995-1997

### Organization of International Meetings

- 2018 International Symposium "Autism Spectrum Disorders: new evidence for diagnosis and prevention" University of Brescia, Italy, April 17
- 2016 International conference on Manganese toxicity. Icahn School of Medicine, New York, NY, September 25-28.
- 2013 Neurotoxicology and development: human, environmental and social impacts. The 12th International Symposium of the Scientific Committee on Neurotoxicology and Psychophysiology, ICOH, Cape Town, South Africa, March 24-27
- 2011 "Neurotoxicity and Neurodegeneration. Local Effects and global impact" INA and ICOH SCNP joint conference. Xian, China, June 5-10
- 2006 "Neurotoxic metals: lead, manganese and mercury. From research to prevention". Satellite meeting of ICOH 2006 June 16-17, Brescia, Italy.
- 2002 "8<sup>th</sup> International Symposium on Neurobehavioral methods and effects in occupational and environmental health" sponsored by the ICOH Scientific Committee on Neurotoxicology and Psychophysiology, Brescia, Italy, June 23-26
- 2001 "Assessment of effects due to low doses of inorganic mercury following environmental and occupational exposure: human and in vitro studies on specific toxicity mechanisms" Italian Ministry of Research and Education. Gargnano, Italy, September 27-28
- 2000 "Pathologies due to repetitive motion of the upper limb", Lombardy Association of Occupational Health and Industrial Hygiene, Brescia, Italy, November 24
- 1994 2nd National Congress of Preventive Medicine for Health Care Workers, Italian Association of Preventive Medicine for Health Care workers. June 8-10, Gargnano, Italy.
- 1992 Occupational health risks due inhalation anesthetics. Lombard Association on Occupational health and Industrial Hygiene, Brescia, Italy, May 12.

### Editorial Activities

- 2016 Associate Editor of *Neurotoxicology*
- 2014 Editor of *Toxics*
- 2014 Editor of *Annals of Occupational and Environmental Medicine*
- 2013 Associate Editor of *Annals of Global Health*
- 2010 Editor of *Safety and Health at Work*
- 2006-2008 Editor of *The Science of the Total Environment*
- 2006 Editor of *Neurotoxicology*
- 2003 Editor of *Industrial Health*, National Institute of Industrial Health Japan
- 2002 Editor of the *American Journal of Industrial Medicine*

## RESEARCH PROFILE

My research is focused on the health impact of environmental and occupational hazards from prenatal life to adolescence, working life and old age. As an interdisciplinary scientist, I connect epidemiologists to exposure scientists, toxicologists, and clinicians, experts in genetics, nutrition and wellbeing using a strong public health approach. I am also experienced in the epidemiology of disasters and emergency preparedness, having worked since January 2012 in the epidemiological surveillance of the World Trade Center Health Program, caring for all men and women who served as responders after the terroristic attack of 9/11 and the population residing in lower Manhattan. I have also worked on health impacts of natural disasters related to extreme weather conditions.

My specific epidemiological interests are the following:

- Global Occupational and Environmental Health with focus on OHS services and Work Compensation in Low and Middle Income Countries
- Neurotoxic effects of heavy metals, manganese, lead and mercury from early life to old age (from neurodevelopmental to neurodegenerative impacts)
- Occupational, environmental and genetic determinants of neurodegenerative diseases
- Exposure sciences, biomarkers of occupational and environmental exposure
- Risk assessment and exposome
- Genetic and epigenetic susceptibility
- Neurologic, cardiovascular and respiratory effects of air pollution and exposure to welding fumes, diesel exhausts, and previous exposure to World Trade Center dust
- Cancer related to WTC exposure
- Disaster epidemiology and Emergency preparedness
- Women's health at work and during pregnancy
- Intervention research on the effectiveness of education, health protection and health promotion.

## CLINICAL PROFILE

1992 -2011 Attending Physician, Clinic of Occupational Health, Civil Hospital of Brescia, Italy  
Oversaw 10 staff, 4 residents, 4 students, 2 fellows per year, performed 100 patient consultations per month, provided clinical expertise for the diagnosis and prevention of respiratory conditions such as silicosis, asbestosis, COPD, toxicological disturbances, implemented health surveillance for workers exposed to silica, lead and repetitive limb motion, and electronic patient chart system, developed educational programs for workers exposed to occupational hazards, filed cases for work compensation, performed screening and health surveillance for the hospital Employee Health and Wellness department.

## IMPACT

The Declaration of Brescia on Prevention of the Neurotoxicity of Metals (Landrigan et al, 2007) was instrumental in reducing allowable levels of manganese additives in gasoline in China and banned all metallic additives in fuel by the EU.

Health Canada and the Japanese Ministry of Environment adopted new protective standards for manganese exposure in 2005 and 2014 respectively. The risk assessment of both agencies was based on occupational data published (Lucchini et al., 1999).

## GRANTS AND CONTRACTS SUPPORT

### CURRENT GRANTS

Funding Source, Project Title & Number	Role	Dates	Costs	Supplemental Info
CDC/NIOSH <b>Aging Processes Among WTC Responders: Identification of Premature Aging and Preventive Strategies</b> U01OH012068	Lucchini, RG (MPI)	Currently in the JIT process		This UO1 grant aims to identify individuals at risk for early aging through clinical, laboratory data of frailty among the WTC responders who were highly exposed to chemical hazards and psychological trauma
NIH/NIEHS <b>Impacts of extreme meteorological conditions on workers and community health in Central America</b> R13ES031837	Lucchini, RG (PI)	06/01/20 - 05/31/21	\$10,000	This R13 grant will sponsor a first training workshop in El Salvador, as part of a proposed annual course to be conducted in Central America on occupational and environmental health topics
NIH/NIEHS <b>The Mount Sinai Transdisciplinary Center on Health Effects of Early Environment</b> P30ES023515	Wright, RO (PI) Lucchini, RG (Col)	04/01/14-03/31/23		This core center grant is designed to discover the environmental causes of disease in children, translate scientific discoveries into evidence-based strategies for prevention/treatment, and build the careers of young physician scientists.
CDC/NIOSH <b>The World Trade Center Data and Coordination Center</b> 200-2017-93325	Lucchini, RG (Deputy_PI)	04/01/17-03/31/22	\$28,680,673	This project is the coordinating center for a multicenter program providing monitoring and treatment to volunteers who assisted in the recovery and cleanup after the 9/11 attack. The Data Center collects data from five different clinical centers, provide data analysis with periodical reporting on health surveillance.
CDC/NIOSH <b>NIOSH (Region II NY/NJ) Educational Resource Center</b> T42 OH008422	Lucchini, RG (PI)	07/01/05–06/30/21	\$8,667,721	The goal of this Educational Research Center is to provide training in occupational safety and health to occupational health professionals in the States of New York and New Jersey. The Center includes a network of five Institutions: Icahn School of Medicine at Mount Sinai (Occupational Medicine), Rutgers University (Occupational Medicine), Hunter College (Industrial Hygiene), New Jersey Institute of technology (Occupational Health and Safety), New York University (Ergonomics and Nursing)
NIH/NIEHS <b>Manganese Exposure Windows and Neurologic Function in Adolescence</b> R01ES019222-06A1	Lucchini, RG (PI)	09/30/16 - 08/31/21	\$2,663,068	This study will address the mechanisms by which environmental chemicals may impact adolescent brain development and can help

				explain and prevent maladaptive development from occurring potentially identifying future interventions to mitigate the impact of chemicals on the adolescent brain. The study is a follow up of the previous baseline conducted in the province of Brescia, Italy, and will entail functional MRI assessment.
CDC/NIOSH <b>Structural and Functional Neuroimaging of Post-Traumatic Stress Disorder and Cognitive Impairment in World Trade Center Responders</b> U01OH011314	Lucchini, RG (PI)	09/01/16–08/31/20	\$2,398,962	This study will assess brain changes in World Trade Center responders who were exposed to a mix of neurotoxins and to psychological trauma, exploring interrelations between cognitive impairment and Post Traumatic Stress Disorder.
University of Brescia, Italy <b>Health impacts of environmental exposure to airborne pollutants in the sites of Brescia and Taranto, Italy: increase knowledge to address preventive intervention of local and global relevance.</b> UNBSCLE 9015	Placidi D (PI) Lucchini, RG (COI)	11/1/16 – 10/30/20	€450,000	Study aim is to assess the health impact of occupational and environmental exposure to metals and persistent organic pollutants in two Italian sites with relevant industrial emission. The study will focus on neurological and respiratory effects in workers, children and elderly, residing in the vicinities of the point sources. Transport of pollutants will be modeled from the emission points to the school and home environments and through soil to ground water.

## PENDING GRANTS

NIH <b>The Public Health Impact of Manganese and Metal Exposure (PHIME) cohort.</b>	Lucchini R (MPI)			The primary goals of this R24 application are to enhance and maintain the Public Health Impacts of Metals Exposure (PHIME) cohort as subjects enter the understudied life stage of adolescence/early adulthood, and position PHIME for integration with other cohorts to address complex interactions and mixture exposure effects
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## PAST GRANTS

Funding Source, Project Title & Number	Role	Dates	Costs	Supplemental Info
NIH/NIEHS <b>The Mount Sinai Transdisciplinary Center on Early Environmental Exposure</b> P30 ES023515	Wright RO (PI) Lucchini, RG (COI)	04/1/14 – 03/31/18	\$753,156	This core center provides research infrastructure and pilot grants to investigators at Mount Sinai conducting environmental health research. I am the core leader of the Oxidant-Antioxidant Imbalance research group.
CDC/NIOSH	Stein, C (PI)	07/01/15-		The major goal of this project was to

<b>Cognitive Function among World Trade Center Rescue and Recovery Workers – Direct Effect or Mediation through Comorbidities.</b> U01 OH010988	Lucchini, RG (Col)	06/30/17		quantify the association between WTC exposure and cognitive function and to estimate the direct and indirect effects of WTC exposure on cognitive function.
<b>NIH/NIEHS Twenty-Eight International Neurotoxicology Conference: Manganese, Neurodevelopment and Neurodegenerative Diseases</b> R13ES027342	Lucchini, RG (PI)	09/15/16-09/14/17	\$16,000	This grant supported the organization of the 28 <sup>th</sup> International Neurotoxicology meeting on Manganese neurotoxicity, held at the Icahn School of Medicine at Mount Sinai, New York on 9/25-28, 2016
<b>NIH/NIEHS Stress-Lead Interactions and Child Development</b> R01 ES013744	Wright RO (PI) Lucchini, RG (Col)	11/1/12-10/31/16		Social stressors, iron deficiency anemia, and lead exposure are all environmental risk factors for poor neurodevelopment in young children. This project determines the independent effect of pre- and post-partum maternal stress in predicting infant development, and the <i>multiplicative</i> joint effects of maternal stress/iron deficiency and maternal stress/lead poisoning in predicting infant development.
Istituto Superiore Sanità, Rome Italy <b>Biomonitoring and toxicity of pollutants in the territory of Taranto, Italy</b> CCM 2013	Lucchini, RG (PI)	02/13/14 – 02/13/14 - 08/12/16	€180,000	Cross sectional study targeted children residing in the proximity of a large smelter plant generating exposure to metals (lead, arsenic, manganese, mercury, cadmium), dioxins, PCBs and PAH. Behavioral outcomes will be assessed and analyzed with statistical models targeting mixed exposure
<b>NIH/NIEHS Manganese Exposure Windows and Neurologic Function in Adolescence</b> R56-ES019222-06	Lucchini, RG (PI)	09/10/15 - 09/29/16	\$270,000	Primary objective of this study is to characterize effects of environmental manganese (Mn) exposure on adolescent neurodevelopment through brain imaging. This is under consideration as a R01 beginning 9/30/2016.
INAIL - Italian Work Compensation Institute <b>Interaction between Genetic Predisposition and Occupational/environmental Exposure to Chemicals like Metals, Pesticides and Solvents in the Origin of Parkinsonian Disturbances</b> 60002.02/07/2012	Lucchini, RG (PI)	07/1/12 - 12/31/15	€150,000	A case-control study, retrospective occupational and environmental exposure to potential neurotoxic agents was assessed in Parkinson patients residing in the Brescian province in relation to genetic predisposition and various covariates.
Lombardy Region, Italy <b>Metals and children</b> 170174 SAL-68	Lucchini, RG (PI)	01/1/11-06/30/12	€210,000	International joint study between Lombardy Region, Italy and the University of Montreal, Québec, on the assessment of exposure biomarkers and various environmental media for metal concentration in Northern Italy and Québec. Biomarkers and environmental matrices yielded dose response assessment with neurobehavioral outcomes in children from both study sites.
<b>NIH/NIEHS Neurologic Function in Children</b>	Lucchini, RG (PI)	09/10/10 –	\$2,848,986	Investigated neurodevelopmental toxicity of ambient Manganese

<b>Exposed to Ambient Manganese</b> R01 ES019222		04/30/15		exposure in the Brescian province in residents exposed to environmental and occupational exposure metals, including manganese and lead, since the early 1900s. Adolescents were enrolled from three target sites with current and historical exposure and a reference area. Several neuropsychological endpoints were assessed, with various exposure biomarkers and environmental measures on different media. Genetic data were also measured to assess gene-environment interactions.
EU/6th Frame Program <b>Effects of manganese on the brain</b> FOOD-CT-2006-016253/WPI6	Lucchini, RG (PI)	03/1/06-02/28/11	€570,000	Project goal was to evaluate the association between exposure to manganese and neurotoxic outcomes in residents near the vicinity of a former ferroalloy plants in Northern Italy. The study population included children, workers, elderly and pregnant women according to a lifetime exposure concept.
Italian Institute of Prevention and Safety at Work (ISPESL) <b>Diagnostic markers of Parkinsonian syndromes with occupational and environmental origin</b> PFA/DML/UO2/	Lucchini, RG (PI)	05/2003-05/2006	€150,000	Assessment of differential markers for the diagnosis of parkinsonian disturbances through a comparison of Parkinson patients with different degree of exposure to neurotoxic agents
Italian Institute of Prevention and Safety at Work (ISPESL) <b>Alzheimer Disease: study of the risk related to occupational factors</b> PFA/DML/UO3/	Lucchini, RG (PI)	10/2001-07/2005	€150,000	Case-control study on the risk associated to occupational exposure to neurotoxic agents
National Research Council (CNR) <b>Frequency of Parkinsonian disturbances among residents near ferroalloy industries</b> 98.728.PS13	Lucchini, RG (PI)	06/1998-12/2001	€10,000	Assesse prevalence of Parkinsonian disturbances in a population with prolonged environmental exposure to manganese caused by the presence of ferroalloy industries
Italian Ministry of University and Research (MURST) <b>Assessment of effects due to low doses of inorganic mercury following environmental and occupational exposure: human and in vitro studies on specific toxicity mechanisms</b> COFIN98	Alessio, L (PI)	01/1998-12/2000		Study of the neurological, renal and immunological effects due to mercury exposure through occupation, dental amalgams and consumption of fish
Italian Institute of Prevention and Safety at Work (ISPESL) <b>Neurophysiological and neurochemical indicators of early effects for occupational exposure to metals</b> RC 38/97	Lucchini, RG (PI)	11/1998-11/2000		Assessment of neurophysiological and neurochemical indicators of early effects due to occupational exposure to heavy metals such as lead, manganese and mercury
Italian Institute of Prevention and Safety at Work (ISPESL) <b>Early neurotoxic effects in manganese exposed workers</b> RN 44/96	Lucchini, RG (PI)	07/1997-07/1999		Assessment of early effects of manganese exposure on neurobehavioral, neuroendocrine functions in ferroalloy workers

## TRAINEES

Name	Level of Trainee	Role in Training & Inclusive Dates of Training	Training Venue and topic	Trainees' Current Status/Employment
Hedi M Furu	PhD student	Mentor Training Period: 2021	University of Helsinki - Screening of occupational chronic solvent encephalopathy – effectiveness, costs and work ability	PhD student
Elza Reichtman	Postdoc	Mentor - Training Period 2019-present	Icahn School of Medicine at Mount Sinai – Neurodevelopmental and brain imaging assessment	Postdoc
Mathuramat Seesen	PhD student	Primary Mentor - Training Period 2019-21	GeoHealth grant at University of Chiang Mai, Thailand– Effect of pesticide exposure on insulin regulation	PhD student
Stefano Renzetti	PhD student	Mentor - Training Period 2018-21	University of Brescia, and Visiting student, Icahn School of Medicine at Mount Sinai, New York. Statistical models for the analysis of health effect from mixed exposure to occupational and environmental hazards	PhD student
Marco Peli	PhD student	Co-Mentor to doctoral students: Training Period 2015-18	University of Brescia, and Visiting student at Columbia University, New York "Transportation of metallic elements from industrial emission in home and school environment and through soil to ground water"	Research fellow. University of Brescia, Italy
Birgit Clauss-Hann, SD	Early carrier	Primary Mentor and co-Mentor to Junior Faculty and Postdoctoral: 2014-16	NIEHS K99/R00 Pathway to Independence Award “Metal mixtures, children’s cognition, and sensitive developmental windows”	Assistant Professor, Boston University School of Public Health
Stephanie Peter	PhD student	Primary and co-Mentor to doctoral students: Training Period 2012-2014	University of Brescia, Italy and visiting student University of California, Santa Cruz, CA “Assessment of exposure to metals in human nutrition and accumulation of manganese and lead via inhalation in the province of Brescia, Italy”	Nutritionist in Pharmaceutical Industry, Munich, Germany
Roberta Ferri	PhD student	Primary and co-Mentor to doctoral students: Training Period 2011-2013	University of Brescia, Italy and visiting student, University of California at Santa Cruz “Study of heavy metals bio-accumulation in plant species”	Expert in food safety, Brescia, Italy



Rachel Eastman	Master student	Primary and co-Mentor to doctoral students: Training period 2011-2012	University of California, Santa Cruz, CA "Hair as biomarker of environmental manganese exposure"	Occupational Health and Safety Specialist, University of Colorado at Boulder
Mervat Mohamed	PhD student	Primary and co-Mentor to doctoral students: Training period 2008	University of Brescia, Italy and Menoufiya University, Egypt "Health disorders among workers in a tobacco factory Menoufiya Governorate"	Professor in Industrial Medicine and Occupational Health Menoufiya University Egypt. Consultant for Occupational Health Ministry of Health, Saudi Arabia
Silvia Zoni	PhD student	Primary and co-Mentor to doctoral students: Training Period 2007-09	University of Bari, Italy "A methodology for the assessment of stress and psychosocial factors among healthcare workers"	Clinical neuropsychologist, Parma, Italy
Elisa Albini	PhD student	Primary and co-Mentor to doctoral students: Training Period 2007-09	University of Bari, Italy "Effects of manganese on the central nervous system",	Medical Director, Employee Health Service, Civil Hospital of Brescia, Italy
Maryse Bouchard	PhD student	Primary and co-Mentor to doctoral students: Training period 2005-2007	Université de Montréal, Quebec "Cohort Study on Neurobehavioral Function in workers 14 years after cessation of exposure to manganese"	Associate Professor, Department of Environmental and Occupational Health, Université de Montréal & CHU Sainte-Justine Chercheur-boursier IRSC/CIHR New Investigator, Montreal, Canada

## TEACHING ACTIVITIES

<u>Teaching Activity/Topic</u>	<u>Level</u>	<u>Role</u>	Indicate Level and Number of Learners <u>Taught</u> , and <u>Venue</u>	Number of hours <u>week/month/yr</u>	<u>Evaluation Summary</u>	<u>Years Taught</u>
<b>Advanced Summer International Training in Global Occupational/ Environmental Health</b>	<i>International Level- Medical School Course</i>	<i>Course Director</i>	<i>Undergraduate Students, Graduate Students, Medical Residents Fellows</i>	<i>20 contact hrs/wk (1 week every two years)</i>	Chulabhorn Research Institute, Bangkok, Thailand Summer School	2016-present
<b>Memorandum of Understanding for Education and Research between the University of Brescia and the Icahn School of Medicine, New York</b>		<i>Coordinator</i>			This collaboration agreement has yielded 10 exchange internships for medical residents, doctoral students and faculties including Occupational Medicine, Environmental Engineering, Cardiology, Hematology, Geriatrics, Radiology, Emergency critical care and Rehabilitation.	2013 – present
<b>History of Occupational Health</b>	<i>Institutional Level</i>	<i>Lecturer</i>	<i>1<sup>st</sup> Year Medical Students</i>	<i>10 contact hrs/yr</i>	Icahn School of Medicine course, New York, New York	2012-present
<b>Summer School on Global Occupational and Environmental Determinants of Disease</b>	<i>International Level</i>	<i>Course Director</i>	<i>Undergraduate Students, Graduate Students, Medical Residents, Fellows</i>	<i>10 contact hrs/wk</i>	University of Brescia, School of Medicine, Brescia, Italy	2008-present
<b>Occupational Medicine</b>	<i>International</i>	<i>Lecturer</i>	<i>2nd and 3rd year</i>	<i>20 contact</i>	University of Brescia, School of	2005 -

	<i>Level</i>		<i>medical students</i>	<i>hrs/semester</i>	Medicine, School of Occupational Safety, and School of Nursing, Brescia, Italy	present
<b>Biological Impacts of Chemical Exposure</b>	<i>National Level</i>	<i>Lecturer</i>	<i>Graduate Students, Fellows</i>	<i>30 contact hrs/yr</i>	University of California, Department of Microbiology and Environmental Toxicology, Santa Cruz, California	2005-present

## ADMINISTRATIVE LEADERSHIP APPOINTMENTS

### GENERAL ADMINISTRATION LEADERSHIP ACTIVITIES:

1. **Budget and resource management.** Plan and manage multiple grants, hire personnel, manage budget, service contracting, and periodical reporting for complex grants funded by:
  - a. National Institute of Occupational Safety and Health (NIOSH) World Trade Center Health Program (WTCHP) Data Center at Mount Sinai (\$53M from 2011-2016);
  - b. NIOSH WTCHP Clinical Center of Excellence at Mount Sinai (\$19M from 2011-2016);
  - c. NIOSH Education and Research Center for New York and New Jersey (\$ 6,037,314 from 2012 -2016)
  - d. New York State Department of Health for the NYS Occupational Health Clinic Network (\$13.5M from 2013-2018)
  - e. Clinical operation at the Selikoff Centers of Occupational Health located in Manhattan, Staten Island, Yonkers, Monroe (Overall income generated by Faculty Practice Associates in 2015 \$6,600,000
  - f. Acquired contracts with private companies and unions for clinical services including exposure assessment, health surveillance, screenings, and promotion of employee health and wellness in the NYC metropolitan area.
2. **Development, advancement and outreach.** Supervise communication and media regarding clinical and research activities, attend fundraising events and quarterly meetings in Albany, NY for Occupational Health clinic network. Organize quarterly meetings for advisory board for Selikoff centers in all New York boroughs, lower Hudson Valley and ERC for New York. Attend bi-annual Board of Directors of national NIOSH ERC centers in Washington DC. Solicit federal funding for education, research and training in occupational health and safety in Washington DC. Organize and participate in promotional activities for the World Trade Center health program and the Selikoff centers in Monroe, Staten Island and Yonkers N.Y. Routinely outreach for the World Trade Center Health Program and for the ERC program by meeting with senators and house representative of New York State. Successfully built and managed trade union relations by promoting health protection and improvement of safety policies, currently lobbying for improvements and reforms for the NYS Workers' Compensation Board.
3. **Faculty development.** Increased allocation for travel to professional conferences and training courses. Organize monthly seminars for visiting US and foreign professors. Collaborate with mentor junior faculty for poster presentations at national and international conferences. Coordinate grant submissions for junior faculty. Write letters of support for faculty applications for externals grants; provide hospital resources as appropriate to enhance those applications. Provide ongoing mentorship of junior postdoctoral candidates, researchers and junior faculty.
4. **Human Resource Management.** Oversee 240 employees of the Division, interview candidates and work with department chair to recruit qualified candidates including MD providers, industrial hygienists, ergonomists, epidemiologists, statisticians, data analysts, programmers, outreach and marketing staff. Review promotion cases and prepare recommendations. Conduct annual performance appraisals, renew contacts and annual appointments. Work with departments and human resource personnel to resolve personnel disputes. Respond to grievances, disciplinary actions, and legal issues. Provide conflict resolution. Prepare letters of support for awards for faculty and staff. Created and implemented new faculty and staff orientations and performance promotions.
5. **Communication and marketing.** Responsible for media communication regarding the World Trade Health Center Health Program, Occupational Health, and Workplace Health Promotion;

participated in numerous local, national and international print and television interviews pertaining to cancer, mortality and occupational health and safety issues. Contributed and participated in Italian news live broadcast of Pope Francis's visit to Ground Zero on October 24, 2015 and follow up visit to Vatican in November 2015 to seek support for the World Trade Center Program and other major disaster health and emergency preparation programs.

