SEEDS You Choose Award Application, 2016

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Abstract

Biomedical science is experiencing one of the greatest challenges ever to the integrity of the research enterprise: the failure to replicate results. I would like to invite an academic/speaker/researcher for a workshop/lecture to talk about this crisis in scientific and biomedical research, including work on the latest initiatives for improving reproducibility. The replication crisis is of relevance to a broad and diverse group of researchers and faculty in the University of Miami (UM) scientific community—from scientists and social scientists to biomedical researchers—at all three campuses. Addressing the irreproducibility issue is known to be a “priority for the research community,” and this speaker would be an opportunity for researchers at UM to be better informed of national and global initiatives to develop and adopt research standards.

Activity goals

The goal of this project is to provide a community-wide forum for discussion on recent developments and initiatives to address the reproducibility crisis in scientific and biomedical research.

The challenge of scientific replication or reproducibility is an obstacle for empirical research, a problem for funders and investigators, and even a crisis in public trust of the scientific enterprise. It is one of the most interesting and important challenges facing the world’s research community. The too-frequent failure of efforts to replicate or reproduce others’ results has engendered a crisis and, to some, undermined the credibility of at least some studies. This inability to reproduce results of scientific experiments is not only relevant to the advancement of knowledge but also costly: “Low reproducibility rates within life science research undermine cumulative knowledge production and contribute to both delays and costs of therapeutic drug development. An analysis of past studies indicates that the cumulative (total) prevalence of irreproducible preclinical research exceeds 50%, resulting in approximately US$28B/year spent on preclinical research that is not reproducible—in the United States alone.”

This SEEDS award will improve the academic environment at University of Miami by fostering discussion and increasing transparency of scientific research community-wide.

Leading journals such as *Nature* and *Science* have outlined sets of guidelines to combat the challenge of replication, which include encouraging transparency and sharing of scientific methods and data. Still, causes for the lack of scientific replication continue to be elusive, various and complex. But that should not prevent the scientific research community from seeking to find better practices, implement standards, and further understand the challenges it faces. For example, one organization, the Science Exchange, has partnered on the “Reproducibility Project: Cancer Biology,” a project funded by a $1.4m Laura and John Arnold Foundation grant that attempts to reproduce fifty highly

1 https://www.gbsi.org/publication/the-case-for-biological-standards/
2 http://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.1002165
influential papers.” Dr. Elizabeth Iorns, the founder of Science Exchange, previously a breast cancer researcher and Assistant Professor at the University of Miami, would be a possible speaker to visit with the UM community to share her findings on improving reproducibility. Other possible speakers might include Leonard P. Freedman, Glenn Begley or Brian Nosek, researchers and academics who have special interest in and have published on the reproducibility crisis.

**Personal goals**

The causes of the failure of efforts to reproduce others’ results are many and various, from over-stating results, pressure to publish, careless work, and an emphasis on findings that are novel and significant rather than those that confirm what we think we already know. I am currently researching another factor in poor rates of replication: the role of writing. My objective is to suggest that poor scientific prose is an under-recognized source of reproducibility failure. Improvement of scientists’ communication skills – valuable in its own right – might therefore be a mechanism for partially addressing the problem of scientific replication. I have already shared preliminary research findings with the UM community in an “Ethics Dialogue” at the Miller School of Medicine in October 2015. Having a nationally renowned speaker and researcher come to UM would further enable me and the UM community to make connections and benefit from understanding the wider concerns and issues at stake. My goal would be to publish my own research to an academic audience and to continue to disseminate my findings and work among the UM community. The academic unit I direct at UM, which includes writing support via the University Writing Center, has already had much success in helping faculty increase their science writing skills, improve their grant applications, and improve their scholarly manuscripts through writing workshops and individual writing consultations. This award, then, would allow me to build on the work of – not least – previous SEEDS speaker Dr. Judith Swan to better inform the university’s research community about best practices in writing, in this instance with special regard to addressing the replication crises.

**Budget**

Travel expenses for speaker: 2 nights hotel $500; flight $600; per diem and meals $200; honorarium $1200+; refreshments tbd. Total $2,500+

I hope to find partial matching funds from other UM units. I have made preliminary inquiries to both the College of A&S and the Miller School of Medicine, and I hope to be able to secure some additional resources. If awarded this grant, I would make sure to pursue those additional funding opportunities.