## PUBLICATIONS

### Submitted/in preparation

1. **Lucchini RG**, Guazzetti S, Renzetti S, Broberg K, Caci M, Covolo L, Crippa P, Gelatti U, Hashim D, Oppini M, Pepe F, Pilotto A, Passeri C, Placidi D, Rizzetti C, Turla M, Wahlberg K, Padovani A Metal exposure and SNCA rs356219 polymorphism are associated with parkinson disease and parkinsonism in the province of Brescia, Italy.
2. Clouston SAP, Deri Y, Horton M, Tang C, DeLorenzo C, Kritikos M, Diminich E, Pellecchia AC, Carr MA, Gandy S, Sano M, Bromet EJ, **Lucchini RG** & Luft BJ. Reduced cortical thickness in World Trade Center responders with cognitive impairment
3. Kritikos M, Clouston SAP, Vaska P, Huang C, Franceschi AM, Salerno M, Horton M, Tang C, Deri Y, Pellecchia A, Santiago-Michels S, Carr M, Sano M, Bromet EJ, **Lucchini RG**, Gandy S, Luft BJ. Neurodegeneration and abnormal retention of A $\beta$  or tau detecting positron emission tomography ligands in a case series study of World Trade Center responders with clinical neurocognitive and neurobehavioral symptoms. JAMA Neurology.
4. De la Hoz RE, Shapiro M, Nolan A, Celedón JC, **Lucchini RG**. Association of low FVC spirometric pattern with WTC occupational exposures. JAMA.
5. Bauer JA, Devick KL, Bobb JF, Coull BA, Bellinger D, Benedetti C, Cagna G, Fedrighi C, Guazzetti S, Oppini M, Placidi D, Webster TF, White RF, Yang Q, Zoni S, Wright RO, Smith DR, **Lucchini RG**, Henn BC. Associations of a mixture of manganese, lead, copper and chromium with adolescent cognition. Environmental Health Perspectives
6. Renzetti S, Alimonti A, Cagna G, Conversano Michele, Fedrighi C, Forte G, Giorgino A, Guazzetti S, Majorani C, Peli M, Petrucci F, Pino A, Placidi D, Senofonte O, Zoni S, **Lucchini RG**. Use of Weighted Quantile Sum Regression to Assess Neurological Impacts of Mixed Exposure in Children from Taranto, Italy.
7. Carver S, Placidi D, Bansal E, Renzetti R, Smith DR, Wright R, **Lucchini RG**. The Impact of Environmental Mediums on Internal Manganese Exposure of Preadolescents in an Industrialized Area of Northern Italy.
8. Ridolfi R, Gentilini P, Renzetti S, **Lucchini RG**. Traces of heavy metals in children toenails, as a bio-indicator of environmental exposure in Forlì, Italy: an observational study.
9. Peli M, Bostick BC, Barontini S, **Lucchini RG**, Ranzi R. Long-term stability of aerosol Mn contamination in soils near a steel mill in Bagnolo Mella (Brescia, IT) . Geoderma
10. Bostick BC, Smith DR, Peli M, Conversano M, Donna F, Mailloux B, Sosnowski A, Wright RO, **Lucchini RG**. Distribution and Reactivity of Manganese-Substituted Magnetites in Dusts from Taranto, Italy. Environmental Science & Technology.
11. Peli M, Quarta R, Bostick BC, Barontini S, **Lucchini RG**, Ranzi R, Heavy–metals enrichment of surface soils in a urban area historically influenced by a ferroalloy plant. Science of the total environment
12. Hsu HL, Papazaharias DM, Onyebeke LC, Freund A, Zuckerman N, Hashim D, **Lucchini RG**, Chiu, YM. Occupational Exposure to Diesel Exhaust in New York Metropolitan Area's Bus Drivers Environmental Science & Technology.
13. Onyebeke LC, Hsu HL, Papazaharias DM, Freund A, Zuckerman N, Hashim D, **Lucchini RG**, Chiu YM. Review of diesel exposure in transportation.
14. De La Hoz, Hashim D, R, Kwa W, Harari H, **Lucchini RG**. “Modern” Silicosis In New York City

## Peer Reviewed Original Contributions

1. de la Hoz RE, Shapiro M, Nolan A, Celedón JC, Szeinuk J, **Lucchini RG**. Association of low FVC spirometric pattern with WTC occupational exposures. *Respir Med* 2020 [in press]
2. Rechtman E, Curtin P, Onyebeke LC, Wang VX, Papazaharias DM, Hazeltine D, de Water E, Nabeel I, Mani V, Zuckerman N, **Lucchini RG**, Gaughan D, Tang CY, Horton MK. Respirator usage protects brain white matter from welding fume exposure: a pilot magnetic resonance imaging study of welders. *Neurotoxicology*. 2020 Mar 23. pii: S0161-813X(20)30050-4. doi: 10.1016/j.neuro.2020.03.008. [Epub ahead of print] PMID: [32217185](#)
3. Levin-Schwartz Y, Gennings C, Claus Henn B, Coull B, Placidi D, **Lucchini RG**, Smith D, Wright R. Multi-media Biomarkers: Integrating Information to Improve Lead Exposure Assessment. *Environ Res* 183, 109148, 2020 Jan 20. PMID: [32004829](#)
4. Lecca LI, Portoghese I, Mucci N, Galletta M, Meloni F, Pilia I, Marcias G, Fabbri D, Fostinelli J, **Lucchini RG**, Cocco P, Campagna M. Association between work-related stress and QT prolongation in male workers. *International Journal of Environmental Research and Public Health*. 16 (23) 2019 Nov 28 PMID: [31795277](#) PMCID: [PMC6926840](#)
5. Shapiro MZ, Wallenstein SR, Dasaro CR, **Lucchini RG**, Sacks HS, Teitelbaum SL, Thanik ES, Crane MA, Harrison DJ, Luft BJ, Moline JM, Udasin IG, Todd AC. Cancer in General Responders Participating in World Trade Center Health Programs, 2003-2013. *JNCI Cancer Spectrum*, <https://doi.org/10.1093/jncics/pkz090>. Accepted on October 30, 2019
6. Bover Manderski MT, Black K, Udasin IG, Giuliano AR, Steinberg MB, Ohman Strickland P, Black TM, Dasaro CR, Crane M, Harrison D, Moline J, Luft BJ, Passannante MR, **Lucchini RG**, Todd AC, Graber JM. Risk factors for head and neck cancer in the World Trade Center Health Program General Responder Cohort: results from a nested case-control study. *Occup Environ Med*. 2019 Nov;76(11):854-860. doi: 10.1136/oemed-2019-105890. Epub 2019 Sep 12. PMID: [31515248](#)
7. Graber JM, Harris G, Black K, **Lucchini RG**, Dasaro CR, Steinberg MB, Giuliano AR, Crane MA, Moline JM, Harrison DJ, Luft BJ, Todd AC, Udasin IG. Excess HPV-related head and neck cancer in the World Trade Center Health Program General Responder cohort. *Int J Cancer*. 2019 Sep 15;145(6):1504-1509. PMID: [30556136](#)
8. Broberg K, Taj T, Guazzetti S, Peli M, Cagna G, Pineda D, Placidi D, Wright RO, Smith DR, **Lucchini RG**, Wahlberg K. Manganese transporter genetics and sex modify the association between environmental manganese exposure and neurobehavioral outcomes in children. *Environ Int*. 2019 Sep;130:104908. PMID: [31233999](#). PMCID: [PMC6682429](#)
9. Butler L, Gennings C, Peli M, Borgese L, Placidi D, Zimmerman N, Hsu HL, Coull BA, Wright RO, Smith DR, **Lucchini RG**, Claus Henn B. Assessing the contributions of metals in environmental media to exposure biomarkers in a region of ferroalloy industry. *J Expo Sci Environ Epidemiol*. 2019 Sep;29(5):674-687. doi: 10.1038/s41370-018-0081-6. PMID: [30337680](#), PMCID: [PMC6472994](#)
10. de Water E, Papazaharias DM, Ambrosi C, Mascaro L, Iannilli E, Gasparotti R, **Lucchini RG**, Austin C, Arora M, Tang CY, Smith DR, Wright RO, Horton MK. Early-life dentine manganese concentrations and intrinsic functional brain connectivity in adolescents: A pilot study. *PLoS One*. 2019 Aug 14;14(8):e0220790. doi: 10.1371/journal.pone.0220790. PMID: [31412061](#) PMCID: [PMC6693851](#)
11. **Lucchini RG**, Guazzetti S, Renzetti S, Conversano M, Cagna G, Fedrighi C, Giorgino A, Peli M, Placidi D, Zoni S, Forte G, Majorani C, Pino A, Senofonte O, Petrucci F, Alimonti A. Neurocognitive impact of metal exposure and social stressors among schoolchildren in Taranto, Italy. *Environ Health*. 2019 Jul 19;18(1):67 PMID: [31324194](#) PMCID: [PMC6642538](#)

12. Bansal E, Placidi D, Carver S, Renzetti S, Giorgino A, Cagna G, Zoni S, Fedrighi C, Montemurro M, Oppini M, Conversano M, Guazzetti S, Wright RO, Smith D, Claudio L, **Lucchini RG**. Metabolic Outcomes in Southern Italian Preadolescents Residing Near an Industrial Complex: The Role of Residential Location and Socioeconomic Status. *Int J Environ Res Public Health*. 2019 Jun 8;16(11). PMID:[31181712](#) PMCID:[PMC6603983](#)
13. Wahlberg KE, Guazzetti S, Pineda D, Larsson SC, Fedrighi C, Cagna G, Zoni S, Placidi D, Wright RO, Smith DR, **Lucchini RG** and Broberg K. Polymorphisms in Manganese Transporters SLC30A10 and SLC39A8 Are Associated With Children's Neurodevelopment by Influencing Manganese Homeostasis. *Front. Genet.*, 20 December 2018 | PMID:[30619481](#) PMCID:[PMC6307466](#)
14. Belligotti E, Mascaro L, Ambrosi C, Pinardi C, Reali M, **Lucchini R**, Tang CY, Gasparotti R. 245. A protocol set-up for fast brain T1 mapping of subcortical tissues. *Physica Medica: European Journal of Medical Physics* 2018, Volume 56 , 213
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**THE FLORIDA INTERNATIONAL UNIVERSITY**  
**BOARD OF TRUSTEES**  
**Academic Policy and Student Affairs Committee**  
September 9, 2020

**Subject: 2021-2022 Legislative Budget Requests**

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**Proposed Committee Action:**

Recommend to The Florida International University Board of Trustees approval of the 2021-2022 Legislative Budget Requests:

- SMART Pipeline: Strengthening Minority Achievement & Results through Teaching Request: \$4,998,664
  - Program of Distinction in Environmental Resilience Request: \$15,150,000
- 

**Background Information:**

Pursuant to Section 7, Article 9 of the Florida Constitution, the Board "...shall operate, regulate, control, and be fully responsible for the management of the whole university system." Included within this responsibility is the development of a Legislative Budget Request (LBR). In addition, Section 216.023(1), Florida Statutes, requires the submission of a LBR to the Legislature and Governor based on an independent judgment of needs.

The LBR is an assessment of needs developed by the Florida Board of Governors in cooperation with the universities. The Florida Board of Governors requires that all State University System institutions submit their institutional LBR request for review and approval.

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**Supporting Documentation:** 2021-2022 Legislative Budget Requests

**Facilitator/Presenter:** Kenneth G. Furton

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**State University System  
Education and General  
2021-2022 Legislative Budget Request  
Form I**

<b>University(s):</b>	<b>Florida International University</b>
<b>Request Title:</b>	<b>FIU SMART Pipeline: Strengthening Minority Achievement &amp; Results through Teaching</b>
<b>Date Request Approved by University Board of Trustees:</b>	<b>Expected September 2020</b>
<b>Recurring Funds Requested:</b>	<b>\$3,898,664</b>
<b>Non-Recurring Funds Requested:</b>	<b>\$1,100,000</b>
<b>Total Funds Requested:</b>	<b>\$4,998,664</b>
<b>Please check the request type below:</b>	
<b>Shared Services/System-Wide Request</b>	<input type="checkbox"/>
<b>Unique Request</b>	<input checked="" type="checkbox"/>

- I. Description** – 1. Describe the service or program to be provided and how this issue aligns with the goals and objectives of the strategic priorities and the 2020 University Accountability Plan established by your institution (include whether this is a new or expanded service/program). If expanded, what has been accomplished with the current service/program? 2. Describe any projected impact on academic programs, student enrollments, and student services. University of Distinction proposals should also address the requirements outlined in the separate guidance document.

**Program Overview**

FIU's **FIU SMART Pipeline: Strengthening Minority Achievement & Results through Teaching** will transform and reengineer STEM programs and courses to optimize the retention, graduation, marketability, career creation and placement of science, mathematics, engineering, and computer science students—thereby launching a new STEM paradigm. The Initiative will 1) integrate best program-of-study practices and deploy state of the art evidence-based instruction and advanced classroom assessment throughout critical STEM courses for all STEM majors; 2) implement interventions that promote mental health and wellness, especially for first generation and millennial students; 3) further develop the recently established School of Universal Computing, Construction, and Engineering Education (SUCCEED) to propagate best practices, assess and provide critical feedback to stakeholders; and 4) leverage these initiatives to catalyze

external investment and promote national prominence. The overarching goal is to drive greater efficiencies through shared system resources.

The State's economic prosperity is the impetus for this paradigm shift. It drives us to optimize the development, retention and ultimate graduation of future engineers, computer scientists, mathematicians, and scientists, as they will play an essential role in the knowledge economy. STEM professionals, including computer scientists and engineers, are at the cutting edge of next wave technological innovations and imperatives that are changing the economic model of our nation and the world, including the internet of things, blockchains, cyber security, and virtual markets. This proposal integrates FIU's two most impactful student success initiatives: the Graduation Success Initiative (GSI) and the STEM Transformation Institute, and leverages past legislative investments to create a new paradigm for programs of study, classroom instruction, student wellness and ultimately student success. We think about student success, not as we know it today but, as an expanded construct that prepares students for a technologically driven world that continues to evolve at an unprecedented pace. By improving and expanding specific hybrid and online offerings as well as authentic integration of technologies into the classroom. This Initiative will also allow FIU to fully engage all students in a modern, urban university education.

This Initiative leverages prior funding and support for STEM and expands on targets transforming student success and graduation rates through optimizing programs, classrooms, and experiences for STEM students to foster development of 21<sup>st</sup> century skills necessary in a knowledge-driven economy. Research and assessment of student learning outcomes resulting from the transformations are a core innovation that provides continuous feedback on the initiative, as well as spur expansion across FIU and propagation across Florida's universities and colleges. The Initiative's ultimate goal is to be a sustained producer of a highly skilled and highly adaptable workforce that will serve as a launch pad for innovation and startups as well as attract high-tech companies to South Florida.

The Initiative capitalizes on the opportunities afforded by the breadth of effective evidence-based instructional techniques, wide availability of technological devices that can be utilized for learning, and FIU's established expertise in preparing faculty to implement evidence-based instruction in their classrooms. Effective active learning techniques are well established and understood, yet propagation of these techniques across the STEM courses taken by future engineers is often limited to faculty with expertise in evidence-based instruction. Faculty often teach as they were taught in college, using lectures as the primary method; thus, the barrier to innovative instruction is sufficient, effective professional development. FIU has established interventions with prior funding and has validated this renewed, affirmed approach with an emphasis on Gateway (high enrollment and high dropout) courses for all students.

The Initiative provides critical resources that makes it possible to work across all disciplines to change the landscape and prevent a return to status quo. The focus is on disrupting the current system to establish a change in culture that features evidence-based instruction and data-driven decision making in order to optimize time and financial resources. Thus, parallel elements seek to provide resources to change the physical layout of rooms, develop faculty practices, and establish a team of experts that lead instruction

change and carry out research that enables the data-driven decision making. Changing systems require time for the students, faculty and support structures to adapt to the new paradigm. To date, 70% of faculty teaching the gateway courses (as well as roughly 25% of non-gateway STEM faculty) have been engaged in transforming their courses to active learning modalities. This initiative targets those faculty that have not transformed their practices to date.

The approach has already enabled the launch of pilot projects that garner other external funding and amplifies the initiatives impact (for example the \$1.5M NSF HSI Program to transform calculus instruction, noted below). FIU provides instruction for roughly 1% of the nation's 300,000 calculus 1 students, and 3.8% of the nation's Hispanic students taking Calculus 1). Additionally, it allows us to scale-up successful pilots to positively impact all students by providing faculty professional development and course material creation (such as with the current PreCalculus Pathway instruction initiative, noted below). FIU has the momentum to create, expand and maintain innovative instructional strategies that are impacting student success. State support is key to make these changes permanent and establish a new norm for the system.

#### **Highlights of Current Investments: Active Learning Classrooms**

- 18 active learning classrooms renovated to date with support of state funding, ranging from 40 - 270 seats (total 1,485 seats), the 270-seat active learning classroom is likely the largest in the nation.
- Utilization: Fall 2019: 14,022 student enrollments across 257 sections of 166 courses / Spring 2020: 12,921 student enrollments across 269 sections of 156 courses, roughly half of the sections are for STEM courses. Over 200 faculty are utilizing the active rooms each semester.

#### **Learning Assistants impact:**

- Mature course transformations that integrate LAs reliably lead to 15-25%, and up to 40% increases in pass rates.
- Learning Assistants are undergraduates who facilitate the learning of their peers in the classroom. The impact is profound, as LAs are near peers that recently succeeded in the classroom and are best able to help their peers while becoming leaders themselves.
- State funding has led to a rapid expansion of the LA Program. In Spring 2020, there were 420 LA assignments in over 60 courses, working with over 70 instructors. LAs impacted roughly 14,000 student enrollments.
- LA Program partnered with CAPS (Counseling and Psychological Services) to develop a Bystander Training to better identify students that may be struggling or in difficult situations and would benefit from campus mental health resources. The Bystander Training has been integrated into the LA Seminar that all new LAs enroll in. Expansion of the program is in development.

#### **Increase in STEM course Passing Rates:**

- In the last 6 full academic years, changes in instruction and increases in pass rates has led to an additional 16,000 students passing 21 key Gateway and STEM courses.
- Expanded implementation of a novel, evidence-based General Chemistry curriculum (Chemistry, Life, the Universe and Everything, CLUE) that has led to increased student success (15-20% when compared to traditional instruction) and reduced textbook costs (Free textbook and low cost web-based materials).

- Introductory Physics sections utilizing Modeling Instruction see 40% increases in pass rate when compared to traditional instruction, instructional materials provided free of charge and utilize free online textbooks as reference.
- Calculus: Modeling Practices of Calculus Project (started on FIU funds, secured \$1.5M NSF funding): Finds a 20% average increase in pass rates over several semesters, \$200/course textbook savings, as all course materials are provided at no charge and students may use free online textbooks as reference materials. Department is adopting the curriculum across all sections. At least 4 FCS schools have used / will use the curriculum in Fall 2020
- MAC 1147/ Pre-Calculus Algebra and Trigonometry: The *Precalculus: Pathways to Calculus* research-based problem-solving curriculum. Included restructuring and redesigning post College Algebra sequence from two semesters (one semester of Precalculus Algebra plus one semester Trigonometry) to one semester, reducing course sequence to Calculus by one course. Aggregate pass rates from Fall 18 through Summer 19 were 70%.
- MAC 1105 / College Algebra: Improved web-based modules as well as adaptive, just-in-time pre-requisite assessments to integrate Intermediate Algebra content throughout College Algebra thereby reducing path to graduation for STEM and business majors. Pass rates increased in College Algebra to all-time-high of 73%.

The core classroom design features active, engaged learning where students utilize the practices of scientists and engineers to learn their content. Thus, soft skills essential for careers are developed simultaneously with their content learning. This also optimizes major selection, as learning through the practices of scientists and engineers allows students to evaluate their interest in their selected discipline so they may make informed decisions about careers and have the opportunity to change majors without incurring adding excess credit to their degrees or delaying graduation

Specific objectives include:

- Transform introductory science and mathematics courses and prioritize re-design of the Precalculus through Calculus sequence: Building on the established success of transforming Gateway STEM courses, this objective will improve the instruction of science and mathematics courses taken by all STEM majors. This explicitly targets advancing the current pilot interventions reforming Precalculus and Calculus, scaling effective instruction across the complete Calculus sequence. Calculus has a reputation of serving as barrier for future STEM professionals; however, success in pilot Precalculus and Calculus interventions show sufficient promise that a dedicated effort is included in this initiative. Pilot results include improvement in average pass rates by up to 25% in a randomized, controlled study involving 10 sections. Once established, practices and curricular materials will be shared across the State colleges and universities to foster greater efficiencies through shared system resources.
- Implement interventions that promote mental health, especially for first generation and millennial students: Student mental health is a concern for those transitioning to a university, especially for first generation, urban and millennial STEM students as they need to navigate a complex educational system efficiently, often while working or supporting a family. Our current initiatives (active learning instruction featuring undergraduate Learning Assistants) foster peer learning communities that support positive mental health; however, much more

can be done to improve student acclimatization to the university experience. Thus, this objective will implement interventions that have shown to improve student wellness and timely persistence to degrees. These interventions have been selected to act in concert with the classroom environments promoting mental health, as we know that the stressors on these high-impact educational opportunities and career trajectories plays a critical role in students' ability to complete and succeed. Initial interventions focused on developing contemplative practices in the classroom show positive responses from students. We will investigate which interventions are most effective for our student population, guided by Yeager (2019)'s research on growth mindsets and self-regulation, Walton and Cohen (2007)'s research on belonging and Davidson (2014)'s research on healthy minds. We will prepare faculty, administrators and undergraduate Learning Assistants (LAs) to support mental health and recognize early indicators of concern.

- **Classroom Renovation:** Existing traditional classrooms will be renovated to facilitate active learning using state of the art facilities. FIU is transitioning to active-learning, technology-driven classrooms to promote student engagement of content during class time and dissuading the use of lecture by faculty. New classrooms are now routinely built as active learning classrooms with access prioritized for faculty utilizing active learning and thus incentivizing the best instructional practices. Newly opened active learning classrooms averaged over 80% utilization by active STEM courses, with the remaining 20% of utilization done by other courses. However, requests for the active learning rooms persistently outpace availability and thus the need for additional active learning capacity and have included support for these classroom renovations. We include funding for one-time retrofit of at least 10 of our more outdated traditional classrooms that do not have the design or technological infrastructure that is required by state-of-the-art instructional design. Establish faculty "sand box" for developing instructional practices before deploying across large active learning rooms. Creating a stepwise process allows for faculty to become familiar with the curriculum and implement it with fidelity, before introducing additional variables related to class management in larger settings.
- **Further develop the School of Universal Computing, Construction, and Engineering Education (SUCCEED):** This objective will further develop the first engineering education research school at a majority minority research university, following best practices by national leaders in engineering education (Purdue University, Virginia Tech University, Ohio State University, etc.). Engineering education research is an emergent multidisciplinary field that targets advancing educational practices and research on those practices in order to serve the nation in an economy that persistently relies on engineering, technology and computer science-skilled workforce. Highly-skilled Discipline-based Education Research faculty will provide a continuous improvement cycle on campus as well as spread the knowledge generated throughout the State University System (SUS) and Florida College System (FCS). Further, the faculty in the program will leverage external support from numerous public and private agencies seeking to transform the engineering and computer science educational landscape.
- **Expand CAT and STEM Faculty Fellows program:** This objective will harness the expertise of faculty that have transformed their courses into highly effective

active learning environments and position them as Faculty Fellows to share their expertise with colleagues and accelerate institutional transformation. A pilot program was successfully deployed by the Center for the Advancement of Teaching (CAT) with a small cohort of Faculty Fellows including opportunities for building faculty community and leading faculty professional development initiatives. Faculty communities are known to be an essential tool for fomenting faculty change. This model has the dual objective of developing institutional leaders in innovative instruction while utilizing their expertise to expand the use of active learning practices to new faculty. We will have 10 Faculty Fellows fulfill a one-year term with either CAT or the STEM Transformation Institute. Their roles will include co-leading workshops or book clubs, facilitating faculty learning communities, conducting observations in classrooms to provide feedback to colleagues, and providing recommendations for institutional policies or initiatives. Additionally, Fellows will design a data intensive mini-project to evaluate student success in a particular course or discipline. We will provide course buyouts to allow sufficient time for this role, as well as stipends to compensate their efforts.

To achieve these objectives, specific commitments include:

- Create Education Research team through Discipline-based Education Research (DBER) faculty hires: 10 DBER highly-skilled faculty will be supported through this initiative, providing leadership in implementation and measurement of evidence-based instruction and learning technologies. These faculty will serve as leaders of STEM education research to establish a culture of student learning and progression that will drive the 4-year degree completion agenda, and students' marketability and career creation and placement. They join our current DBER team that consists of top DBER scholars in biology, chemistry, earth science, mathematics, and physics, as well as engineering and computer science education researchers. New hires will target established leaders in their disciplines as well as top junior candidates.
- Operate STEM Faculty Institute: We will operate a Faculty Institute to prepare current and incoming faculty to implement evidence-based instruction in their STEM classrooms. The Institute will operate year-round to provide professional development to faculty prior to and during instruction. The Institute will incorporate analysis of instructional data as well as provide further professional development to extend the course innovation based on evidence. The Institute includes dedicated Online and Hybrid master design programs for faculty. Incoming faculty will be encouraged to arrive in summer to participate, allowing them to be successful from day one. Integrated into the design is establishment of the Center for Advancement of Teaching STEM Faculty Fellows program that will leverage faculty expertise in evidence-based instruction to facilitate faculty adoption of instructional change.
- Provide 300 Learning Assistant Stipends to top FIU students: Undergraduate Learning Assistants (LAs) have been critical catalysts in transformation of STEM courses at FIU, as they facilitate learning with their peers while deepening their own understanding of content and collaboration. LAs improve the success of students in transformed courses, increasing retention and completion. These prestigious scholarships will elevate the LA program, improve success of faculty



- course transformations, and expand the LA program beyond the STEM disciplines. LAs also experience improved learning as a result of the experience, thereby serving to improve Florida's workforce. Learning Assistants (LAs) are undergraduates who are hired to facilitate small-group interaction in large-enrollment courses. LAs work ~10 hours per week in various aspects of course transformation. This also supports our students who economically may need to work for supplemental income – they are employed, while on campus and therefore still able to maintain full time enrollment and timely graduation.
- Award 10 DBER Graduate Fellowships: A prestigious graduate student research fellowship program will be created to develop skills as both future university educators and researchers. These Discipline-based Education Graduate Researchers (DBER) will work with the DBER faculty to implement and provide data on student impact and improved faculty instruction. Eligible students will be required to submit National Science Foundation Graduate Research Fellowship applications to support their continued studies.
  - Hire 3 Post-doctoral education researchers: The researchers will assess impact of the innovative instructional strategies through student learning outcomes and classroom observations, while extending their training as future university educators and researchers. Their work will be incorporated into the continuous improvement feedback loop. All post-docs will be required to develop at least one external funding proposal.
  - Hire 6 Staff for program operations: One LA Program Assistant Director will be hired to manage the LA program and prepare faculty to effectively integrate LAs into their active classrooms, working with faculty and undergraduate LAs. Two Faculty Developers for STEM courses with expertise in education transformation and in the discipline will be hired to prepare faculty to implement Learning Technologies and Evidence-based Instruction in their classroom. The Developers will provide year-round support and feedback. One Database Analyst will be hired to carry out statistical analyses on the project as well as develop data analytics dashboards for STEM stakeholders. The project will be managed by a program manager and an administrative assistant to support the faculty and staff team members as well as LAs and graduate fellows.
  - Classroom Renovations: Existing traditional classrooms will be renovated to facilitate active learning in STEM classrooms using state of the art facilities. New classrooms are now routinely built as active learning classrooms with access prioritized for faculty utilizing active learning, thus incentivizing the best instructional practices. The recently opened active learning classroom with 270 seats averaged over 85% by large active STEM courses. This utilization rate is typical of all of our active learning classrooms on campus. However, requests for the active learning rooms persistently outpace availability. Further our hybrid course redesign relies on active learning rooms to be effective, thereby increasing need each year. We include funding for one-time retrofit of ten of our more outdated classrooms that do not have the design and technological infrastructure that is required by state-of-the-art teaching and learning classrooms. These retrofits will include several rooms designed as “sand boxes” for faculty develop and test new innovative instructional practices.

## **Related Accomplishments**

The Initiative builds on the success of multiple projects that have brought significant change to the university and that have become integrated into university practices and culture. FIU's STEM interventions began in physics, expanded into multiple STEM disciplines, and are now being led through the STEM Transformation Institute. Evidence of success in the reformed introductory physics courses includes significantly improved conceptual learning, the first reported increase in student attitudes towards physics, and a sustained 40% increase in the passing rate, when compared to traditional courses, realized by a dozen different faculty teaching the course. This has led to a dramatic increase in the number of physics majors and national recognition for FIU's success.

FIU is focused on raising its 4-year graduation rate and successfully increased this from 28.4% in 2016 to 42.6% in 2019. We build our efforts on the foundational success of our Graduation Success Initiative (GSI) and Gateway Project. FIU's GSI has helped raise the six-year graduation rate for First Time in College students (FTICs) by 16 points in its first four years. During the past three years of LBR funding, we have seen a 10.6 percent improvement in our four-year graduation rate, a 6 percent increase in the second-year retention rate, and a 3.9 percent increase in the issuing of bachelor's degrees without excess hours. Institutional analytics determined that poorly performing gateway courses are a significant barrier in students' path to timely graduation, leading to the Gateway Project.

The first major success in the Gateway Course initiative was the comprehensive transformation of the College Algebra course that included Learning Assistants and innovative technology-based instruction, leading to a sustained 35-40% increase in passing rates for all students. Improvements in the pass rate for the College Algebra course has saved over 3,500 seats between fall 2012 and fall 2018 (compared to fall 2010 baseline). These improvements significantly improve efficiency through direct cost savings to our students as well as reducing excess hours and thus improving timely graduation. In AY 2016 – 2017, the legislative investments for course redesign of Finite Mathematics and Social Choice Math, Gateway course taken by non-STEM majors, resulting in consistency in content and expectations across sections and increases in average pass rates (+12% and +16% respectively). With well over 3,000 students enrolled in these three courses each semester, the impact is significant. Looking across our Gateway courses in mathematics, when compared to 2013-14 passing rates, improvements have resulted in more than 8,000 additional successful course completions.

Funding support of prior smaller-scale initiatives has led to a core of interventions, which has begun to lay the foundational framework for STEM at FIU. At the core of both the STEM and Gateway initiatives are interventions that 1) adapt evidence-based instructional practices to the FIU context; 2) require faculty engaging students in meaningful, active learning in the classroom; 3) are initiated by external grant or foundation funding; and 4) engage undergraduates, faculty, and administration as partners in the transformation.

One powerful and cost-effective approach is the undergraduate Learning Assistant (LA) program, which provides undergraduates with the opportunity to experience the reward of teaching, develop skills to engage in the challenges of effective instruction, and deepen their content knowledge. At the same time, they serve a critical role as dedicated and

skilled facilitators in the classroom, thus easing the transition for both students and faculty to active learning. FIU hosts the nation's largest LA program, with 318 LAs serving in 130 course sections across 14 STEM departments, impacting over 12,000 student enrollments in Spring 2019 (enrollment includes duplicated headcount as students may have LAs in more than one course). Lessons learned in these initiatives are spreading to other courses, where pilot projects have seen an average increase in passing rates of 18% across 7 courses (two of which increased over 25%), which will translate to improved graduation rates in the coming years. Further, enrollment in one transformed course more than quadrupled over the past several years, doubling in annual offering as well as enrollment. On-time graduation rates have also increased 16% in four years.

The Initiative's ultimate goal is to attract high technology companies to Florida, as well as fuel entrepreneurial innovation, thus driving the economic prosperity of the state. This will be achieved both through the reputation earned by our engineering and computer science graduates as well as through the evidence on student learning outcomes accumulated through the initiative.

Further practices, curricula, and evidence generated by this initiative will be shared with all SUS and FCS institutions, allowing them to adopt and adapt practices for their use, fostering greater efficiencies through shared system resources. This provides the opportunity to position Florida as the first State in the nation to implement evidence-based instruction and learning technologies throughout the engineering and computer science programs.

#### **Alignment with SUS Strategic Priorities / 2020 FIU University Accountability Plan**

The Initiative is very well aligned with the goals of the SUS 2025 System Strategic Plan (including *Improve the quality and relevance of the System's institutions* and *Increase Degree Productivity and Program Efficiency*) as well as the SUS Strategic Priorities in Teaching & Learning; Scholarship, Research & Innovation; and Community & Business Engagement. First, it will increase the number of degrees awarded at FIU, especially in the STEM fields, as well as the quality of those degrees by transforming instructional practices. Second, it will increase research commercialization activities through providing a workforce well-prepared for driving a knowledge economy and triggering start-up companies. Further, the program and classroom transformation and education research outcomes have the potential to lead to commercialization. Third, it directly increases the community and business workforce, as our graduates will be well prepared to be fully employed in their disciplines upon graduation or to seek further educational opportunities.

The initiative immediately addresses the SUS Strategic Priorities, including:

- ***Strategic Priorities for a Knowledge Economy: GOAL: Increase the Number of Degrees Awarded in STEM/Health and Other Programs of Strategic Emphasis*** *Increase student access and success in degree programs in the STEM/Health fields and other Programs of Strategic Emphasis that respond to existing, evolving, and emerging critical needs and opportunities.* This directly addresses improving both the quantity and quality of not only Engineering and Computer Science degrees but all other STEM degrees as improvements to

- foundation courses, such as the calculus sequence, that will benefit all STEM majors.
- **Strategic Priorities for a Knowledge Economy GOAL: Increase Research Commercialization Activities:** *Increase the number of patents, licenses and start-up companies created as a result of university research.* The initiative develops students' inquiry, collaboration and out-of-the-box thinking skills, thus providing them the opportunity to make authentic and significant contributions to the knowledge economy. Furthermore, improvements throughout the engineering and computer science programs will serve to produce more innovative and fully-developed senior research projects increasing the likelihood of successful patents, licenses, and start-ups.
  - **Strategic Priorities for a Knowledge Economy: GOAL: Increase Community and Business Workforce** *Increase the percentage of graduates who continue their education or are employed full-time.* The project optimizes the preparation of Engineering and Computer Science STEM majors, so they may either continue their education or rapidly enter the workforce.

The initiative immediately addresses FIU's 2020 Accountability Plan goals and objectives, including:

- Mission: Provides *high-quality teaching and state-of-the-art-research* for our students and diverse population of South Florida.
- Goal: Aligned to becoming top 50 public university: *FIU will continue to advance the institution's mission to be a top 50 public university by placing laser-like focus on aligning FIU's entire academic culture, resource investments, institutional priorities, and global perspective to achieve unprecedented excellence in higher education.*
- Strategy: Bringing the best educational and research practices is essential in FIU's as a *major contributor to our local economy and graduates the future leaders and innovators in those fields.*
- Strategy: Developing new paradigms of evidence-based instruction now are essential for the future, as *the demand for jobs is nearly insatiable. The Florida Chamber Foundation Florida 2030 Project estimates that 1.7 million more jobs will be needed in the state within 11 years. In part the project calls for a renewed focus on talent supply and education to help the state prepare for this growth.*
- Key Initiatives & Investments 1) **Amplify Learner Success & Institutional Affinity:** *Directly impacts FIU's commitment to student success is intricately tied to a greater sense of institutional affinity, individual grit, a well-nurtured sense of belonging, and optimism towards the future. Thus, this initiative drives FIU's first key initiative is therefore designed to deliberately support learners at every phase of their academic journey. FIU is well positioned to shift the higher education paradigm to meet the needs of the rapidly changing world of work by building upon our unique strengths and opportunities. To this end, we will continue to create and implement high-tech and high-touch innovative solutions that accelerate our students' academic and career success. Our focus is to foster 21st century, employment-ready, proud FIU graduates, who are technologically, creatively, and culturally agile. At the same time, we are committed to creating an*

*environment that stimulates lifelong learning and builds synergistic networks, which dynamically and organically connect our students, teachers, researchers, alumni, community partners, and entrepreneurs.*

- Key Initiatives & Investments 2) **Accelerate Preeminence & Research and Innovation Impact Preeminent Programs**; The STEM Transformation Institute, leading the initiative, is one of six Preeminent Programs. This initiative directly impacts FIU's *second key initiative is designed to advance our current academic standing by leveraging FIU preeminent and emerging preeminent programs that focus on generating new knowledge and innovative solutions for the betterment of our environment, health, and society. This will drive our visibility to solidify FIU as a leading urban public research university. To achieve this, we will strive to attract and retain the most productive faculty, while cultivating leaders and nurturing all students, postdocs, researchers, and staff to excel. During the next three years, we will focus on optimizing interdisciplinary collaboration through our Preeminent and Emerging Preeminent programs to seek large center research grants, and grants that focus on technological innovation, as well as on graduate student training... Our aim is for FIU to be the **catalyst** to foster social innovation and entrepreneurship from conceptualization to commercialization.*
- Key Initiatives & Investments 3) **Assure Responsible Stewardship**: Aligns with optimizing resource management: *consistently practice sound financial management while aligning resources with academic priorities that sustain knowledge production, optimize learning, discovery and creativity, and promote a positive working environment.*
- Top Three Performance-based Funding Metric Impacts through this Initiative:
  - (4) FTIC Four-Year Graduation Rate
  - (5) Academic Progress Rate
  - (6) Percentage of Bachelor's Degrees Awarded within Programs of Strategic Emphasis
- Top Three Preeminent Research University Funding Metric Impacts through this Initiative:
  - (3) Freshman Retention Rate
  - (4) Four-year Graduation Rate
  - (6) Science & Engineering Research Expenditures

### **Impact on Academic Programs, Student Enrollments, Student Services**

Every STEM student at FIU will benefit from the implementation through new and improved first-year STEM programming, implementation of evidenced-based practices in STEM coursework, and mental health interventions. The culture of teaching and learning in Engineering and Computer Science and all STEM departments will likewise be transformed, toward evidence-based and data-informed improvement. These transformations will reduce individual course failure rates by at least 30% within two years of implementation, leading towards an overall goal of an additional 15% increase in graduation rates. This goal is aligned with the standard of excellence as established by the

SUS Performance Funding Metrics. As was the case in physics, we anticipate increases in the number of Engineering and Computer Science majors.

**II. Return on Investment** - *Describe the outcome(s) anticipated, dashboard indicator(s) to be improved, or return on investment. Be specific. For example, if this issue focuses on improving retention rates, indicate the current retention rate and the expected increase in the retention rate. Similarly, if the issue focuses on expanding access to academic programs or student services, indicate the current and expected outcomes. University of Distinction proposals should also address the requirements outlined in the separate guidance document.*

The Initiative leverages existing commitments to education transformation and a national climate devoted to classroom education reform. It will increase research capacity and funding opportunities that will lead to increased grant funding, improved student performance, and national recognition. Further, it will stimulate adoption of similar instructional innovation at universities and colleges across the state. The initiative explicitly targets: revitalizing the first-year engineering and computer science programs, preparing faculty to implement innovative instruction in the STEM classrooms, gathering and analyzing classroom data, and disseminating the classroom transformation model for the state. These actions will lead to improved student learning and success in STEM courses that will lead to improved retention, graduation rates, and employment.

The intensive Faculty Institute will provide professional development to least twenty additional faculty annually in integrating evidence-based instruction, cutting edge assessment, and learning technologies in their classrooms, as well as develop instructional leadership in at least 10 Faculty Fellows. This will directly impact approximately 12,000 student enrollments annually, and they will continue to impact similar student enrollments in later years. All STEM students will enroll in at least one of the newly renovated courses within one year of the initiative's launch.

Student mental health/wellness interventions will be expanded in the first semester after initiative launch and impact at least half of the entering STEM students and measures on the impact will be determined over the next two semesters. Within three years, all entering STEM students will have the opportunity to benefit from the interventions.

The model for faculty professional development will be established through research on faculty practices and student impact. It is anticipated that this will lead to the DBER faculty producing at least 80 scholarly products (publications and presentations) annually in the first three years, growing to at least 120 within five years. We also expect all new DBER faculty to attract external funding to the institution within 18 months of hire. All of our recent DBER faculty hires attracted external funding within six months to one year of arrival; almost all have already been awarded more than one grant. These include Dr. Monique Ross' awards of \$1.2M, Dr. Alexandra Strong's awards of \$1M, Dr. Trina Fletcher's awards of \$614K and Dr. Bruk Berhane's awards of \$565K.

The initiative will also drive improved student learning and success in the courses, leading to improved retention and graduation rates. Student learning outcomes are a key

driver to sustained transformative instruction (as well as a critical feedback loop element) and will be reported through the scholarly products. Based on prior FIU initiatives and national trends in active learning, we expect a 30 - 40% decrease in failure rates in large enrollment introductory courses within four semesters of implementing evidence-based instruction. For the courses with failure rates of 20 - 40%, this translates to an 8 -16% decrease in failure rate. We expect this to increase an additional 10% within three years and be sustained for at least a decade. We base this on prior work at FIU and active learning literature. At FIU, College Algebra passing rates increased by 25% after evidence-based instruction was introduced across all sections in Fall 2012, then rising to the current 40% increase in average pass rate (compared to the fall 2010 baseline). We have also seen a 70% decrease in failure rates in our studio-based introductory physics courses, compared to lecture courses. A 2014 Proceedings of the National Academies of Science publication found an average 35.5% decrease in reported failure rates when comparing active learning in all STEM disciplines to lecture courses ([www.pnas.org/cgi/doi/10.1073/pnas.1319030111](http://www.pnas.org/cgi/doi/10.1073/pnas.1319030111)).

We will transform the education experience for FIU's 12,000 science, mathematics, engineering and computer science majors, over 80% of which are from traditionally underrepresented minority groups and 25% of which are first generation students.

Ultimately, this initiative drives economic development by substantially improving learning and skill development for our students, as well as enhancing efficiency in degree attainment. Our graduates will be well prepared to tackle existing, evolving, and emerging critical needs and opportunities in the global society and technology driven marketplace. They will be the innovators, entrepreneurs, and start-up leaders of the future. Their reputation for solving global challenges will attract the top technology companies to South Florida. Thus, FIU will be *the* reliable catalyst for South Florida's highly skilled and diverse engineering and computer science workforce.

**III. Facilities** *(If this issue requires an expansion or construction of a facility, please complete the following table.):*

	Facility Project Title	Fiscal Year	Amount Requested	Priority Number
1.	Active Learning Room Renovations	2021/22	\$900,000	
2.	Faculty "Sand Box" Classroom	2021/22	\$200,000	

**2020-2021 Legislative Budget Request**  
**Education and General**  
**Position and Fiscal Summary**  
**Operating Budget Form II**  
(to be completed for each issue)

**University:** Florida International University

**Issue Title:** FIU SMART Pipeline:  
Strengthening Minority  
Achievement & Results  
through Teaching

	NON- RECURRING	RECURRING	TOTAL
<hr/>			
<u>Positions</u>			
Faculty	10.00	0.00	10.00
Other (A&P/USPS)	9.00	0.00	9.00
	-----	-----	-----
Total	19.00	0.00	19.00
	=====	=====	=====
 <u>Salary Rate (for all positions noted above)</u>			
Faculty	\$1,225,641	\$0	\$1,225,641
Other (A&P/USPS)	\$552,500	\$0	\$552,500
	-----	-----	-----
Total	\$1,778,141	\$0	\$1,778,141
	=====	=====	=====
Salaries and Benefits	\$2,378,641	\$0	\$2,378,641
Other Personal Services	\$1,345,223	\$0	\$1,345,223
Expenses	\$175,000	\$0	\$175,000
Operating Capital Outlay	\$0	\$1,100,000	\$1,100,000
Electronic Data Processing	\$0	\$0	\$0
Special Category (Specific)	\$0	\$0	\$0
	\$0	\$0	\$0
	\$0	\$0	\$0
	\$0	\$0	\$0
	-----	-----	-----
Total All Categories	\$3,898,864	\$1,100,000	\$4,998,864
	=====	=====	=====



**State University System  
Education and General  
2021-2022 Legislative Budget Request  
Form I**

<b>University(s):</b>	<b>Florida International University</b>
<b>Request Title:</b>	<b>Program of Distinction in Environmental Resilience</b>
<b>Date Request Approved by University Board of Trustees:</b>	<b>December 5, 2019</b>
<b>Recurring Funds Requested:</b>	<b>\$15,150,000</b>
<b>Non-Recurring Funds Requested:</b>	
<b>Total Funds Requested:</b>	<b>\$15,150,000</b>
<b>Please check the request type below:</b>	
<b>Shared Services/System-Wide Request</b>	<input type="checkbox"/>
<b>Unique Request</b>	<input checked="" type="checkbox"/>

- I. Description** – 1. Describe the service or program to be provided and how this issue aligns with the goals and objectives of the strategic priorities and the 2020 University Accountability Plan established by your institution (include whether this is a new or expanded service/program). If expanded, what has been accomplished with the current service/program? 2. Describe any projected impact on academic programs, student enrollments, and student services. University of Distinction proposals should also address the requirements outlined in the separate guidance document.