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3http://www.slate.com/articles/health_and_science/future_tense/2016/04/biomedicine_facing_a_worse_repl ication_crisis_than_the_one_plaguing_psychology.html
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Professional Preparation
Ph.D., Literature. Thesis: “Furrowing the Soil with Their Pens: Caribbean Writers and
M.A., English, University of Miami, Coral Gables, Florida, USA (2002)
B.A. (Honours), Open University, UK (1999)
Certificate in Teaching English to Speakers of Other Languages (CTESOL) Cambridge
University English Language Assessment Board, UK (1996)

Appointments
Director of Writing, College of Arts & Sciences, University of Miami May 2016 present.
  Director, Composition Program, University of Miami. May 2013 – present
  (Associate Director, 2011 – 2013; Assistant Director, 2005 – 2011
Senior Lecturer, 2008 – Present, Lecturer, 2003 – 2008, Department of English,
  University of Miami. Courses taught: ENG 691, 333, 306, 230, 210, 208, 107, 106,
  105, 103
Faculty Director, London Study Abroad, University of Miami, June 2012-2015
Academic Coordinator: The American Institute for Foreign Study, London and Paris,
Composition Instructor Positions: University of Miami, 2003 (adjunct); Miami-Dade
  College, 2003 (adjunct); American Intercontinental University, London, 2002 (full
time); University of Miami 2000 – 2002 (graduate teaching assistant)
  Helsinki 1995-1996

Publications
“I Cut It and Cut It: Jean Rhys’s Short Short Fiction,” The Caribbean Short Story: Critical
Perspectives. Peepal Tree Press (2011)
“Furrowing the Soil With His Pen: Derek Walcott’s Topography of the English
Countryside,” Geocritical Explorations: Space, Place, and Mapping in Literary and Cultural
Studies. Palgrave Macmillan (2011)

Conference Presentations and Invited Talks
“Science Writing and Communication: Potential Tools to Improve Replication.”
Dialogues in Research Ethics, University of Miami Ethics Programs & Miami Clinical
and Translational Science Institute, Miami, Florida. (October 2015).
“Rethinking Plato’s Legacy: Rhetoric and Ethics.” Conference on College Composition
and Communication, Tampa, Florida. (March 2015).


“Furrowing the Soil With His Pen: Derek Walcott’s Topography and Verse,” Derek Walcott Symposium, University of Essex, UK, and Society of Caribbean Studies Conference, July 2010, Southampton, UK. (April, July 2010)

“‘Topography Delineates Its Verse’: Derek Walcott’s English Countryside,” Global Caribbean(s): Interrogating the Politics of Location in Caribbean Literature and Culture, University of Miami, Coral Gables, Florida, USA. (March 2010)


“Jean Rhys and the English Landscape,” West Indian Literature Conference, Bridgetown, Barbados. (February 2008)

“Student Personae: How Social Science Inquiry Methods Can Empower Academic Identity; Ethical Research & Teaching Observations” Conference on College Composition and Communication, New York, USA. (March 2007)

“The Caribbean Writer’s English Landscape,” West Indian Literature Conference, Nassau, Bahamas. (March 2007)

“Teaching the Teachers, Teaching Ourselves” Conference on College Composition and Communication, Chicago, Illinois, USA. (March 2006)

Panel Chair: “Working With Students With Intellectual Disabilities…” Conference on College Composition and Communication, Chicago, Illinois, USA. (March 2006)

"The Wonderful Adventures of Mary Seacole in Many Lands: Whose Testimony?" (Re)thinking Caribbean Culture Conference, University of the West Indies, Barbados. (June 2001)

Grant Work
College of Arts & Sciences, University of Miami, $2,000 Dean’s summer research award, 2015. Division of Continuing and International Education and College of Arts & Sciences, University of Miami, 2015 and 2006. $7000 and $6,000 awards. Youth Ethics Initiative, University of Miami Ethics Programs, 2006-2009. Grants ($2000 each) to provide web based resources for teachers to introduce ethical issues into courses across the curriculum.