**A. Introduction**

Florida International University seeks \$15.15M in funding for our Program of Distinction in Environmental Resilience. This program is aligned with utilizing FIU's interdisciplinary core competence in addressing 21st Century environmental challenges. The program's mission is to: address environmental challenges by creating data-driven solutions, educating the work force of tomorrow in strategic areas of focus, and utilizing world class research strengths to address the economic and population wellbeing issues related to environmental resilience.

Environmental factors stand out as determinants of population health that are amenable to data-drive solutions and prevention strategies. As described by the NIH, environmental factors such as physical, biological and chemical environmental hazards negatively impact population health. Public and environmental health interventions, urban planning and public education

programs are recognized approaches that can be used to achieve health and environmental equity and potentially create healthier and safer environments for everyone. This program's focus on Environmental Resilience will address the health of Florida's environmental assets (e.g., coastal and waters) as well as the health of our population. It will help address a critical issue at all levels of government, while supporting FIU's continued research excellence (\$1 Billion in Research expenditures in the past six years), and student success initiatives which both contribute to the expansion and diversification of Florida's economic portfolio.

## 1. Overarching Goals

- Recruit top research faculty and students
  - Be known as the top school for research on the environment and its impact
  - Increase national recognition and rankings for research and student excellence
- Increase research grants from federal government and private sources
- Be known as a national and global leader in Environmental Resilience
- Continue to be hyper-focused on student success outcomes
- Help Florida solve some of its most pressing environmental resilience challenges, including:
  - Implementing a coastal monitoring system
  - Educating workforce
  - Establishing a first of its kind Environmental Finance and Entrepreneurship program

## 2. Recent Accomplishments

The investments by the State of Florida and the support of the BOG, through programs such as the World Class Scholars, has assisted FIU in developing programs of distinction that, through interdisciplinary research and collaboration, have given FIU a Core Competence in Environmental Resilience. These programs of distinction have catapulted FIU to the top national tier of research universities; making FIU one of 5 Carnegie Research I Universities in the SUS. The progress driven by our programs of distinction include:

- In 2019 FIU met 8 of the 12 BOG Preeminent Research University criteria.
- A 61% increase in total research expenditures in the past five years.
- \$1B in total research expenditures in the past five years.
- Ranked #83 in total research expenditures among Public Universities in the last National Science Foundation (NSF) Higher Education Research & Development report (HERD) (2018).

- Ranked #3 within the SUS in National Institutes of Health (NIH) research funding, #3 in U.S. Department of Energy funding and #4 in NSF funding.
- Ranked #9 in the nation and #2 in the SUS in Psychology research expenditures, and #4 in Environmental Sciences.
- A substantial increase in positions paid by external research grants in the past 5 years from 1,522 to 4,220 annually.
- A 150% increase in annual invention disclosures, from 37 to 91 annual disclosures in the past five years.
- A 30-fold increase in patents from 2 to 66 annual patents in the past five years, making FIU #15 among public universities, and #33 globally.
- A 38% increase in PhD production (from 156 to 215 annual) and 68% in BOG doctoral degrees (from 257 to 432) in the past five years.
- A 57% increase in the 4-year graduation rate from the 2010-14 cohort of students to the 2014-18 cohort.
- Freshman Retention rate of 90.2%.

The proposed LBR will support FIU's 2025 Strategic Plan of achieving exceptional student-centered learning and post-graduation success, producing meaningful research and creative activities, and leading transformative innovations locally and globally. Moreover, this program of distinction addresses two pillars of FIU's 2025 Strategic Plan's framework: 1) Accelerate Preeminence & Research and Innovation Impact, and 2) Amplify Learner Success & Institutional Affinity. This Environmental Resilience program involves collaboration across FIU research centers and programs that have gained distinction through the investments of the State through initiatives that have allowed FIU to recruit nationally recognized faculty. These centers and programs include the Institute of Environment, the Extreme Events Institute, the Institute for Resilient and Sustainable Coastal Infrastructure (InteRaCt), the Brain, Behavior and the Environment Program, and Center for Children and Families (CCF).

FIU's leadership in environmental research and its interconnection to public health grew out of FIU's unique geographic location with a diverse population in a complex and vulnerable South Florida ecosystem. From FIU's inception, faculty with interest in environmental research have been attracted by the magnet of the Everglades, the Florida Keys, the coastal regions and our hurricane vulnerabilities. Similarly, the size, heterogeneity and complexity of South Florida's population have attracted world class faculty to FIU to study the region's public health challenges.

The proposed program of distinction on Environmental Resilience is designed to advance our current research programs and lead to innovative solutions to enhancing local, regional, and national resilience to environmental change, including preparing the workforce needed to address these challenges. It will also raise FIU's academic standing by leveraging existing programs of national preeminence to generate new knowledge and innovative solutions for the betterment of the environment, health, and society. This will solidify FIU's role as a top urban public research university and leader in environmental resilience and solutions. This Program of Distinction will enable us to attract and retain the best, most productive faculty and students, while cultivating leaders and nurturing all students, post-doctoral students, researchers, and staff to excel.

## **B. Creating Unique, Interdisciplinary Approaches to Florida's Environmental Resilience**

The Environmental Resilience program will address important environmental challenges. These are: (1) Enhanced Water Quality Monitoring for Coastal Health and Resilience, (2) Environmental Forensics and Public Health, (3) Environmental Finance and Risk Management, (4) Family Preparation and Resilience to Disasters

### **1. Enhanced Water Quality Monitoring for Coastal Health and Resilience**

Tourism is an important component of Florida's economy, much of which is focused on the more than 600 miles of coastline. These world-renowned economic assets are vulnerable to a myriad of environmental and human-driven challenges, e.g. harmful algal blooms (HAB) which provide both health risks as well as had significant negative impacts of up to \$130 million due to physical and economic damages on tourism as reported by the Tampa Bay Regional Planning Council in 2018.

It is imperative we establish state-of-the-art water quality monitoring throughout our southern coastlines as well as in the interior freshwater bodies that transport pollutants to the coastline. Through FIU's Center of Excellence in Aquatic Chemistry and Environment (described below), we are developing those tools necessary to provide the real-time data necessary to make predictions regarding harmful algal blooms. In this initiative, we propose to acquire and employ a real-time, distributed sensing platform to measure and predict the occurrence of HAB species and their likely severity and impacts on coastal ecosystems. In order to improve ecological models that predict the presence and locations of harmful algal blooms, FIU seeks to understand the factors driving bloom dynamics.

To model the timing and spatial distribution of HABs, FIU must be able to simultaneously measure climate (air temperature, light, windspeed and direction), aquatic environmental drivers (temperature, light, turbidity, dissolved oxygen, nitrogen, phosphorus, pH, pCO<sub>2</sub>, conductivity), biotic responses (algal cell densities and sizes, florescence, chlorophyll) and current/flow profiles (3-dimensional current velocity and direction, wave direction). This requires the design, development and deployment of a sophisticated water quality buoy platform that simultaneously measures the biological and physical variables associated with poor water quality and the development of HABs. We will also develop sensing techniques specific for brevetoxins, known to be harmful to humans.

To fully utilize the data, we will develop and maintain a near, real-time database for both Biscayne and Florida Bays, and the Florida Keys built on our 20-year record of data collected along a series of monitoring stations. In addition to a spatially explicit database, computer scientists in our CREST Center (described below) are developing computer algorithms to search other existing city, county and state datasets such as those at Florida Department of Environmental Protection (FDEP), South Florida Water Management District (SFWMD), Miami Dade County, etc. to harvest existing data and more fully populate the FIU database with ancillary information.

It is important to note that while it is imperative to be able to predict where and when nuisance algal blooms will occur to prevent human health issues, it is equally important to be able to predict where coastlines are free of such events and readily usable to the public and tourists.

## **2. Environmental Forensics and Public Health**

Environmental Forensics requires a cross disciplinary approach that encompasses the understanding of the sources of environmental contaminants, their transport through key ecosystems and their subsequent incorporation into humans and other fauna. The role of contaminants such as magnesium, calcium, zinc or manganese in high concentrations are now known to be involved in the onset and progression of chronic diseases like Alzheimer's or Parkinson's.

This initiative will: (a) improve basic scientific understanding of global change and anthropogenic effects caused by multiple environmental drivers, the physical and biological responses measured in water quality, soil and sediment contamination, emerging diseases, invasive species and other global stressors that are a risk to ecosystems and community health—filling the knowledge gap; (b) train students in the practices and

uses of technologies needed to better understand risk assessment and mitigation with innovative solutions; and (c) provide state of the art facilities that can support faculty and student researchers at FIU and around the nation--to fill research gaps that now exist because the capabilities and instrumentation are not available.

The team composition reflects the complex nature of the problem; toxic metals, for example, are affecting ecosystems like the Florida Everglades and its resources, inducing adverse outcomes pathways in marine organisms, influencing mental health of populations and creating environmental inequalities in minority populations. Another area of concentration is the characterization of environmental materials for provenance discrimination and or geographic origin identification.

### **3. Environmental Finance and Risk Management**

Sustainable environmental policies and practices depend upon creating trans-disciplinary programs that integrate between finance and natural systems. This integration can be achieved by linking financial theory and innovations to environmental sciences. While society currently tries to manage perceived risks or deficiencies by encouraging specific applications of finance – e.g. hazard insurance finance, home mortgage finance, energy finance, climate finance, forest finance, fisheries finance, ecosystems restoration finance, etc. – resilience requires a holistic understanding of how these and other applications, policies, and institutions interact as part of a coupled complex human and natural systems. FIU's approach advances a holistic viewpoint that identifies key interrelationships between finance and the human dimensions of environmental change.

The Environmental Finance and Risk Management program will be based on the rational that an expenditure of funds is required for large-scale anthropogenic environmental change (e.g. land development, resource extraction and harvesting, manufacturing, distribution, disposal, cleanup, restoration). Human action as financial transactions is essential, since “conservation without finance is just conversation”. Conversely, too much money that is wrongly directed money can induce harmful environmental action.

Modern mathematical finance sprang from the theory of heat diffusion in a fluid and was then used to forecast securities prices. Important practical applications have since extended these theoretical links. The payoff of catastrophe bonds and weather derivatives is explicitly tied to environmental parameters, thus requiring knowledge of both science and finance.

Our environmental finance program will use a convergent research approach, compared to past academic models that separated financial engineering from environmental sustainability. The National Academies defines “Convergence” as “research driven by a specific and compelling problem” requiring “deep integration across disciplines”. In addition, NSF considers Convergence research one of its “10 Big Ideas for Future Investment.” Environmental finance and risk management will be a first-of-its-kind transformative example of Convergence.

This program will support emerging research involving risk management, resilience, sustainability and coupled systems. It will also emphasize environment-linked finance’s relevance to a growing number of exciting commercial and policy applications. Graduate students will be supported to conduct research in this new, convergent research area and to pursue future careers in environmental resilience.

#### **4. Family Preparation and Resilience to Disasters**

Given the increased frequency with which severe weather events have been impacting Florida, the preparation of our most vulnerable populations are critical, both pre- and post-hurricane events. FIU’s Center for Children and Families (CCF) and Extreme Events Institute (EEI) are well positioned to address this critical issue. These teams will coordinate to develop workshops focused on promoting storm-related media literacy for Floridians by helping families (a) make sense of meteorology reports and storm updates, (b) learn to distinguish actionable updates from less emotional “spectacle-focused” coverage, and (c) learn the negative impacts that extensive pre-storm media exposure can have on child and family functioning. Parents will receive coaching in how to talk to children across different developmental levels about impending storms and about storm-related destruction and loss, and will be trained in how to identify signs of significant post-storm adjustment difficulties in their children and themselves.

In the context of severe weather events, addressing storm-related emotions and preparation is critical from a public mental health perspective, but is also critical from the perspective of public safety. Increasingly, research documents how stress and panic in the population constrain responsible decision-making and place Floridians at risk. During storm watches, masses of individuals not dwelling in evacuation zones make emotion-based decisions that contribute to pervasive traffic congestion/gridlock and widespread gas shortages that disrupt and prevent timely evacuation for those in mandatory evacuation zones and in immediate danger. Poor pre-season household preparation (e.g., stocking

water, non-perishables, batteries, and other supplies) leads to abrupt supermarket shortages during individual storm watches that lead to additional unwarranted evacuations that burden the smooth and timely flow of evacuees from high-risk/mandatory evacuation regions. In fact, one of the leading reasons individuals in high-risk zones give for not choosing to evacuate is their concern that evacuation routes (and subsequent return routes) will be overcrowded and they will not have access to additional needed fuel along the way.

Once the storm-related prevention workshops are developed, the CCF is well-poised to disseminate them to the rest of the State of Florida through multiple mechanisms. The CCF's annual Miami International Conference on Evidence-based Treatments for Childhood and Adolescent Mental Health (MICAMH) can also be used as a dissemination site as it is attended by mental health professionals from throughout the state. Further, the CCF has extensive experience disseminating information to mental health and health professionals throughout Florida and the U.S. through its decade-old website on Evidence-based Practices in Child Mental Health. Further, Dr. Jonathan Comer, a member of the CCF with expertise on the impact of disasters on child mental health has developed procedures for modifying parenting programs to be delivered over the internet, and has shown that the impact is comparable to face-to-face trainings/sessions. Thus, the team will develop both face – to-face and web versions of the storm-related prevention materials. The dissemination effort will also be facilitated through the extensive networks of the Extreme Events Institute (EEI) at FIU.

### **C. Workforce of the Future**

Attracting and retaining top research faculty will continue to provide our undergraduate and graduate students with exceptional preparation for innovatively solving the most critical environmental resilience challenges. In addition to traditional in-class and lab training, this proposal includes extensive field opportunities and workforce training components. The U.S. Bureau of Labor Statistics, Employment Projections program highlights jobs requiring degrees, credentials, and skills offered by this trans-disciplinary program, e.g. Environmental Risk Management, Engineering, Public Health and Disaster Management.

Future workforce will need new skills to be able to communicate across disciplines, implement convergent research approaches, as well as navigate the technological innovations of the coming decades. Alongside the research programs mentioned above, we will develop the workforce needed to address environmental resilience challenges locally and



nationally. A few specific programs to be added to our current offerings are outlined below:

Environmental Fellows pipeline and top student recruitment.

The Environmental Fellows pipeline will be focused on the development and recruitment of top-qualified and diverse talent from South Florida schools. This will include high school teacher trainings, intense summer research experiences, guaranteed undergraduate research placements and paid internships in the fields related to Environmental Resilience.

Graduate student retention, doctoral student and postdoctoral fellow support.

Graduate students and postdoctoral fellows constitute a fundamental scientific workforce for research centers and research programs. FIU will provide financial support for recruitment and retention of graduate students and postdoctoral fellows who will work with the faculty directly involved with these programs.

Industry partnerships, trainings and certifications.

This funding will support partnerships with industry in developing technological solutions to address environmental challenges and partnerships in workforce training. Artificial intelligence, robotics and financial management in industry competency for environmental resilience associated with the proposed Environmental Resilience program of distinction.

Artificial Intelligence & Robotics.

Automation and machine intelligence promise to fuel economic growth and produce new occupations, with likely impact on almost all industries and occupations. The broad-based application of Artificial Intelligence (AI) to software and hardware systems is launching a significant leap forward, creating intelligent software applications and robotic machines that learn from experience to make decisions and process vast amounts of data to reach independent conclusions. Therefore, we propose training in automation and robotic processes, in partnership with our Robotics Academy.

Environmental Finance.

Like environmentally linked health issues, very few students or faculty have training in bringing together finance and environmental issues. This initiative will link our Extreme Events Institute with our nationally ranked College of Business to establish a certificate program in Environmental Finance, not only for our students but for professionals from around the country, and the world who are working to solve the challenges of Environmental Resiliency. The overarching goal of the Certificate

Program is to spur an understanding of how the modern global financial system interacts with multiple natural systems. Specific goals are to train future scientific, financial, and policy professionals in:

- The advanced quantitative skills required to understand, evaluate, and price modern financial instruments that are linked to environmental parameters. Such skills include scientifically-based risk assessment, analytic techniques of mathematical finance, and computer-based simulation techniques.
- Key statistical methods, and techniques for applying these methods to scientific and financial data.
- Key concepts of the role of finance as part of the dynamical coupled Earth Systems.

To further disseminate the findings from this LBR, FIU will develop a series of workshops that can be provided to stakeholders, policy makers and business and government entities to explore new ways to link finance with environmental resilience.

#### **D. Research Centers and Programs Participating in the Environmental Resilience Core Competence Program**

##### The Institute of Water and the Environment

The Institute of Water and the Environment has over 130 faculty and staff and includes the Southeast Environmental Research Center (SERC), the Center for Coastal Oceans Research and the Medina Aquarius Program, the Florida Coastal Everglades Long Term Ecological Research Program, plus an NSF-funded Center of Excellence on aquatic chemistry and ecotoxicology. It also includes the Sea Level Solutions Center, bringing together faculty from nearly every college and school at FIU to address challenges posed by rising seas and other environmental challenges. In addition, the Institute features organized research units on the Sustainable Built Environment and Informatics, International Programs, and a UNESCO Chair on Water Security and Social Equity. From the wetlands of the Everglades to the coral reefs in the oceans, institute researchers are helping to preserve freshwater and marine resources for future generations. The Institute of Environment is the largest research center/institute at FIU, with a portfolio of over \$40M in research awards, which includes both research grants and training grants for undergraduate and graduate students.

The Director of the Institute, Dr. Todd Crowl has more than 30 years of experience working on interdisciplinary projects related to ecosystems science and aquatic ecology, including urban stream ecology. Dr. Crowl

has received and managed more than \$40M of grants, including two of the NSF's largest Center of Excellence awards.

The Institute of Water and the Environment houses several flagship programs that have State of Florida, national and international recognition. These flagship programs include:

- The Center for Aquatic Chemistry and the Environment (CACHÉ); which is a National Science Foundation (NSF) Center of Research Excellence in Science and Technology (CREST) that tackles one of the most complex challenges: environmental contamination. CREST has funded over 30 PhD students and over 50 undergraduate and masters students.
- The Florida Coastal Everglades (FCE) LTER Program; which is part of the [Long Term Ecological Research \(LTER\) Network](#) established by the National Science Foundation in 1980. The FCE LTER Program was established in May of 2000 in south Florida, where a rapidly growing population of over 6 million people live in close proximity to - and in dependence upon - the Florida Everglades. The program includes 86 senior scientists and 77 students from 29 institutions. FCE researchers study how hydrology, climate, and human activities affect ecosystem and population dynamics in the ecotone and more broadly, the Florida Coastal Everglades. FIU researchers working in the Everglades provided the data and water quality analyses that were used to set Florida's water quality criteria. The criteria for allowable Phosphorus concentrations in freshwater are still in force.
- The Southeast Environmental Research Center (SERC) Water Quality Monitoring Network. Operated by SERC, the function of the Network is to address regional water quality concerns that exist outside the boundaries of individual political entities. Funding for the Network has come from many different sources with individual programs being added as funding became available. Field sampling occurs over different time periods due to the nature of the funding. The Florida Keys National Marine Sanctuary and the Southwest Florida Shelf are sampled quarterly. The data summary maps are produced on a quarterly basis by integrating the individual projects into one data file for that month sampled. Previous surveys of Biscayne Bay, Florida Bay & Whitewater Bay, Ten Thousand Islands, and Marco-Pine Island Sound were sampled monthly.
- The Center for Coastal Oceans Research. The Center consists of the Medina Aquarius Program, the world's only permanent undersea

research laboratory, and partners with the Florida Keys National Marine Sanctuary, and the Rookery Bay Research Reserve.

#### The Extreme Events Institute (EEI)

The EEI comprises the International Hurricane Research Center and the Disaster Resilience and Climate in the Americas program. The EEI is a globally involved center for research, education, and training in natural hazards and disaster risk management. The Institute conducts multi-disciplinary research on hazards and vulnerabilities of all types, with emphasis on the role of pre-impact "risk drivers." The Institute includes faculty and researchers from the social and behavioral sciences, engineering, computer science, earth and atmospheric sciences, public health, public administration, business, and architecture. The EEI manages the Wall of Wind Laboratory, which was established through a State of Florida Center of Excellence, and is funded through the NSF Natural Hazards Engineering Research Infrastructure (NHERI) program. The EEI developed and manages the Florida Public Hurricane Loss Model. The EEI has a portfolio of \$15.6M in research awards from a variety of agencies, including the NSF, NOAA and USAID.

The Director of EEI is Dr. Richard Olson, an international expert on disaster management. Professor Olson was part of a research team to the 1972 Managua, Nicaragua earthquake and was subsequently involved in disaster response, research, and evaluation in more than 20 events, including Guatemala 1976 (earthquake); Chile 1985 (earthquake); Mexico City 1985 (earthquakes); Colombia 1985 (volcanic eruption and lahar) and 1994 (earthquake and landslide); Peru and Bolivia 1996-1998 (El Niño-Southern Oscillation); the Dominican Republic 1998 (Hurricane Georges); Honduras and Nicaragua 1998 (Hurricane Mitch); Belize 2000 (Hurricane Keith); and El Salvador 1986 and 2001 (earthquakes). He subsequently organized field research teams to the Chile and Haiti earthquakes of 2010.

#### The Institute for Resilient and Sustainable Coastal Infrastructure (InteRaCt)

InteRaCt identifies engineering solutions for challenges faced by aging infrastructure and develops innovative and economical technologies for the creation of resilient and sustainable communities. The economic prosperity of the United States is closely related to the health of the nation's infrastructure, which includes Aviation, Bridges, Dams, Drinking water, waterways, ports, rail, transportation, roadways, ridges, communication, energy, waste water systems, water management systems, and power systems, to name a few. InteRaCt is an umbrella organization that incorporates bridge engineering, the U.S. Department of Transportation-funded University Transportation Center (ABC-UTC), and the Lehman Center for Transportation Research.

InteRaCT has a portfolio of research awards of \$5.1M. The Director of the Institute, Dr. Atorod Azizinamini was recruited as a Cluster hire to be the chair of Civil and Environmental Engineering in 2011.

#### The Brain, Behavior and the Environment Program

The Brain, Behavior and the Environment Program is a trans-disciplinary initiative at FIU that unites the dynamic and diverse neuroscience community at FIU toward three goals: to create and empower research programs focused on environmental causes of neurological disease, to devise strategies and develop treatments for neurological disorders using novel neuroscience and engineering tools as well as pharmacological approaches, and to establish a rich educational resource in South Florida to educate students, faculty, clinicians, the public, and health officials on the role that environmental factors play on neurological disease. This program currently has \$10M in research awards, with the majority being from the NIH.

The Brain, Behavior and the Environment Program includes a multidisciplinary group of faculty. Its Director is Dr. Tomas Guilarte, Dean of the Robert Stempel College of Public Health & Social Work. Dr. Guilarte was recruited through a World Class Scholars initiative. Dean Guilarte is renowned for revealing the effects that low-level lead exposure has on the central nervous system during brain development, a discovery that led to strategies for mitigating learning deficits. He joined FIU after serving as the inaugural Leon Hess Professor and Chairman of the Department of Environmental Health Sciences at Columbia University-Mailman School of Public Health in the City of New York. Prior to Columbia University, Dr. Guilarte spent three decades as a professor and researcher in the Department of Environmental Health Sciences at the Johns Hopkins University Bloomberg School of Public Health.

#### The Center for Children and Families (CCF)

The CCF is a nationally recognized, interdisciplinary clinical research center committed to improving the lives of children and families struggling with mental health concerns. The mission of the CCF is to (1) study the causes and nature of children's mental health problems, (2) to develop and test intervention and prevention models for evidence-based, cost-effective services that can be used to improve mental health in children and families at a population level (3) to provide services for children and families in clinic and community settings, and (4) to educate students, families, and professionals in the U.S. and abroad regarding the causes and treatment of childhood mental health and effective intervention and prevention. The CCF has over \$60M in research awards (50 grants), with the majority being from the NIH. The CCF was recruited to FIU from SUNY Buffalo as a part of a Cluster Hire, and its Director, Dr.

William Pelham, is internationally recognized as a leader in child mental health and has received numerous national awards recognizing his contributions. Dr. Pelham has hired 25 faculty members in the CCF, all of whom have all obtained federal funding for their research and the majority of whom have won early and midcareer awards for their research. Dr. Jon Comer, for example, has received national exposure for his research on children's response to disasters, including hurricanes. Dr. Pelham has held more than 80 research grants (16 current) from federal agencies (NIMH, NIAAA, NIDA, NINDS, NICHD, IES), foundations, and pharmaceutical companies, and has over 400 scientific publications. CCF faculty together publish more than 160 scientific papers annually. Dr. Pelham and other CCF faculty have served as consultants/advisors to numerous federal agencies (e.g., NIMH, NIAAA, NIDA, NICHD, IES, ACF, SAMHSA, IOM, OMAR, the CDC, and AHRQ,) and national organizations (AAP, AACAP, APA, CHADD, NICHQ, SDBP). The CCF conducts annually a nationally prominent, annual conference, the Miami International Conference on Evidence-based Treatments for Childhood and Adolescent Mental Health (MICAMH), that is attended by more than 500 MH professionals throughout Florida.

#### **E. Funding Categories**

##### **Faculty Recruitment/Teaching and Research (\$7,000,000)**

Faculty are the main drivers of research and student success at a University. To expand the interdisciplinary research collaboration of the Environmental Resilience program of distinction, faculty recruitment will be essential. Following the successful approach that has brought FIU to the status of a Research I University, the faculty recruited into this core program of distinction will consist of clusters that will both complement and add to the existing faculty; and will be world class in their achievements and potential. We will focus on expertise in the intersect of environmental factors and public health, and resilient infrastructures. We will recruit 3 members of the National Academies of Sciences, 21 senior level faculty and 16 mid-level faculty.

The full impact of a program of distinction encompasses both research and teaching. Our goal is for the program to be a critical contributor to student success in all the areas (environment, infrastructure and public health) that are the interdisciplinary components of the program. Therefore, we will accelerate the recruitment of new faculty, with the recruitment focusing on curricular areas with highest demand within the integrated program. These new faculty members will focus on offering undergraduate level courses in various modalities to meet student

demand and supply additional class sections required to ensure timely degree completion.

**Environmental Fellows Career Pipeline (\$1,000,000)**

The Environmental Fellows pipeline will be focused on the development and recruitment of top-qualified and diverse talent from South Florida schools. This will include high school teacher trainings, intense summer research experiences, guaranteed undergraduate research placements and paid internships in the fields related to Environmental Resilience.

Early engagement in research experiences leads to undergraduate student success, both in terms of early graduation and job placement success or continuation to post-graduate education. The Environmental programs at FIU already have recruitment and training connections with high schools and State Colleges. This includes Research Assistantships for High School Students (RAHSS), as well as the Research Experience for Teachers (RET) and the Wind Engineering for Science Teachers (WEST) Workshop, which involves seasoned Miami-Dade County Public School (M-DCPS) teachers participating in a 6-week wind engineering research program. We will design an Environmental Academy pipeline by accelerating dual enrollment, providing High School students with summer research basics/fundamentals; and professional development for High School science teachers to strengthen the pipeline.

This component of the program will also focus on establishing an early pipeline of State College students with interest in the fields of study associated with the program. FIU is already co-located with MDCPS's Marine Academy of Science and Technology (MAST) at its Biscayne Bay Campus.

**Doctoral Student Support (\$800,000)**

FIU's doctoral degree production has increased by 15% (373 to 430) in the past three years, with increases in research doctorates of 28% (151 to 194). Research doctoral education is an integral part of research preeminence, and a necessary component of recruitment of world class faculty. We will dedicate some of the financial support of doctoral students that will be part of the academic programs connected to the proposed program of distinction. This will support the continued success of these programs by being able to recruit the best and brightest doctoral student candidates. Since the research programs and institutes that are part of the proposed program of distinction receive significant external research grants and drive FIU's innovation, this investment will in turn increase external funding for doctoral students and amplify FIU's innovation impact.

**Program of Distinction Postdoctoral Fellows (\$750,000)**

Postdoctoral scholars constitute a fundamental scientific workforce for research centers and research programs. World Class faculty, when recruited, require postdoctoral support to support their research, and successful postdoctoral scholars conduct research, add to the research funding and assist in the training of undergraduate and graduate students.

**Faculty Research Grant Support (\$600,000)**

The growth of the program of distinction in terms of obtaining external research funding and quickly moving the research finding into technical applications and programmatic applications will depend on the recruitment of staff that will provide administrative support, and perhaps more importantly support in the pursuit of funding for the basic and translational research that will be conducted.

**Recruitment Scholarships and Retention/Completion Grants (\$1,500,000)**

This funding will expand the merit scholarship budget towards the goal of improving the incoming student profile in the disciplines associated with the Environmental Resilience program of distinction, as well as retaining and accelerating the graduation rates of students. These funds also support students who face unexpected emergencies and financial circumstances that impact their ability to remain enrolled.

**Industry Partnerships for Economic Growth/Workforce Development in Environmental Resilience (\$1,000,000)**

An important component of FIU's 2025 Next Horizon Strategic Plan is learner success through alignment with industry workforce needs. This funding will support partnerships with industry in developing technological solutions to address environmental challenges and partnerships in workforce training. Artificial Intelligence, Robotics and Financial management in industry competency for Environmental Resilience associated with the proposed Environmental Resilience program of distinction.

This will include:

- Identification and badging "essential" skills
- Identification and badging industry-recognized credentials throughout degree programs
- Alignment of essential skills to University Core Curriculum
- Development and/or alignment of continuing education for workforce development

**Ongoing Support for Field Deployed Monitoring Equipment and Data Processing Technologies (\$2,500,000)**



The funds will be used to establish and maintain world-class coastal monitoring systems and centralized data-processing to inform policy and decision-making. This dataset will be available to all researchers focused on enhancing the resilience of Florida's coastal environment and the large populations living in near proximity. This program will require continuous upgrades and maintenance support to ensure it is well-positioned to help answer the critical questions facing the State of Florida.

**II. Return on Investment** - *Describe the outcome(s) anticipated, dashboard indicator(s) to be improved, or return on investment. Be specific. For example, if this issue focuses on improving retention rates, indicate the current retention rate and the expected increase in the retention rate. Similarly, if the issue focuses on expanding access to academic programs or student services, indicate the current and expected outcomes. University of Distinction proposals should also address the requirements outlined in the separate guidance document.*

Return on Investment will be measured through metrics that are directly related to the impact of the Environmental Resilience program on specific areas of program focus, as well as on the overall impact on FIU's progression in student success and research excellence. Through the program's accomplishments, FIU will also contribute to the SUS goal of Florida continuing to lead in higher education across the nation. Competition for economic drivers such as corporations, business infrastructure and R&D is estimated to only increase across the State, and we believe FIU's relative contributions to these SUS goals will help to retain existing and drive new business and industry to Florida.

The LBR request focuses on Accelerating Program of Distinction Research, Student Success and Innovation Impact. We will have metrics directly associated with the Program of Distinction, as well as Overall Return on Investment (ROI).

The metrics measuring Program success will be as follows:

- Buoy Design and Construction for water monitoring by the end of the first year, and deployment on the second year.
- Initial mapping of coastal water monitoring needs.
- Development of storm-related prevention workshops during the first 6 months of the year.
- During second year, sessions of the Miami International Conference on Evidence-based Treatments for Childhood and Adolescent Mental Health (MICAMH) dedicated to storm-related prevention workshops for mental health professionals and parents.
- Within the first year of the LBR funding, the Environmental Resilience program will submit at least one student training grant to the NIH or

NSF to financially support students being trained in the program.

- Within the first year of the LBR funding, the Environmental Resilience program will submit a NIH Core Center of Excellence (P30) grant application to National Institute of Environmental Health Sciences (NIEHS) focusing on addressing the impact of environmental factors on brain health.
- Over the first five years, the rankings, based on research expenditure growth, of the academic fields associated with the Program of distinction will improve in the NSF HERD's STEM field categories as follows:
  - Environmental Sciences – From current #65 of 431 programs among public universities to top 50.
  - Computer Science – From current #54 of 430 programs among public universities to top 40.
  - Health Sciences – From current #90 of 448 programs among public universities to top 75.
  - Psychology – From current #9 of 438 programs among public universities to top 5.

The Overall Return on Investment (ROI) will be as follows:

- The FIU FTIC 4-Year Graduation Rate to improve by 54% (from 38.9% in 2018 to 60% in 2025).
- The FIU FTIC 6-Year Graduation Rate to improve by 23% (from 57% in 2018 to 70% in 2025).
- The FIU FTIC 2-Year Retention Rate to improve by 2.3% (from 88% in 2018 to 90% in 2025).
- Total doctoral degrees to increase by 49% (from 404 in 2018 to 600 in 2025).
- Total research PhD degrees to increase by 58% (from 200 in 2018 to 315 in 2025).
- Total Research Expenditures to increase by 53% (from \$196M in 2018 to \$300M in 2025).
- Science & Engineering Research Expenditures to increase by 52% (from \$166M in 2018 to \$252M in 2025).
- Non-Medical Science & Engineering Research Expenditures to increase by 53% (from \$153M in 2018 to \$234M in 2025).
- Industry-related research and design to increase by 115% (from \$9.3M to \$20M).

**III. Facilities** *(If this issue requires an expansion or construction of a facility, please complete the following table.):*

	Facility Project Title	Fiscal Year	Amount Requested	Priority Number
1.				
2.				

**2021-2022 Legislative Budget Request**  
**Education and General**  
**Position and Fiscal Summary**  
**Operating Budget Form II**  
(to be completed for each issue)

**University:** Florida International University  
**Issue Title:** Program of Distinction in Environmental Resilience

	RECURRING	NON-RECURRING	TOTAL
<hr/>			
<u>Positions</u>			
Faculty	51.00	0.00	51.00
Other (A&P/USPS)	10.00	0.00	10.00
	-----	-----	-----
Total	61.00	0.00	61.00
	=====	=====	=====
Salaries and Benefits	\$8,808,251	\$0	\$8,808,251
Other Personal Services	\$1,166,774	\$0	\$1,166,774
Expenses	\$2,965,750	\$0	\$2,965,750
Operating Capital Outlay	\$2,209,225	\$0	\$2,209,225
Electronic Data Processing	\$0	\$0	\$0
Financial Aid	\$0	\$0	\$0
Special Category (Specific)	\$0	\$0	\$0
	\$0	\$0	\$0
	\$0	\$0	\$0
	\$0	\$0	\$0
	-----	-----	-----
Total All Categories	\$15,150,000	\$0	\$15,150,000
	=====	=====	=====

**THE FLORIDA INTERNATIONAL UNIVERSITY**  
**BOARD OF TRUSTEES**  
**Academic Policy and Student Affairs Committee**  
September 9, 2020

**Subject: Textbook and Instructional Materials Affordability Annual Report**

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**Proposed Committee Action:**

Recommend to The Florida International University Board of Trustees approval of the Textbook and Instructional Materials Affordability Annual Report.

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**Background Information:**

Effective July 1, 2016, Florida House Bill 7019, Education Access and Affordability, requires the Board of Governors and the State Board of Education to annually identify strategies to promote college affordability. Under this bill, all State University System institutions are required to submit a Textbook and Instructional Materials Affordability Report that describes the institutional processes of selecting, adopting and posting course materials. In addition, the report must include an overview of institutional initiatives and policies designed to reduce the costs of course materials and promote college affordability.

Pursuant to Florida Board of Governors Regulation 8.003, Textbook and Instructional Materials Affordability, each university board of trustees shall provide a report, by September 30 of each year, to the Chancellor of the State University System, in a format determined by the Chancellor.

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**Supporting Documentation:** Textbook and Instructional Materials Affordability Annual Report

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**State University System of Florida  
Textbook and Instructional Materials Affordability  
Annual Report  
Statutory Due Date: September 30**

Florida International University University Submitting Report		Fall 2019 and Spring 2020 Semester(s) Reported	
Date Approved by the University Board of Trustees		Signature of Chair, Board of Trustees	Date
Signature of President	Date	Signature of Vice President for Academic Affairs	Date

### 1. Required and Recommended Textbooks and Instructional Materials for General Education Courses

a. Describe the textbook and instructional materials selection process for general education courses, including high enrollment courses.

*Methodology for determining high enrollment: Order courses (course prefix/number) by headcount enrollment, excluding honors courses. The top 10% of courses are determined as high enrollment. Report the total number of courses (n).*

Response:

#### General Education High Enrollment Courses

The selection process for textbook and instructional materials for general education high enrollment courses in Fall 2019 (n = 94) and Spring 2020 (n = 91) was completed either by the individual instructor or collectively by all instructors teaching the course.

Faculty are very conscientious when selecting the materials for their courses, always ensuring that the educational quality of the course materials serves the students' needs for optimal learning outcomes while taking into consideration the following:

- Affordability of the textbook for students
- Reputability of the author(s) and the publisher
- Clarity of the contents
- Clarity and comprehensiveness of the homework problems
- Clarity of the examples in the textbook which are based on the real data sets
- Integration and use of modern statistical packages within the textbook
- Supplementary materials for the book (such as power point presentation, interactive tutorial programs, students' learning resources and their affordability, instructor resources and web-based auxiliary instructional tools)

- Flexibility of obtaining the textbook in an alternative format (hard copy, paperback, electronic)

b. Report the course title(s) and number of section(s) that do not require or recommend the purchase of a textbook(s) and instructional material(s).

Fall 2018

Course Titles not Requiring or Recommending Purchase of Texts/Instructional Materials	Number of Sections
52 courses	250

Spring 2019

Course Titles not Requiring or Recommending Purchase of Texts/Instructional Materials	Number of Sections
58 courses	222

Fall 2019

Course Titles not Requiring or Recommending Purchase of Texts/Instructional Materials	Number of Sections
57	224

Spring 2020

Course Titles not Requiring or Recommending Purchase of Texts/Instructional Materials	Number of Sections
34	125

For a detailed list with course titles see Appendix A. Please note that we have adjusted the reporting methodology from previous years to only report high enrollment General Education Courses as is required under section 1. and in alignment with other SUS institutions' reports.

## 2. Specific Initiatives of the University Designed to Reduce the Costs of Textbooks and Instructional Materials for General Education Courses

a. Describe specific initiatives of the institution designed to reduce the costs of textbooks and instructional materials.

*Response:*

FIU Barnes & Noble Bookstore

**Barnes & Noble New, Used, Rental and Digital Options**

Barnes & Noble FIU bookstores continue to offer cost savings such as new, used, rental and digital textbooks with new titles continuously added. Students may save as much as 80% by purchasing textbooks in alternative formats offered.



For Fall 2019 and Spring 2020 the Barnes & Noble FIU bookstores offered 80.4% and 78.2% respectively of all textbooks as rental option with discounts of up to 80%. The rental utilization rates of all book transactions for Fall and Spring were 44.4% and 48.5% respectively. The digital availability of textbooks was at 41.5% and 40.7% respectively, with discounts of up to 60% and utilization rates of 16.4% and 15.3%. Used textbook purchases represented 11.9% and new and used textbook rentals represented 16.1% of all textbook transactions in the Fall and Spring semesters. By taking advantage of used, new rental, used rental, or digital discount options, students saved \$1,358,396 (17.99%) in the Fall 2019 and Spring 2020 semesters.

#### Barnes & Noble @ FIU Price Match Program

Initiated by the FIU Office of Business Services, in Spring 2016 Barnes & Noble launched the Price Match program. Barnes & Noble is matching the prices for textbooks advertised or offered by a local competitor, BN.com, or Amazon. The program does not include price matching items from textbook marketplaces such as Amazon Prime (membership deals) or Amazon Warehouse Deals and does not include offerings from peer to peer marketplaces, aggregator sites, digital books, publisher direct pricing or bulk purchases/course fee pricing.

For the past year, Price Match savings of \$9,786 in Fall 2019 and Spring 2020 semesters were passed on to students, bringing the program total to \$135,726 matched since inception in Spring 2016.

#### FIU / Barnes & Noble / Publisher Student Value Program

Barnes & Noble and multiple publishers came to the table to develop a textbook Student Value Program intended to model the key aspects of the First Day initiative. This model offered FIU an opportunity to understand the potential savings to students and overall value of the First Day initiative and provided the data needed to support its implementation, which is now underway. Barnes & Noble worked with several publishers to drive down the cost of course materials. The respective publisher dropped its price while Barnes & Noble dropped its margin resulting in the most affordable price to the student anywhere. This program ran from the first day of class through the third week of classes. In Fall 2019, the instructors of 58 course sections representing an enrollment of 4,516 students participated in this program. A total of 3,325 (64.6%) students took advantage of this program which generated \$187,407 in student savings compared to the same materials offered with regular national pricing. Spring 2020 had 61 course sections participating with an enrollment of 4,607 students. A total of 2,934 (64.4%) students took advantage of this program, which generated \$172,565 in student savings compared to the regular national pricing for the same materials.

## Adoption & Insights Portal (AIP) Overview

AIP is a newly developed, web-based platform built exclusively for faculty and department administrators to research and adopt textbooks and course materials in one, convenient place. The portal populates course schedule information from FIU's student information system (SIS), based on which AIP delivers a highly personalized, streamlined, action-oriented user experience for faculty, staff, administrators, and academic leadership. Key functionalities include:

- a personalized course list for faculty and staff to easily search, research, and submit their adoptions;
- historic adoption data and one-click re-adoption functionalities;
- a dashboard to track, monitor, and report on timely adoption submissions in real-time;
- in-line affordability recommendations for open educational resources and other options as a complement or substitute to traditional course materials;
- communication tools, including automated reminders, on-demand emails, and on-site messaging;
- 24/7 adoption support via website chat or toll-free number as well as the option to directly communicate with the Barnes & Noble bookstore staff on the local campus;
- integration with FIU's student information system for an efficient, personalized and, real-adoption process.

## Financial Aid

### Book Advances

Students receiving financial aid and unable to afford required and recommended course materials may apply for a book advance through the Office of Financial Aid, which continually monitors student financial need including cost of textbooks. This aid ensures that students can purchase their course materials prior to the start of the semester and are prepared for class on the first day.

<b>Financial Aid Book Advances</b>		
<b>Term</b>	<b>Student Count</b>	<b>Book Advance Aid Awarded</b>
<b>Fall 2019</b>	4,314	\$ 1,884,450
<b>Spring 2020</b>	4,112	\$ 1,692,056
<b>Total AY 2019-2020</b>	8,426	\$ 3,576,506

## FIU Online

### Affordability Counts Initiative

Launched in June 2016, the Affordability Counts collaborative initiative from FIU Online, the FIU Libraries, and the Center for the Advancement of Teaching, aims at lowering the

cost of course materials to \$20 or less per credit. Faculty are encouraged to adopt open educational resources (OER) or other low-cost course materials.

In 2019, FIU Online partnered with five Universities to create a state-wide database. The team developed <https://affordabilitycounts.org>, a new website with a searchable database of courses that use OER and low-cost materials for faculty across the state to contribute to and use as a resource in their own content curation process. In just one year, all faculty at Florida state colleges and universities gained access to a statewide repository of model courses and their low-cost materials. SUS partnerships now include the University of Central Florida, University of North Florida, University of South Florida, Florida A&M University, Florida Atlantic University, and Lake Sumter College.

As of the last award session in June of 2020, over 444 faculty across the state of Florida have participated in this program, with 596 courses designated as “affordable courses”. Specifically, FIU Affordability Counts medallion courses have saved over 13,000 students in excess of \$1.9 million. This figure does not include subsequent iterations of the course after the medallion was awarded, so savings are actually higher.

## FIU Libraries

The FIU Libraries are committed to support faculty in providing open access, low cost materials for students. The libraries' collection development mission is to purchase high-quality e-materials whenever cost effective, feasible, and possible. Many faculty work closely with their library liaison to embed into their courses e-books and other online materials they deem suitable.

## E-Materials

The FIU Libraries support faculty in shifting to new models for course materials. Some of the key strategies the libraries are using to meet student demand for lower-cost textbooks include subscribing to e-resources that provide unlimited simultaneous user access remotely.

Faculty adopt these materials in their courses cost free for students. The libraries subscribe to a number of e-book collections including Emerald Business & Management, Business Expert Press, Cambridge Books Online, CRC Handbooks of Chemistry & Physics, Credo Reference, Electronic Book Online, Proquest eBook Central, eBooks on Ebscohost, Elsevier ScienceDirect eBooks, Gale Directory Library and Gale Virtual Reference Library, IGI Global Books, JSTOR Books, OECD iLibrary, and Springer eBooks.

The FIU Libraries' catalog has access to 4,674,857 items in e-format including e-books, streaming media (more than 100,000), government information, and more. Furthermore, the library subscribes to more than 1,100 databases. The majority of the library databases offer a persistent URL at the article level which can be used not only for supplemental materials but can easily supplant a traditional textbook.

## Course Reserves

Course Reserves is a service available to FIU faculty to house pertinent course materials. Materials may be in print, electronic, and multimedia formats in compliance with the Copyright Law. Whenever possible, materials are scanned as electronic documents and made available to students 24/7. This allows students to use specific library materials, or professor provided materials, free of charge.

The Library Access Service department reports that during the academic year 2019-2020, there were a total of 11,579 Course Reserve items including books, articles, DVDs, equipment, maps, files, and more (Green Library: 7,223; Hubert Library: 3,351; Engineering Center: 825). This represents a 25% increase over the previous year (8,499 total course reserve items), indicating the enhanced availability of cost-free course materials at all three locations. A total of 2,577 course reserve loans to students were recorded. The discrepancy between the number of loan items and checkouts is likely due to the pandemic and the closing of the physical campuses.

#### Open Educational Resources (OER)

In January 2020, the FIU Libraries hired Dr. Howard R. Mori as full-time OER Coordinator. The OER Coordinator's goal is to develop a university-wide initiative and support faculty with adopting OER for the benefit of students. Dr. Mori collaborated with the FIU Libraries, the Office of Analysis and Information Management, the Center for the Advancement of Teaching, FIU Online, Affordability Counts, the Textbook Affordability Task Force, and the Barnes & Noble Bookstore.

In May 2020, the Executive Committee of the Florida Academic Library Services Cooperative (FALSC) selected Dr. Mori to serve on the state-level Textbook Affordability and OER Standing Committee. This appointment reaffirms FIU's commitment and support to OER initiatives both on campus and to member institutions of the Florida Virtual Campus and the FALS Cooperative.

b. Is the opt-in provision an initiative implemented by the institution for the purchase of student materials? If yes, describe the impact this has had on student cost savings, if any.

*Response:*

FIU piloted a First Day program in 2018/2019 that did not require opt-in or opt-out. This program provided all students in participating courses access to digital course materials on the first day of class until the add/drop date. Barnes & Noble offered those course materials at the First Day affordable price, the lowest price available as agreed upon by the respective publisher, Barnes & Noble, and FIU. Students who did not pay had the access to the materials revoked.

While this unique program generated the greatest benefit to our students, it was not sustainable or scalable due to the manual back-end processing by the bookstore and participating publishers. Given the success of the program and FIU's commitment to textbook affordability, FIU is currently implementing a full-fledged First Day program, through which course material costs are billed to the student accounts via the opt-in

functionality in Canvas for all participating courses. The program is slated to go live in Spring 2021.

### **3. University Policies for the Posting of Textbooks and Instructional Materials**

a. Describe policies implemented to ensure the posting of textbook and instructional materials for at least 95% of all courses and course sections 45 days before the first day of class. For course sections that require or recommend textbooks and instructional materials based on individual student needs (e.g., audition/performance, directed independent study, research topic) that may miss the posting date, please reference these as exceptions in 3(d).

*Response:*

FIU's Regulation 1103 on Textbook Affordability requires all instructors to post required and recommended textbooks and course materials 45 days in advance of the first day of classes. The Office of the Provost has established a communication timeline to remind course instructors, chairs and deans each semester of the respective adoption deadline. The first notification is sent out 75 days prior to the start of the next semester. Repeat reminders follow 60 and 55 days out. As of 50 days prior to the start of the next semester, the respective department chairs are required to submit any pending adoptions on behalf of their faculty.

For Fall 2019 and Spring 2020, faculty utilized Barnes & Noble's FacultyEnlight platform for textbook and course materials adoptions, which feeds this information into FIU's course registration system for all courses and course sections. In addition, Barnes & Noble maintains a searchable website for FIU Course Materials on which students can find required or recommended course materials by campus, term, department, course and section. The website also details pricing options for all items (i.e. rent new, rent used, buy new, buy used, rent digital, buy digital) acquired through Barnes & Noble FIU book stores.

In order to improve the efficiency and effectiveness of the adoption process, FIU and Barnes & Noble College (BNC) collaborated in developing the next generation of its nation-wide adoption platform: Adoptions & Insights Portal (AIP). This effort has largely been due to our persistent requests for a more use-friendly system for faculty as well as administrators alike. AIP was piloted at FIU in the Summer of 2020 and fully deployed in Fall 2020. The user-interface for the entry of adoptions, communication tools, as well as the dashboard for the reporting of timely adoption submissions all have greatly improved the process. Its configuration is also in alignment with the State of Florida's requirements in regard to enforcing adoption submissions by the legal deadline. A future iteration, expected to be available for Spring 2021 adoptions, has been designed to collect reasonable justifications for adoption actions taken after the legal deadline at the time of submission.

b. Are the policies effective in meeting the reporting requirement? If not, what measures will be taken by the institution to increase faculty and staff compliance for meeting the reporting requirement?

*Response:*

Overall, the policies sufficiently guide the institutional policies and common practices for textbook and course materials adoptions and selections processes. In regard to ensuring timely adoptions and documenting justifications for late submissions, we have designed a process to collect such justifications at the time an adoption is entered in the Adoption & Insights Portal (AIP) hosted by Barnes & Noble rather than collecting them manually at the end of the semester. We expect that this feature will be fully deployed for Spring 2021 textbook adoptions and result in the comprehensive reporting of justified late adoptions. This process design has been created in consultation with our SUS sister institutions FAMU, FGCU and UCF to establish a consistent approach for all campuses that utilize Barnes & Noble's Adoptions & Insights Portal.

c. Report the number of course sections and the total percentage of course sections that were able to meet the textbook and instructional materials posting deadline for the academic year. Note: A course section is in compliance if all textbooks and instructional materials in the course section have been entered by the deadline.

*Response:*

Semester	Total Course Sections	Compliant (timely)	Compliant (justified late)	Compliant (exceptions)	Percentage of Compliance
Fall 2019	7,760	5,173	497	1,735	95.43%
Spring 2020	7,449	4,663	594	1,761	94.21%

Reasons for necessitated changes after the required deadline, which we report as justified late adoption submissions, include that the course section may have been added to the schedule, a change of the instructor of record, or the merging of course sections 44 days or less prior to the first day of class.

Exceptions are granted to course types such as internships, graduate thesis or dissertation and individual performance instruction, which by their very nature generally do not require textbook or other instructional materials. In the rare instance where an instructor wishes to adopt a textbook or other materials for such a course type, he/she may still do so.

d. Report the number of course sections and the total percentage of course sections that necessitated change(s) in materials after the posting deadline. Provide an explanation for the change(s) in materials after the required deadline.

*Response:*

See table and explanation under 3.c.

e. Report the number of course sections and the total percentage of course sections that were not able to meet the textbook and instructional materials posting deadline for the academic year. Provide an explanation as to why the course sections were not able to meet the posting deadline. Note: A course section is not considered in compliance if all textbooks and instructional materials in the course section were not entered by the deadline.

*Response:*

Semester	Total Course Sections	Not Posted Timely	Percentage of Non-Compliance
Fall 2019	7,760	355	4.57%
Spring 2020	7,449	431	5.79%

Instructors may have been unaware of the posting deadline or that a sub-section was added to the course for which they already had a timely adoption on record.

f. Report the number of courses that received an exception to the reporting deadline. Describe the exception(s) provided.

*Response:*

See table under explanation under 3.c.



## Appendix A

Detailed list of course title(s) and number of section(s) that do not require or recommend the purchase of a textbook(s) and instructional material(s).

Fall 2018			Spring 2019		
Course	Course Name	Nr. of Sections	Course	Course Name	Nr. of Sections
AFA 2004	Black Pop Cult Global Dim	2	AFA 2004	Black Pop Cult Global Dim	1
AMH 2020	Amer Hist Since 1877	1	AMH 2020	Amer Hist Since 1877	11
AMH 2041	Origins Amer Civ	1	AMH 2041	Origins Amer Civ	1
AMH 2042	Mod Amer Civ	2	AMH 2042	Mod Amer Civ	2
AST 1002L	Descriptive Astronomy Lab	4	ARH 2000	Exploring Art	1
BSC 2010L	Gen Biology Lab I	8	BSC 2010L	Gen Biology Lab I	6
BSC 2011	General Biology II	1	BSC 2011	General Biology II	1
BSC 2011L	Gen Biology Lab II	6	BSC 2011L	Gen Biology Lab II	6
BSC 2023	Human Biology	1	BSC 2023	Human Biology	1
BSC 2023L	Human Bio Lab	1	BSC 2023L	Human Bio Lab	1
CGS 2518	Computr Data Analys	1	CHM 1020	Chemistry & Society	1
CHM 1020L	Chem & Society Lab	2	CHM 1020L	Chem & Society Lab	1
CHM 1033L	Survey Chem Lab	7	CHM 1033L	Survey Chem Lab	5
CHS 3501L	Surv For Sci Lab	9	CHM 1045	Gen Chemistry I	1
DEP 2000	Human Growth Dev	1	CHS 3501L	Surv For Sci Lab	7
ECS 3021	Women Econ Devel	1	COP 2210	Programming I	1
EGS 1041	Tech, Humans and Soc	1	COP 2250	Java Programming	2
ENC 1101	Writing and Rhetoric I	3	DEP 2000	Human Growth Dev	1
ENC 1102	Writing and Rhetoric II	1	ECO 2013	Principles Macroeco	1
ENG 2012	Approaches To Lit	1	ECO 2023	Principles Microeco	1
ESC 1000L	Intro to Earth Science Lab	14	ECS 3021	Women Econ Devel	1
EUH 2011	West Civ: Early Eur	1	EGS 1041	Tech, Humans and Soc	1
EUH 2030	West Civ: Mod/Eur	1	ENC 1101	Writing and Rhetoric I	1
EVR 1001L	Intro Environment Sci Lab	22	ENC 1102	Writing and Rhetoric II	6
EVR 3011	Evr Sci-Pollution	1	ENC 3311	Adv Writing & Res	1
GLY 1010L	Physical Geology Lab	18	ESC 1000L	Intro to Earth Science Lab	13
GLY 1101L	History Of Life Lab	3	EUH 2021	West Civ: Med/Mod	1
GLY 3039	Environ Geology	1	EUH 2030	West Civ: Mod/Eur	1
HUN 2000L	Fnd Nutr Sci Lab	10	EVR 1001L	Intro Environment Sci Lab	20
IDS 3189	Global Public Health Develop	1	EVR 1017	Global Env & Soc	1
IDS 3309	How We Know What We Know	2	EVR 3011	Evr Sci-Pollution	1
IDS 3333	Diversity of Meaning	1	GLY 1010L	Physical Geology Lab	13
IDS 3336	Artistic Expression	3	GLY 1101L	History Of Life Lab	2
INR 3081	Contem Intl Probs	2	HUN 2000L	Fnd Nutr Sci Lab	10
LAH 2020	Latin American Civ	2	IDH 1002	Honors Seminar II	10
LIT 1000	Intro to Literature	1	IDS 3212	Science and Global Life	1



Fall 2018		
Course	Course Name	Nr. of Sections
MCB 2000L	Intro Microbio Lab	10
MUL 1010	Music Lit/Appreciation	10
OCE 3014L	Oceanography Lab	2
PCB 2061	Intro Genetics	1
PHI 2010	Intro to Philosophy	5
PHY 2048L	General Phys Lab I	4
PSY 2012	Intro To Psychology	1
SLS 1501	First Year Exper	68
STA 2122	Stat for Behav Scien I	1
SYD 3804	Sociology Of Gender	2
SYG 2000	Intro Sociology	3
SYG 3002	Basic Ideas Of Soc	1
TPP 2100	Intro To Acting	1
WOH 2001	World Civilization	1
WST 3015	Intro Global Gender	1
WST 3641	LGBT and Beyond	2

Spring 2019		
Course	Course Name	Nr. of Sections
IDS 3212	Science and Global Life Lab	1
IDS 3309	How We Know What We Know	2
IDS 3336	Artistic Expression	4
INR 3081	Contem Intl Probs	1
LIT 1000	Intro to Literature	3
MAC 1105	College Algebra	1
MCB 2000L	Intro Microbio Lab	10
MUL 1010	Music Lit/Appreciation	11
OCE 3014L	Oceanography Lab	2
PCB 2061	Intro Genetics	1
PCB 2061L	Intro Genetics Lab	1
PHI 2010	Intro to Philosophy	8
PHI 2600	Intro Ethics	1
PSY 2012	Intro To Psychology	1
SLS 1501	First Year Exper	32
SPC 2608	Public Speaking	1
STA 2122	Stat for Behav Scien I	1
SYD 3804	Sociology Of Gender	2
SYG 2000	Intro Sociology	1
SYG 3002	Basic Ideas Of Soc	1
WOH 2001	World Civilization	1
WST 3015	Intro Global Gender	1

Fall 2019		
Course	Course Name	Nr. of Sections
AFA 2004	Black Pop Cult Global Dim	1
AMH 2020	Amer Hist Since 1877	4
ARH 2000	Exploring Art	1
AST 1002L	Descriptive Astronomy Lab	3
BSC 2023	Human Biology	1
BSC 2023L	Human Bio Lab	1
CHM 1020	Chemistry & Society	1
CHM 1033L	Survey Chem Lab	5
CHS 3501L	Surv For Sci Lab	5
COM 3404	Nonverbal Communication	1
COM 3461	Intercultural Comm	1
CPO 2002	Intro Comp Pol	1
DEP 2000	Human Growth Dev	1
ECO 2013	Principles Macroeco	1
ECO 2023	Principles Microeco	4

Spring 2020		
Course	Course Name	Nr. of Sections
ANT 3212	World Ethnographies	1
ENC 1102	Writing and Rhetoric II	1
HUN 2000L	Fnd Nutr Sci Lab	10
IDH 1002	Honors Seminar II	11
IDS 3212	Science and Global Life	1
IDS 3212 Lab	Science and Global Life Lab	1
IDS 3309	How We Know What We Know	1
IDS 3333	Diversity of Meaning	1
IDS 3336	Artistic Expression	5
INR 2001	Intro To Intl Rels	2
INR 3081	Contem Intl Probs	3
LIT 1000	Intro to Literature	3
MAC 1105	College Algebra	1
MAC 1114	Trigonometry	1
MAC 1140	PreCalculus Algebra	2

Fall 2019			Spring 2020		
Course	Course Name	Nr. of Sections	Course	Course Name	Nr. of Sections
ECS 3021	Women Econ Devel	1	MAC 1147	PreCal Alg and Trig	5
EGS 1041	Tech, Humans and Soc	1	MCB 2000L	Intro Microbio Lab	10
ENC 1101	Writing and Rhetoric I	3	MUL 1010	Music Lit/Appreciation	10
ENC 1102	Writing and Rhetoric II	3	OCE 3014L	Oceanography Lab	2
ESC 1000L	Intro to Earth Science Lab	11	PCB 2061	Intro Genetics	1
EUH 2011	West Civ: Early Eur	1	PCB 2061L	Intro Genetics Lab	1
EUH 2021	West Civ: Med/Mod	1	PHI 2010	Intro to Philosophy	3
EUH 2030	West Civ: Mod/Eur	1	POS 2041	American Government	2
EVR 1001	Intro Environmental Scien	3	POT 3013	Anct & Medv Pol Thry	1
EVR 1001L	Intro Environment Sci Lab	17	POT 3302	Political Ideologies	2
EVR 1017	Global Env & Soc	1	PSY 2012	Intro To Psychology	1
GLY 1010L	Physical Geology Lab	11	SLS 1501	First Year Exper	33
GLY 1101L	History Of Life Lab	3	SPC 2608	Public Speaking	2
GLY 3039	Environ Geology	1	SYD 3804	Sociology Of Gender	1
HUN 2000L	Fnd Nutr Sci Lab	10	SYG 2000	Intro Sociology	3
IDS 3309	How We Know What We Know	1	SYG 2010	Social Problems	1
IDS 3333	Diversity of Meaning	1	THE 2000	Theatre Appreciation	1
IDS 3336	Artistic Expression	4	TPP 2100	Intro To Acting	1
INR 2001	Intro To Intl Rels	2	WST 3641	LGBT and Beyond	1
INR 3081	Contem Intl Probs	4			
LAH 2020	Latin American Civ	1			
LBS 3001	Intro Labor Studies	1			
LIT 1000	Intro to Literature	1			
MCB 2000L	Intro Microbio Lab	10			
MUL 1010	Music Lit/Appreciation	10			
OCE 3014L	Oceanography Lab	1			
PCB 2061	Intro Genetics	1			
PCB 2061L	Intro Genetics Lab	1			
PCB 2099L	Fnd. Human Phys. Lab	4			
PHI 2010	Intro to Philosophy	3			
PHY 2048	Physics W/Calculus I	3			
PHY 2048L	General Phys Lab I	1			
POS 2041	American Government	2			
SLS 1501	First Year Exper	60			
SPC 2608	Public Speaking	1			
STA 2023	Stat Bus & Eco	1			
STA 3111	Statistics I	1			
SYD 3804	Sociology Of Gender	1			
SYG 2000	Intro Sociology	5			
TPP 2100	Intro To Acting	2			
WST 3015	Intro Global Gender	1			
WST 3641	LGBT and Beyond	2			

## **ACADEMIC AFFAIRS REGULAR REPORTS**

- I. Academic and Career Success**
- II. Engagement**
- III. Enrollment Management and Services**
- IV. Information Technology**
- V. Research and Economic Development / University Graduate School**
- VI. Academic & Student Affairs**

## **I. ACADEMIC AND CAREER SUCCESS**

### **1. Supporting Students During COVID**

During the Summer, many of our students had questions and concerns about class modalities for the Fall semester. To ensure that we were responsive to their questions and they were staying on track for graduation, FIU developed a dedicated course concierge to assist students with questions about their courses. Dr. Charlie Andrews, Assistant Vice President for Academic and Student Affairs was selected to be that direct resource available to students to help navigate any challenges they encountered with the movement of courses to remote or online modalities. With more than 20 years working at FIU in a variety of roles and departments, Dr. Andrews is uniquely qualified to work with the various colleges and departments at FIU to make sure our students had the courses they need to progress in their studies. Dr. Andrews worked behind the scenes with deans, academic advisors, faculty, and administrators throughout the University to solve problems and answer questions. The AskCharlie! Campaign was structured to provide quick, accurate, and individualized responses to student's questions and guidance on how to successfully manage their fall class schedule. Students submitted their questions and concerns to AskCharlie.FIU.edu and received the assistance they needed to progress. We also increased our social media presence to give students information during a time when everyone was remote. The recently created Instagram account @FIUAdvising has been a platform to push out Covid related announcements, including class modalities, OneStop deadlines, virtual graduation updates, and AskCharlie!. Since March 2020, this account has seen a 61.5% follower increase and a reach of 11,198.

### **2. Targeted Retention and Graduation Efforts**

ACS recently hired a Student Success Advocate and two Student Success Specialists dedicated to supporting the colleges with their student success efforts. The Advocate works with data teams across the university to identify students for retention and/or graduation-related outreach. The Specialists then reach out to the students, assist where they can and document any additional barriers the students are facing. All outreach efforts are documented and notes are added to the students' records in Panther Success Network so advisors can further assist the students. The Advocate then collaborates with offices across the university to resolve pending barriers to success. This past Summer, the Advocate and Specialists focused on the students who were at risk of being dropped from their Summer B courses for non-payment. Through their efforts, 91% of the 335 students at risk of being dropped we able to resolve their issues and remain enrolled in Summer B courses.

To ensure our students had the support they needed to be able to register for Fall, the Advocate identified all 2018 and 2019 FTIC students who had not yet enrolled and those students were contacted by the Specialists to encourage them to enroll and to document any problems they were encountering. Examples of problems that were identified include students wanting to change majors, students stating that they are having difficulty reaching an advisor, students with past due balance preventing enrollment, and

students with questions about fall courses due to COVID-19. A summary of information gathered was shared with the Colleges once the outreach was completed.

Progress Made To-Date (8/26/2020):

- 91.0% of all 2019 FTIC students have enrolled for Fall 2020 (compared to 89.9% at this point last year for the 2018 FTIC cohort)
- 82.3% of the 2018 FTIC students have enrolled for Fall 2020 (compared to 81.0% at this point last year for the 2017 FTIC cohort)

## **II. ENGAGEMENT REPORT**

### **1. Community Outreach and Events: TDN and LSSF webinars, FIU Cafecito Chats**

The Office of Engagement began multiple series of online community engagement activities immediately following campus closures and community quarantine due to the COVID-19 pandemic.

FIU Cafecito Chats, a daily engagement talk show, features local and national community leaders, FIU faculty, staff and students and other local celebrities as featured guests. An average of 120 people watch the show, which is broadcast live via Zoom and Facebook Live. The show was created by the office in an effort to continue outreach and engagement activities. To date, the Office has aired 86 episodes and engaged over 35,000 people.

In addition to 305 Cafecito Chats, the Talent Development Network and Life Sciences of South Florida host twice weekly webinars on topics relevant to the initiatives. Over 5,000 participants have engaged in these topic-specific webinars.

### **2. Future of Work: Urban Potential Laboratories (UP Labs) and FIU SkillsForce**

UP Labs Cohort III, consisting of twenty-seven, non-traditional adult learners began the 14-week healthcare-focused curriculum on March 2nd, 2020 and 100% completed the program and graduated on June 19th, 2020 via a virtual celebration attended by students and their families, FIU administration, and local healthcare partners. The graduates are currently completing experiential learning experiences in health-related internships across the region. Three graduates began new careers in healthcare prior to graduation.

FIU Engagement launched SkillsForce immediately following the beginning of the pandemic to connect temporarily displaced workers with immediate opportunities for employment and skills training. Over 100 community members and 80 employers took the SkillsForce survey and subscribed to the Weekly SkillsForce Newsletter. On May 28th, 2020, the SkillsFest Resource Fair took place via Zoom. The keynote address was delivered by Henry Mack, Chancellor for Career, Technical and Adult Education for the Florida Department of Education. A presentation on the current state of the economy was delivered by Dr. Maria Ilcheva of the FIU Metropolitan Center. Additionally, two panel

discussions and five breakout sessions were hosted focused on the future of Miami's hospitality industry and accessing resources for families.

Those seeking employment were invited to participate in breakout rooms hosted by partners at General Assembly, Catalyst Miami, and Microsoft focused on employability readiness.

The online event has been viewed 298 times.

### **3. Community Coalitions: Talent Development Network Summer Youth Internship Program**

The Summer Youth Internship Program (SYIP) is a 5-week paid work-based learning experience between Miami-Dade County Public Schools (M-DCPS) high school students and businesses and organizations throughout Miami-Dade County. The Florida International University Office of Engagement and the Talent Development Network work in collaboration with M-DCPS to support local higher education institutions in the region in placing interns.

FIU has participated for the last four years hosting students from various M-DCPS high schools. This year FIU hosted 32 students across 13 departments virtually.

FIU closes out the program with a reception where we highlight intern projects. This year, the Division of Information Technology's interns worked on a project to effectively communicate to the FIU community the areas that are currently undergoing deep cleaning due to reports of positive COVID-19 cases by building a website that is updated in real time as departments report damage, cleaning, or contamination.

## **III. ENROLLMENT MANAGEMENT AND SERVICES REPORT**

### **1. University Admissions**

As of July 30<sup>th</sup>, our Preeminent Cohort of Fall FTIC consists of 1,992 matriculated students (as of the reporting date, 1,552 have enrolled). They have an average GPA of 4.3 and an average SAT score of 1271; both of these values are well above Florida's preeminent level. We admitted 46% of the FTIC applications that we received. We have several orientations still scheduled, and we expect these numbers to evolve slightly.

With the incoming class wrapping up, the Office of Admissions has started implementing recruitment efforts for the class of 2021. The "Apply in July" campaign kicked off on July 1 with an Instagram Live celebration with 63 attendees. Over 60,000 emails encouraging students to start the application process were sent to prospective freshmen from all over the world. The first application was received on July 1, 2020, from a prospective student in Jupiter, FL. She will be sent an FIU T-Shirt and recognized on social media.

On July 25, 2020, the Office of Admissions will host a virtual event for all high school seniors who also participate in dual enrollment with FIU. This event includes a presentation done by the Honors College, the Office of Scholarships and Office of Admissions and includes an application workshop to help guide them through the process.

## University Enrollment Summer 2020

As of July 14, 2020, 42,432 students have enrolled in courses for the summer 2020 term. This represents a 5% or 2,205 student increase as compared to summer 2019 enrollment of 40,227.

Fundable FTE's have increased by 9% or by 948, from 10,062 in summer 2019 to 11,010 in summer 2020. Student credit hour production increased by 25,934 or 9%, from 287,214 in summer 2019 to 313,148 in summer 2020.

### HEADCOUNT

Summer Term Comparisons				
Headcount	Summer 2020	Summer 2019	Difference	% Difference
	42,432	40,227	2,205	5%

### FUNDABLE FTE'S

Summer Term Comparisons				
FTE	Summer 2020	Summer 2019	Difference	% Difference
	11,010	10,062	948	9%

### STUDENT CREDIT HOURS

Summer Term Comparisons				
SCH	Summer 2020	Summer 2019	Difference	% Difference
	313,148	287,214	25,934	9%

### FUNDABLE STUDENT CREDIT HOURS

Summer Term Comparisons				
UG SCH	Summer 2020	Summer 2019	Difference	% Difference
	254,921	228,007	26,914	12%
G SCH	Summer 2020	Summer 2019	Difference	% Difference
	26,813	24,880	1,933	8%

*As of July 17, 2020*

## Fall 2020

As of July 14, 2020, 38,422 students have enrolled in courses for the fall 2020 term. This represents a 2% or 587 student increase as compared to fall 2019 enrollment of 37,835.

Fundable FTE's have increased by 1% or by 124, from 14,010 in fall 2019 to 14,134 in fall 2020. Student credit hour production remained flat, when compared to fall 2019.

### HEADCOUNT

Fall Term Comparisons				
Headcount	Fall 2020	Fall 2019	Difference	% Difference
	38,422	37,835	587	2%

### FUNDABLE FTE'S

Fall Term Comparisons				
FTE	Fall 2020	Fall 2019	Difference	% Difference
	14,134	14,010	124	1%

### STUDENT CREDIT HOURS

Fall Term Comparisons				
SCH	Fall 2020	Fall 2019	Difference	% Difference
	406,747	405,176	1,571	0%

### FUNDABLE STUDENT CREDIT HOURS

Fall Term Comparisons				
UG SCH	Fall 2020	Fall 2019	Difference	% Difference
	361,206	353,876	7,330	2%
G SCH	Fall 2020	Fall 2019	Difference	% Difference
	29,007	28,648	359	1%

*As of July 17, 2020*

## 2. International Admissions

As the applications table below highlights, we enrolled fewer new FTIC and Transferring international students during summer 2020 than in summer 2019. At the end of the summer registration cycle for summer, we were down 15 new international FTIC and 34



new transferring students. In addition to our increases in GPA and standardized test scores for admission, the global pandemic had an impact on students' abilities to obtain visas, travel to the United States, and developing course loads that would met the requirements for studying in the US.

The point in time comparison (07/17/2020 versus 07/19/2019) associated with fall is slightly more positive. Although we are behind last year in terms of both matriculated FTIC and new transferring students, we are substantially ahead in new international student enrollment at both levels. For new international FTIC, we are ahead of last year by 32%; we are ahead of last year's new transferring headcount by 73%.

We are working with students who will not be able to enroll for the upcoming fall term to transfer their I-20 entry dates to either the B session of Fall or Spring. In collaboration with University Admissions, we are replacing our "in-person" admissions events with virtual activities that are we can modularize and market to all prospective students. We intend on recovering some of decrease stemming from the summer enrollment with new international students for spring 2021.

*Summer, Fall, and Spring 2020-21 Point in Time Comparisons 7/17/2020*

		Actual Difference									Percentage Difference		
		SU19	FA19	SP20	SU20	FA20	SP21	SU	FA	SP	SU	FA	SP
FTIC	Applied	308	928	305	205	750	342	-103	-178	37	-33%	-19%	-12%
	Admitted	182	243	119	113	241	135	-69	-2	16	-38%	-1%	13%
	Matriculated	61	83	26	39	71	20	-22	-12	-6	-36%	-14%	-23%
	Enrolled	45	31	0	30	41	0	-15	10	0	-33%	32%	0%
Transfer	Applied	367	1,402	154	231	1,172	90	-136	-230	-64	-37%	-16%	-42%
	Admitted	247	609	23	136	477	32	-111	-132	9	-45%	-22%	39%
	Matriculated	209	391	6	112	308	20	-97	-83	14	-46%	-21%	233%
	Enrolled	129	77	0	90	133	0	-34	56	0	-27%	73%	0%

### 3. Transfer and Transition Services

*Transfer Credit Processing and Course Equivalencies*

The *Transfer Credit Processing* team expedited the posting of International Baccalaureate (IB) and Cambridge AICE (A-Level and AS-Level) test scores to ensure that students and advisors can review course equivalencies and enroll in the appropriate courses. The team is also updating student records (e.g., transfer and test credit, milestones) as we near the start of the fall term and support the remaining (10) transfer student orientations. The

*Course Equivalency* team entered their peak period in course evaluations as of the first of July, and they are working diligently to ensure these are timely. This team recently completed the articulation of general education transfer rules (not otherwise articulated) for the top sending Florida public colleges and universities.

During the last few months, TTS offered a redesigned training for new academic advisors. We used the results of a Qualtrics survey of advisors to tailor our training events to meet the needs of advisors.

FIU will co-host the third annual *Transfer Summit* on October 26, 2020. In an abundance of caution due to the coronavirus pandemic, the summit will be offered remotely. The summit convenes transfer professionals from the FCS and SUS who share best practices, new programs and initiatives, legislative updates, etc. The planning committee comprises members of the Florida Consortium of Metropolitan Research Universities, FAU, FIU, UCF, and USF.

#### *Connect4Success*

FIU is the proud partner of BC2FIU, a guided pathway for Broward College students transitioning to FIU from articulated AS pathways. BC2FIU is generously funded by the Helios Foundation and includes scholarships for participating students.

Throughout June, Bridge Advisors offered three (virtual) transition workshops for MDC, BC, and PBSC students intending to transition to FIU in fall 2020. Students unable to attend a workshop were emailed a step-by-step outline of the transition process. Our team is developing a pre-recorded version of the workshop to include in our website. As we transition C4S students to FIU, we also welcome the new C4S cohort to their chosen partner college. Our annual welcome Kickoff is offered at each partner college during the summer. This year, each Kickoff will be offered virtually, and for the first time, the program will include a session on navigating and succeeding in remote and online courses. Also new this year, students will be able to use FIU One Card's online photo submission portal and have their student ID shipped to their home address.

On July 13<sup>th</sup>, the C4S team attended a customized training offered by FIU's Counseling and Psychological Services (CAPS). The training was in response to Bridge Advisors expressing students' increased stress and anxiety regarding remote learning, plans for reopening, and the consequences of sitting out for a term. CAPS used this first session to learn more about the Bridge Advisor role and the students they serve, address self-care, and offer the team a list of community resources. A second session will offer Bridge Advisors tools and strategies to effectively respond to students who express varying degrees of distress due to the pandemic and/or its impact.

## 4. Financial Aid

### Disbursement

As of July 17, 2020 The Financial Aid Office has disbursed \$536.1 million to 44,399 students. For the same time period last year \$511.2 million was disbursed to 43,428 students. This represents a 3% increase in students and a 5% increase in funds disbursed.

### Cares-FSEOG Emergency Grants

In addition to the CARES-Act Emergency grants to students of \$19 million, (detailed in the Office of Scholarships Section), The US Department of Education gave Institutions the flexibility to transfer unexpended Federal Work Study (FWS) to Federal Supplemental Education Opportunity Grant, (FSEOG) to award as direct emergency grants to students. In addition, The Office of Financial Aid was able to transfer current FSEOG awards for Summer to Institutional grants enabling us to increase the amount of Cares-FSEOG emergency grants we could award. We were able to award CARES-Act direct emergency grant applicants who we were unable to fund due to awarding all \$19 million earlier.

The details are in the tables that follow:

By Semester	Count	%	Offered Amount	Average Disbursement Amount
Spring 2020	-	0%	\$ -	\$ -
Summer 2020	591	100%	\$ 1,264,280	\$ 2,139
Fall 2020	-	0%	\$ -	\$ -
	<b>591</b>		<b>\$ 1,264,280</b>	<b>\$ 2,139</b>

Student Category	Count	%	Offered Amount	Average Disbursement Amount
Undergraduate	591	100.0%	\$ 1,264,280	\$ 2,139
Graduate	-	0.0%	\$ -	\$ -
College of Medicine	-	0.0%	\$ -	\$ -
Law	-	0.0%	\$ -	\$ -
	<b>591</b>		<b>\$ 1,264,280</b>	<b>\$ 2,139</b>

Pell Eligible	Count	%	Offered Amount	Average Disbursement Amount
Pell	394	67%	\$ 900,722	\$ 2,286
Non-Pell	197	33%	\$ 363,558	\$ 1,845
	<b>591</b>		<b>\$ 1,264,280</b>	<b>\$ 2,139</b>

Student Category	Count	%	Offered Amount	Average Disbursement Amount
College Freshman	11	1.9%	\$ 20,811	\$ 1,892
College Sophomore	33	5.6%	\$ 57,711	\$ 1,749
College Junior	206	34.9%	\$ 447,311	\$ 2,171
College Senior	341	57.7%	\$ 738,447	\$ 2,166
	<b>591</b>		<b>\$ 1,264,280</b>	<b>\$ 2,139</b>

By College	Count	%	Offered Amount	Average Disbursement Amount
Chaplin School of Hospitality & Tourism Mgmt	21	4%	\$ 43,206	\$ 2,057
College of Arts, Sciences & Education	234	40%	\$ 482,775	\$ 2,063
College of Business	108	18%	\$ 241,574	\$ 2,237
College of Communication, Architecture & the Arts	60	10%	\$ 133,509	\$ 2,225
College of Engineering & Computing	63	11%	\$ 129,264	\$ 2,052
Green School of International & Public Affairs	91	15%	\$ 203,850	\$ 2,240
Stempel College of Public Health & Social Work	7	1%	\$ 15,696	\$ 2,242
Wertheim College of Nursing & Health Sciences	7	1%	\$ 14,406	\$ 2,058
	<b>591</b>		<b>\$ 1,264,280</b>	<b>\$ 2,139</b>

## Fall 2020 Awarding

We continue our efforts in awarding incoming Fall 2019 Undergraduate students. Our current numbers as of July 17<sup>th</sup>, 2020.

Awarding Group	# Students
Early Fall Freshman	2,504
Fall Freshman	3,048
Fall Transfers	3,646
Total	9,198

We will continue to award new incoming Fall 2020 students on a weekly basis leading up to the beginning of Fall semester.

## 5. Office of Scholarships

The Office of Scholarships continues to lead the student emergency aid process in response to Covid-19. Since April 2020, we have received and processed over 15,000 applications for emergency assistance. We successfully distributed our student allocation of the CARES Act (see details below) and continue to work with the FIU Foundation and university leadership to find funding for students facing financial hardship.

## CARES Act Funding

FIU acknowledges it signed and returned to the U.S. Department of Education the Certification and Agreement on April 11, 2020, and gave the assurance that FIU has used more than 50% of the funds received under section 18004(a)(1) of the CARES Act to provide Emergency Financial Aid Grants to students.

1. The total amount of Emergency Financial Aid Grants distributed to students under section 18004(a)(1) of the CARES Act as of June 25, 2020, is \$19,150,979.00.
2. The estimated total number of students at FIU eligible to participate in programs under section 484 in Title IV of the Higher Education Act of 1965 and thus eligible to receive Emergency Financial Aid Grants under section 18004(a)(1) of the CARES Act is 34,024.
3. The total number of students who received an Emergency Financial Aid Grant under section 18004(a)(1) of the CARES Act is 9,551.
4. The methods used to determine which and how much students receive CARES Emergency Financial Aid Grants are as follows -
  - A currently enrolled undergraduate or graduate student for term of disbursement
  - Eligible for funding under a Title IV of the Higher Education Act of 1965
  - Maximum total award per student is \$6,195 (largest Pell award).
  - Awards are prioritized based on student type and individual as explained below:
    - *Student Type Prioritization Hierarchy*
      - Pell eligible undergraduate students;
      - Undergraduate students within two (2) terms of graduation;
      - Retention/persistence; and
      - Graduate students.
    - *Need Type Prioritization Hierarchy*
      - Food;
      - Housing;
      - Educational Technology;
      - Health Care;
      - Child Care;
      - Other (books, transportation, etc).
5. The amount of need type awards are based on FIU's official cost of attendance as outlined in the chart below. For spring term requests, students may receive up to two (2) months of each individual need category and for the summer term students may receive up to three (3) months of each individual need category.

One (1) Month Living Expenses	UGRD GRAD	
ROOM (Housing)	383	766
BOARD (Food)	316	316
TRANSPORTATION	172	172

PERSONAL (utilities/medical/internet)	145	145
TOTAL	1016	1399

6. The instructions, directions, or guidance provided by FIU to all students concerning the Emergency Financial Aid Grants were sent via University email, published on the University website, and announced on the Student Portal. Instructions on how to complete our CARES Fund Application are provided on the FIU Emergency Aid application: [go.fiu.edu/eaidrequest](https://go.fiu.edu/eaidrequest)

### Florida International University

CARES Act funding will provide aid to students for expenses like course materials, technology, housing, food, health care, and childcare  
[https://www2.ed.gov/about/offices/list/ope/caresact.html?utm\\_content=&utm\\_medium=email&utm\\_name=&utm\\_source=govdelivery&utm\\_term=](https://www2.ed.gov/about/offices/list/ope/caresact.html?utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term=)

FIU's 50% Allocation	\$ 19,150,979.00
Total Disbursed Amount (YTD)	\$ 19,150,979.00
<b>Available Budget</b>	<b>\$ -</b>

By Semester	Count	%	Offered Amount	Average Disbursement Amount
Spring 2020	2,163	23%	\$ 4,219,548	\$ 1,951
Summer 2020	7,388	77%	\$ 14,931,431	\$ 2,021
Fall 2020	-	0%	\$ -	\$ -
	<b>9,551</b>		<b>\$ 19,150,979</b>	<b>\$ 2,005</b>

By Category	Duplicated Count	% of the total Population	Offered Amount	Average Disbursement Amount
Food	8,505	89%	\$ 5,948,462	\$ 699
Housing	7,032	74%	\$ 7,655,799	\$ 1,089
Car	6,465	68%	\$ 2,671,415	\$ 413
Personal	7,661	80%	\$ 2,875,303	\$ 375
	<b>9,551</b>		<b>\$ 19,150,979</b>	<b>\$ 2,005</b>

Student Category	Count	%	Offered Amount	Average Disbursement Amount
Undergraduate	8,540	89.4%	\$ 16,493,725	\$ 1,931
Graduate	856	9.0%	\$ 2,368,205	\$ 2,767
College of Medicine	64	0.7%	\$ 133,895	\$ 2,092
Law	91	1.0%	\$ 155,154	\$ 1,705
	<b>9,551</b>		<b>\$ 19,150,979</b>	<b>\$ 2,005</b>

Student Category	Count	%	Offered Amount	Average Disbursement Amount
College Freshman	162	1.9%	\$ 284,037	\$ 1,753
College Sophomore	972	11.4%	\$ 1,812,814	\$ 1,865
College Junior	2,370	27.8%	\$ 4,615,008	\$ 1,947
College Senior	5,036	59.0%	\$ 9,781,866	\$ 1,942
	<b>8,540</b>		<b>\$ 16,493,725</b>	<b>\$ 1,931</b>

Pell Eligible	Count	%	Offered Amount	Average Disbursement Amount
Pell	6,809	71%	\$ 13,371,386	\$ 1,964
Non-Pell	2,742	29%	\$ 5,779,593	\$ 2,108
	<b>9,551</b>		<b>\$ 19,150,979</b>	<b>\$ 2,005</b>

Pell-Eligible Students by EFC Breakdown	Count	%	Offered Amount	Average Disbursement Amount
0-1000	4,885	72%	\$ 9,642,898	\$ 1,974
1001-2000	601	9%	\$ 1,187,556	\$ 1,976
2001-3000	477	7%	\$ 910,935	\$ 1,910
3001-4000	399	6%	\$ 773,510	\$ 1,939
4001-5000	305	4%	\$ 593,488	\$ 1,946
Above 5000	142	2%	\$ 262,999	\$ 1,852
	<b>6,809</b>		<b>\$ 13,371,386</b>	<b>\$ 1,964</b>

By College	Count	%	Offered Amount	Average Disbursement Amount
Chaplin School of Hospitality & Tourism Mgmt	220	2%	\$ 454,243	\$ 2,065
College of Arts, Sciences & Education	3,779	40%	\$ 7,407,264	\$ 1,960
College of Business	1,597	17%	\$ 3,348,933	\$ 2,097
College of Communication, Architecture & the Arts	849	9%	\$ 1,664,693	\$ 1,961
College of Engineering & Computing	1,065	11%	\$ 2,079,292	\$ 1,952
College of Law	91	1%	\$ 155,154	\$ 1,705
Green School of International & Public Affairs	1,080	11%	\$ 2,107,494	\$ 1,951
Stempel College of Public Health & Social Work	218	2%	\$ 474,233	\$ 2,175
Wertheim College of Medicine	88	1%	\$ 212,105	\$ 2,410
Wertheim College of Nursing & Health Sciences	485	5%	\$ 1,117,124	\$ 2,303
Other	79	1%	\$ 130,443	\$ 1,651
	<b>9,551</b>		<b>\$ 19,150,979</b>	<b>\$ 2,005</b>

## Benacquisto Scholarship Program

We are excited to announce that FIU has qualified for the Benacquisto Scholarship program for the 20-21 year. The Benacquisto Scholarship Program is a State of Florida merit scholarship for high school graduates who receive recognition as a National Merit Scholar. Eligible scholars will receive an award equal to the institutional cost of attendance for an in-state student minus the sum of Bright Futures and the National Merit award. Out-

of-state students will receive an award equal to the in-state cost of attendance minus their National Merit award. These students are exempt from paying out-of-state tuition and fees.

## 6. University Registrar

### Updates to classes for Summer and Fall 2020 due to COVID19

For the Summer terms, the University Registrar changed a total of 3,421 classes were changed from in-person and hybrid to distance education/remote learning due to the COVID-19 restrictions.

Level	Number
Undergraduate	1,723
Graduate	1,698

The table below summarizes the courses by modality. For the summer semester, we collapsed all other modalities into “remote” with the exception of on-line.

TOTALS	Count of Modality	Percentage
<b>ALL Summer sessions</b>	<b>4,309</b>	
Internet/Fully Online	1,542	36%
Remote	2,767	64%

For Fall 2020, we converted forty-nine face to face classes to fully on-line; this action had an impact on more than 1,800 students. We moved these student into the updated class sections sent each student a written notification. We changed approximately 3,100 additional classes from hybrid or face-to-face to remote with corresponding class notes advising students of the change.



## Exception to grading system for Spring 2020 due to COVID-19

To assist students due to COVID19, for the Spring 2020 semester, we provided students with expanded opportunities to select grading options that would have no impact on GPAs; these included P (Pass) and NC (No Credit).

We received and approved a total of 17,754 requests from 10,002 unique students. The following provides a breakdown by graduate and undergraduate levels.

Career	Grade	COUNT		
UGRD	NC	5,541		
UGRD	P	11,484	<b>Total UGRD Approved Processed:</b>	<b>17,025</b>
GRAD	NC	83		
GRAD	P	450	<b>Total GRAD Approved Processed:</b>	<b>533</b>

To minimize the impact of the non-punitive grading system, we did not run academic dismissal for Spring term.

## Graduation Process Update

At the end of the Spring 2020 semester, we incorporated three additional colleges into the newly enhanced graduation process. Note that, In the Fall of 2019, we launched this process reform with the College of Arts, Science and Education (CASE). We included the College of Business, School of Hospitality Management, and School of International and Public Affairs in Spring 2020. Through this process, our department continues to improve customer service for students who can order transcripts with their degree posted much sooner than previously. Today, we can post degrees within one week following end of term (previously this process took about 4 to 5 weeks). This method also graduates students when all requirements are met, therefore reducing excess credits and improving graduation rates.

## Auto/batch graduations processed:

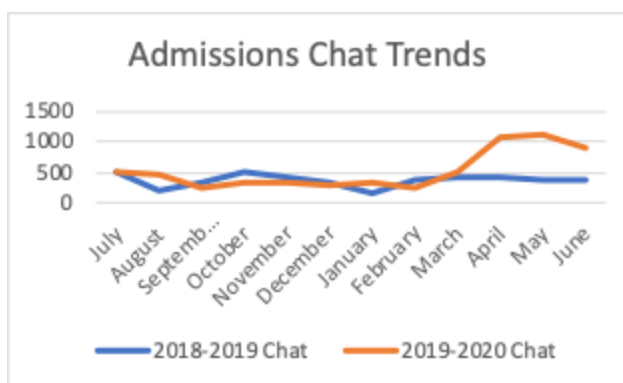
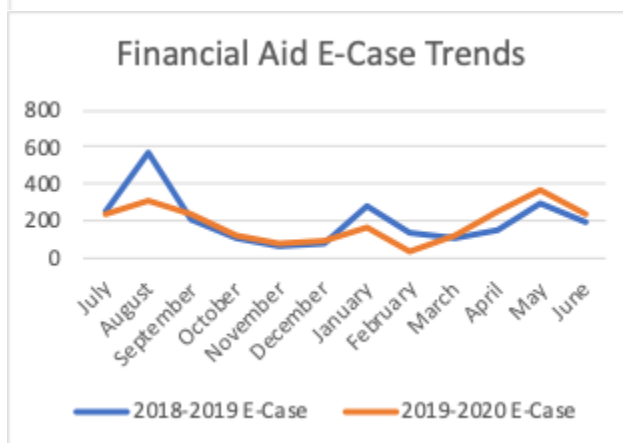
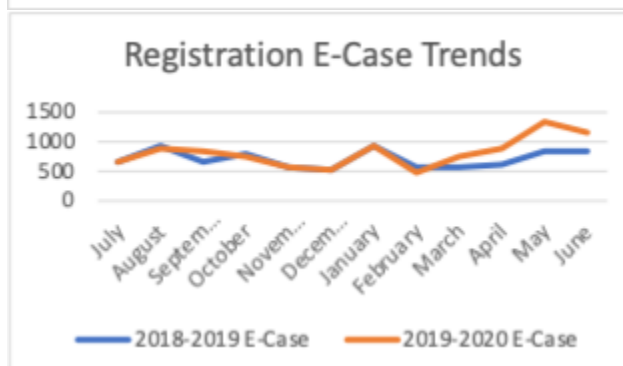
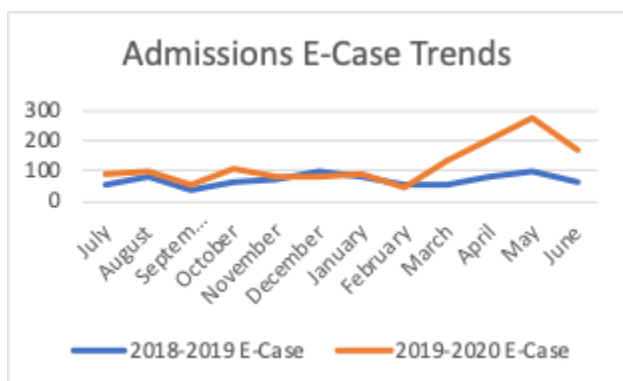
Academic Program	Number of Students
<b>Fall 2019</b>	<b>1,354</b>
College of Arts, Science & Education	1,354
<b>Spring 2020</b>	<b>3,186</b>
College of Arts, Science & Education	1,545
College of Business	784
School of Hospitality Management	168
School of International & Public Affairs	689

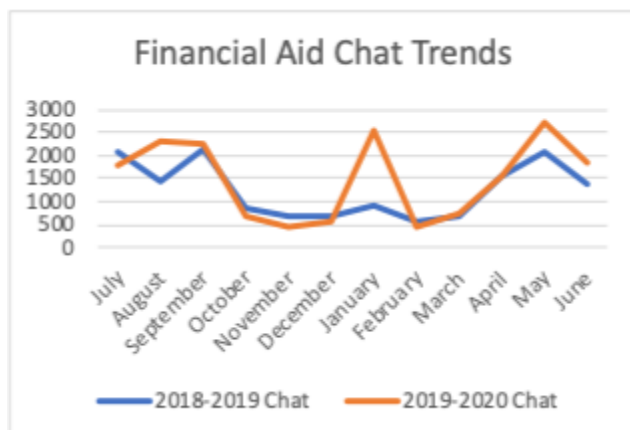
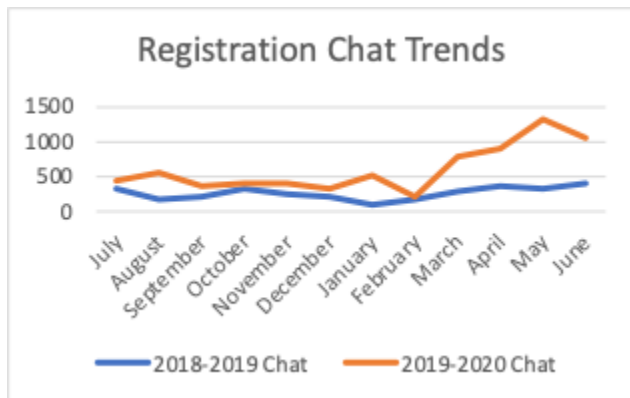
## 7. OneStop

The One Stop transitioned to serving students fully remotely on March 31<sup>st</sup>. We were able to provide each full-time staff member with an FIU issued laptop and headset that permit the staff to answer phone calls, emails, and chats from home. We have encountered minimal technical issues and have been able to resolve them expeditiously. Students are able to access One Stop via phones and chat 9AM – 8PM, Monday thru Thursday, and 9AM-6PM on Fridays. Staff are assigned a rotating schedule that assures that they are not assigned to either function for an entire day, this helps to prevent burn out and fatigue. The Summer 2020 peak time we were able to complete all services remotely.

FIU students have responded favorably via the customer satisfaction surveys that they receive after interacting with One Stop staff. During the week of May 11th, the first week of the summer semester, we received 227 completed surveys across phones and chat. Of those, 217 were rated satisfactory or better. We were able to achieve a 96% satisfaction rate from students responding to the surveys. That is evidence that the changes we have made to our operation are being well received by our students.

As the charts below indicate, we have experienced a significant increase in e-cases and chats for admissions, registration, and financial aid. Last year we outsourced the financial aid calls to a third-party vendor, and as a result we have been able to serve more students via phone, email, and chat.





The chart below indicates the handle rate of the calls to our call center since we began working remotely. The FIU Learning Community continues to rely on us for all of their admissions, registration, and financial aid inquiries. Staff are encouraged and thanked for their hard work, patience, and resolve during these unprecedented times.

**OneStop**

Month	Presented	Handled	Abandoned	Dequeued	HR
Mar-20	7802	6109	1243	450	78%
Apr-20	10047	7636	1417	941	76%
May-20	14620	9883	1846	2891	68%
Jun-20	11958	10188	1148	622	85%
Jul-20	5416	4338	631	447	80%

## 8. CRM

We are in the final stages of our Salesforce Lightning implementation and on time. Our goal with this project was to ensure that OneStop was utilizing the system prior to fall peak. Training has begun and will last until end of week. They will be in the new system by end of July. Giving them ample time to familiarize themselves with new features prior to the influx of students come the first week of class.

Over the last 3 months we have trained close to 220 staff members in 5 different departments. In addition to this, we have been preparing our communication plans for the 2021-2022 recruitment cycle, incorporating new branding language and style to 180 different digital communications that will launch starting mid-August. These communication will target students in high school from 9-12<sup>th</sup> grade, transfer students, C4S students at the participating colleges, and graduate students.

During COVID we have increased our adhoc communications and many areas have relied on our operations to send messages to students in digital format. From March 16<sup>th</sup> -July 10<sup>th</sup> we have sent 119 email messages. These communications were part of new initiatives during COVID such as virtual open house, virtual information sessions, Instagram Live promotions, cancelations of events, class registration reminders, and July 1 application open message for 2021-2022, just to name a few. All these emails have a total of 650,000 individual email generations. There are some overlaps since we sent some reminder messages to students.

We urgently developed new functionality to accommodate virtual events that are hosted by the Admissions Office. When Recruiters use VisitDays for zoom meetings with students, student information is tracked accurately in Salesforce and we will be able to determine how those students progressed through the admissions funnel. Ultimately, determining ROI on these particular events for the recruitment team.

Since our remote work environment has taken place the CRM office has completed 125 projects. These projects include feature enhancements, email automation projects, new field requests, and new report requests. These projects do not include our *day-to-day/business as usual* activities with regard to our Lightning upgrade.

#### **IV. INFORMATION TECHNOLOGY REPORT**

##### **1. Classroom Technology**

Over the Summer, the Division of IT has worked on updates to allow the faculty to accommodate in-person students who might encounter COVID related risk factors during the Fall term. With support from the Cares Act funding, the Division has augmented the access and installation of touchscreen computers with Zoom videoconferencing for over 260 FIU classrooms. Additionally, videoconferencing and digital annotation capabilities have been added to these computers to increase the interactivity in and out of the classroom. Faculty will now be able to annotate in a digital whiteboard in person via touchscreen computers, while accommodating students that need to participate remotely via Zoom.

##### **2. Security Enhancement Updates**

The Division has been working on standardizing the login pages for their enterprise applications. The new login page offers a modern and user-friendly interface, Two-Factor Authentication (2FA), and account management tools. In the Spring, FIUmail (faculty and staff email system) and Panthermail (student email system) were migrated to this new login page for authentication. In the upcoming weeks, we will be migrating all of the PeopleSoft applications (MyFIU/Campus Solutions, Financials, and Human Resources) to the new login page. In addition, as applications get migrated to the new login page users will benefit from Single Sign-on (SSO) between those applications.

##### **3. The 2020 National Initiative for Cybersecurity Education (NICE) Conference & Expo Goes Virtual**

The Division of IT along with the Jack D. Gordon Institute for Public Policy and New America have decided to reformat this year's NICE Conference and Expo to a virtual platform as part of our five-year grant awarded to us by the U.S. Department of Commerce's National Institute of Standards and Technology (NIST). This decision is an innovative solution during an evolving time, very much in tune to this year's conference theme, "New Decade, New Solutions: Meaningful Actions for an Evolving Cybersecurity Workforce." The conference will be done as a four-week virtual conference series that will bring together thought leaders from industry, government, academia, and non-profit organizations to address the community's cybersecurity education, training, and workforce needs.

#### **V. RESEARCH AND ECONOMIC DEVELOPMENT / UNIVERSITY GRADUATE SCHOOL**

##### **1. External Grant Awards' Performance**

External awards received during fiscal year (FY) 2019-2020 totaled \$196.7M, representing 25% increase from last fiscal year (\$157.3M). Part of this increase is due to one-time CARES Act funding of \$21.9M. Discounting the CARES Act funds, the increase over last fiscal year was 11%. The facilities and administrative costs remained about the same, from 20% last fiscal year to 19% this FY. The most notable increase among Colleges was the

College of Engineering and Computing, which achieved a 41% increase from \$32M to \$44.95M. Centers and Institutes (C&Is) had an overall 16% increase, from \$69.7M last fiscal year to \$80.5M for 2019-2020. Noteworthy among C&Is was the Institute on the Environment, which reached \$20M in awards, an increase of 24%. The Center for Children and Families, FIU's second largest Center in terms of awards, received \$17M, an increase of 41%. The Center for the Administration of Justice received awards totaling \$2M, representing a 172% increase from \$0.75M. The Institute for Neuroimmune Pharmacology increased by 102%, from \$1.86M to \$3.76M. Awards for the Biomolecular Science Institute increased by 68%, from \$2.5M to \$4.2M; the Extreme Events Institute/International Hurricane Research Center increased by 43%, from \$5.2M to \$7.4M.

## **2. Innovation, Partnerships and Economic Development**

For FY 2019-2020 there were major accomplishments in commercialization of FIU intellectual property (IP). In terms of licensing, thirteen (13) license options were executed, essentially matching the total numbers for the prior three years (14). Licensing income totaled \$236K, surpassing the prior six years combined. Additionally, six (6) startup companies were created based on FIU technologies. During the last quarter of FY 2020, all StartUP FIU classes, workshops and cohort bootcamps were converted into a virtual format—84 events were hosted, with 1,337 attendees. StartUP FIU is working with 17 faculty (teams), four graduate students and three undergraduate students to commercialize their research. In the last quarter, one team completed a remote national NSF I-Corps program (\$50,000 grant) and five teams completed a virtual regional I-Corps (\$2,550 grant) five-week program that was arranged by StartUP FIU in partnership with UCF. Final notice of award has been received from NIH for a \$3 million STTR grant to Professor Adela Timmons. Three other faculty teams are preparing SBIR/STTR grants, of which one has been submitted. In the last quarter, one team had their technology licensed through the Technology Transfer Office and two other faculty teams are in the early stages of licensing their technology. Twenty students participated in the first fully remote entrepreneurship bootcamp, IdeaStudio, serving idea-stage student ventures in an immersive four-week program. Two student teams (composed of 7 students) qualified and participated in the virtual 2020 Hult Prize Regionals in Boston and Melbourne. StartUP FIU Food secured a \$35,000 grant from Wells Fargo Foundation to support the conversion of our materials to an online format to offer to local food businesses for free during the pandemic. Finally, in 2019, FIU ranked 20<sup>th</sup> among public universities and 40<sup>th</sup> among all universities in the world in the number of US utility patents produced according to the NAI/IPO annual report. During the period between April and June 2020, FIU researchers disclosed 28 inventions, FIU filed 30 US patent applications and received 23 patents, making the totals for the fiscal year 91 disclosures, 70 patent filings and 60 patents granted.

## **3. University Graduate School (UGS)**

For the academic year, 3,402 master's degrees were awarded (6% increase compared to the previous year). There was a decrease of 9% in research doctorates (from 215 to 194), and 430 BOG Preeminence doctoral degrees were awarded, a slight decrease from the 434 from last year. As of July 20, UGS received 2,278 applications for doctoral programs. Thus far, we have admitted 583 doctoral students (7% decrease compared to last year)



and 182 have enrolled, a 11% increase compared to last year. We have received 8,427 applications for master's degrees (10% increase compared to last year) of which 3,960 were admitted (16% increase compared to last year), and 1,159 have enrolled, a 29% increase compared to last year. UGS along with the Biomolecular Sciences Institute (BSI), welcomed our first cohort of PhD students supported under the National Institute of General Medicine training grant (T32) and offered several workshops during the year to train them in research integrity, communication and networking. During the summer, in partnership with StartUP FIU, we piloted a four-part workshop to T32 and National Science Foundation Bridge to the Doctorate supported students on research innovation and entrepreneurship. This workshop will be converted into a badge that will be available to all graduate students in the Fall of 2020. In the Spring we moved all our activities and workshops to a virtual format. We organized an event to all graduate students on Mental Health Awareness in collaboration with CAPS. We also worked with the Business Graduate Student Association to provide weekly meditation sessions. In partnership with the Center for Excellence in Writing we offered weekly writing circles and have initiated a writing mentorship program. UGS continued to engage Graduate Program Directors with a professional development program so they are better prepared to support their students' needs. In the fall they participated in a refresher workshop on policies and procedures, and a panel discussion with Colleges' Associate Deans where expectations for the role of the Graduate Program Director in each College was explained. In the spring UGS collaborated with ISSS to go over the specific needs and regulations for international students. Under the COVID remote working directives, we held a town hall to answer questions and a session with the Registrar's Office to explain grading and graduation processes.

## **VI. ACADEMIC & STUDENT AFFAIRS REPORT**

### **1. Orientation and Family Programs**

FIU hosts its first ever online extended orientation program.

Panther Camp, hosted by Orientation & Family Programs, is FIU's optional extended orientation program. Panther Camp is student-led and facilitated program that typically takes place over three days and two nights in Lake Placid, FL. Due to COVID19, this extended orientation program was transitioned to online via Zoom this summer. Panther Camp Online takes place in one-and-a-half days where new students engage deeply with one another and with FIU's resources, ultimately helping them feel more prepared to enter FIU with a "family" of fellow Panthers.

FIU's Panther Camp was the first online extended orientation program implemented in the country due to COVID19. Due to this implementation, many other institutions across the nation have become interested in learning how the Orientation and Family Programs staff, Panther Camp Facilitators, and the Executive Board members were able to successfully market and transition to an online program while still maintaining student engagement and providing all the "Panther Camp magic". FIU is proud of this team in their ability to pivot and



create an engaging and memorable online experience for new students. Lastly, the Panther Camp team continues to understand the importance of facilitating a program that can bring new Panthers together during these times when it's needed the most.

## 2. COVID-19 prep focus for Student Health and Wellness

*Panthers Protecting Panthers* is FIU's repopulation plan for Fall 2020. It is meant to promote personal and shared responsibility to keep our community safe and healthy. As we near the start of the Fall term, we wanted to provide you with a few student-specific updates:

- **We are pleased to share with you the [Student Guidelines for Campus Repopulation](#).** These guidelines have been developed after thoroughly reviewing all CDC, federal and state mandates, and most importantly, with the health and safety of our university community in mind – *inclusive of student responsibilities and compliance regulations*. We strongly encourage reviewing the document prior to the start of the semester.
- Anyone who wishes to come on campus – faculty, staff, students, and vendors – **must observe social distancing and wear a face covering at all times**. These measures are crucial to help prevent the spread of the virus.
- Additionally, the *Panthers Protecting Panthers* Training Course has now been launched and may be accessed via [FIU Develop](#) (if needed, click [here](#) for login instructions). **This course is required for all students regardless of course modality, and must be completed no later than Sunday, August 23<sup>rd</sup>.**
- The final component of our healthy return to campus is the *Panthers Protecting Panthers* (P3) App. Checking into the app will be required of all employees, students, and visitors every time they come to campus (e.g., for class, work, labs, library, rec center). **The P3 app will be launching the week prior to classes beginning, so please be on the lookout for that announcement.**
  - [Note: On-campus residents will be required to complete the app every morning.]

We ask students to stay attentive to their FIU email account, [FIU COVID-19 FAQ page](#), and university social media accounts in order to remain updated with the latest information.

## 3. Disability Resource Center

As soon as COVID-19 cases started becoming prominent in the country, the DRC took a proactive approach and reached out to students with compromised immune systems to start discussing options with their faculty members to keep them safe during these unknown times. The Disability Resource Center has continued our work uninterrupted during the past two semesters by providing unwavering support and services at all times.

We have expanded our focus to include making the remote learning environment inclusive and accessible for all FIU students and providing out of the box support and resources to our faculty and staff to ensure inclusivity and access to all students. Below are some examples:

- The DRC developed resource guides for students and faculty members with detailed information on accessibility and accommodations in online courses. These resources include assistive technology software and tools to ensure accessibility when teaching online, student webinars and faculty workshops on ADA accommodations and being successful when learning online, and a detailed FAQs page that addresses the implementation of accommodations and disability resources in the remote setting.
- The DRC reached out to over 2700 students who had received accommodations prior to going fully remote to encourage them to meet with us to discuss their current academic accommodations, program progress, and any other concerns the transition to remote learning may impacting such as negatively exacerbating their disability symptoms. This proactive approach didn't eliminate every problem that students with disabilities would encounter in the switch to remote learning, but it did provide a map for navigating the sudden shift and it helped reassure students that they are not alone in this new environment.
- The DRC has implemented Virtual Drop In Hours every week to expand the available services to students and faculty. By doing so, we are providing an option in which they can virtually sign into a zoom sessions any day of the week and ask a quick question or follow-up without scheduling a virtual or phone appointment.

#### **4. FIU Online**

##### Community Learning Series for K-12

CLICK-12 is a free webinar series powered by FIU Online for K-12 teachers. This series of four workshops include tips and tools for delivering instruction online, designing engaging lessons, creating educational videos, and structuring your digital classroom during these uncertain times. 3,400+ teachers have registered, 1,000+ schools represented. 48 states and 34 countries.

##### Career Engage Badging Pathway for Fully Online Students

Career Engage is a professional readiness path, tailored to specific industries, that students can integrate into their current FIU student experience. With insight from the academic units, it's designed to fuel students with in-demand certifications and skill sets that top employers are looking for to ignite their professional journey upon graduation with a badge to prove it.

##### Panther Den: Online Student Hub

The university launched an online hub in Fall 2019, Panther Den, to assist its growing online student community. It's a collaborative project to enrich students' time at the FIU. Panther Den offers direct access to some of the most useful resources at the university in the online format. Currently launched within the Canvas dashboard, Panther Den is added as a "class" to all enrolled students' dashboards for easy access. Through Panther Den, students can become aware of university news with student media. Students may also find and subscribe to tutoring resources, exercise videos and podcasts. Additionally, Panther Den features information on FIU's online success coaches, counseling and psychological services, as well as university safety protocols.

#### New Canvas Website and Support Resources

A new [canvas.fiu.edu](https://canvas.fiu.edu) website launched in Fall 2019, providing a single location for Canvas resources and support for students, instructors, and staff. Since its launch, we have had about 104,000 unique visitors access the site with more than 150 knowledge articles created to help our users easily find guides on the most used Canvas features and related tools.

More recently, [canvas.fiu.edu/coronavirus](https://canvas.fiu.edu/coronavirus) was released in response to COVID-19 and its newly created articles have been imperative in communicating up-to-date academic continuity related information regarding remote instruction, class modalities, proctoring, training, and support for the university as it relates to Canvas.

#### Ask Charlie

In preparation for the Fall 2020 semester, [AskCharlie.fiu.edu](https://askcharlie.fiu.edu) was unveiled to the FIU community as a way for students to submit questions about the upcoming semester and receive personalized responses by Charlie Andrews, AVP for Academic and Student Affairs. The website was developed with students in mind, which guides them with information about the class options available for Fall 2020, a personalized [MySchedule](#) application to clearly inform students how their courses were taking place, frequently asked questions that Charlie has received from other students, and the ability for students to submit their own questions to receive assistance and guidance from Charlie personally. The website was created with a robust case management process that allowed Charlie to focus on easily managing student questions and responses, while in the backend a Tableau report was developed to provide leadership a high-level outline of the types of questions and students Charlie was getting inquiries from.

#### VIVO Media Tool

VIVO (Video In Video Out) is a video streaming and media hosting tool fully developed from the ground up by FIU Online to support the multimedia needs of fully online and certified hybrid courses. In early 2020 FIU Online further enhanced it's VIVO media tool by directly integrating it with Canvas, allowing Instructional Designers to quickly upload, caption, find, and embed videos into their courses from right within Canvas. VIVO is just one of several Canvas integrations developed by FIU Online that have undergone enhancements recently. Other examples include "CreatorPro", a syllabus creation and publication tool for instructors and students, and the "Proctoring Center", a tool used by online students to find and submit

proctoring locations around the world for exams that their instructor will ultimately review and approve.

### Affordability Counts Initiative

The Affordability Counts initiative launched in 2016 aims at lowering the cost of course materials to \$20 or less per credit. Faculty are encouraged to adopt open educational resources (OER) or other low-cost course materials. Now, FIU Online partnered with five Universities to create a state-wide database. The team developed <https://affordabilitycounts.org>, a new website with a searchable database of courses that use OER and low-cost materials for faculty across the state to contribute to and use as a resource in their own content curation process. In just one year, all faculty at Florida state colleges and universities gained access to a statewide repository of model courses and their low-cost materials. SUS partnerships now include the University of Central Florida, University of North Florida, University of South Florida, Florida A&M University, Florida Atlantic University, and Lake Sumter College.

## **5. Student Athletes**

For the first time in FIU Athletics History, each sport posted a 3.0 or higher for the term.

FIU student-athletes earned a **3.53** spring term GPA (2020), which is the highest term GPA on record for the Athletics Department while also posting a conference high 282 members on the Conference USA honor roll (3.0 GPA or higher). This is the second straight year FIU has been the leader in this area. Women's Swim & Dive earned the highest team GPA posting a **3.902**. Men's Soccer earned the highest male GPA posting a **3.782**. Our student-athletes also posted a record high 66 student-athletes with a 4.0 or higher for the term (14%).

## **6. Student Access and Success**

Student Access and Success (SAS) was recently award a \$2.5m Department of Education grant for a Full Service Community School program (FSCS). The Full-Service Community Schools (FSCS) program provides support for the planning, implementation, and operation of full-service community schools that improve the coordination, integration, accessibility, and effectiveness of services for children and families, particularly for children attending high-poverty schools, including high-poverty rural schools. The FSCS program was re-authorized under Title IV through Community Support for School Success, sections 4621-4623 and 4625 (a) of the Elementary and Secondary Education Act, as amended by the Every Student Succeeds Act (ESEA). This new grant will allows us to expand the work of FIU's Education Effect in the communities of Little Haiti, Overtown and Liberty City.

Education Effect works collaboratively with Miami Dade County Public Schools (MDCPS) and community partners to operate a variety of programs and initiatives that support its core mission of bringing programming specifically designed to improve student academic

achievement to close equity gaps. These programs work with students, families and teachers to provide comprehensive college readiness skills. The partnership is a cornerstone of the FIU-MDCPS collaboration known as Achieving Community Collaboration in Education and Student Success (ACCESS). An achievement-oriented partnership, ACCESS aligns the combined instructional, research and creative talents of FIU and MDCPS to improve the academic success of K-12 students

This mutually beneficial partnership improves the quality of life and learning in local schools and communities while simultaneously advancing university research, teaching, learning, and service. The new FSCS program is set to be launched in fall 2020.

## **7. Auxiliary & Operations**

### **Housing & Residential Life**

Housing and Residential Life partnered with Athletics to bring back student athletes to on-campus housing for strength training. Protocols were put in place for testing, isolation, and quarantine. Housing and Residential Life staff assisted with meal delivery to those student athletes who tested positive while they stay quarantine until receiving a negative test.

### **Wellness & Recreation Centers**

The Wellness and Recreation Centers have been committed to providing wellness resources to the FIU community while remote learning and working. With the launch of The Virtual WRC, more than 164 virtual fitness classes have been offered since March. Virtual personal training and eight different e-sports offerings were developed, along with weekly chats hosted by an athletic trainer. The WRC also partnered with NIRSA's 2020 Recreation Movement to expand on the virtual offerings available to the FIU community.

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