

# IMSD *View*

INITIATIVE TO MAXIMIZE STUDENT DEVELOPMENT

VOLUME 7 ISSUE 3



BROWN

## IMSD Congratulates New PhDs 2016

Six IMSD trainees and senior scholars were conferred the degree of Doctor of Philosophy and one senior scholar received her Doctor of Medicine at Brown University's Commencement on May 29th, 2016. Congratulations and best wishes to all of our graduates as they embark upon the next exciting phase of their career! (See page 2 Congratulations section for further details regarding these students' thesis defenses and post-graduation plans).



IMSD scholars (L to R): Ayed Allawzi, Hilary Nicholson, Adeola Adebayo, and Ann Catherine Saunders

- Adeola Adebayo** – Ph.D., Pathobiology
- Ayed Allawzi** – Ph.D., Molecular Pharmacology and Physiology
- Angel Byrd** – M.D., Ph.D., Pathobiology
- Cyrena Gawuga** – Ph.D., Molecular Pharmacology and Physiology
- Hilary Nicholson** – Ph.D., Molecular Pharmacology and Physiology
- Asli Sahin** – Ph.D. Molecular Biology, Cell Biology and Biochemistry
- Ann Catherine Saunders** – Ph.D, Pathobiology

## Save the Dates!

IMSD Summer BBQ. . . . . June 22

### Training Modules:

Beyond the Hypothesis:  
Experimental Design and  
Critical Analysis . . . . . July 11-22

Scientific Writing:  
Key Principals . . . . . Week of August 1

Demystifying the PhD  
Experience . . . . . August 23-29

Reading Scientific  
Publications. . . . . August/TBD

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## Message from the Director

### Locus of Control versus

### Stereotype Threat: Balancing the self-efficacy landscape

Efforts to broaden STEM participation are often centered on eliminating factors that threaten access and opportunities to pursuing training and career aspirations in the fields. Accompanying this work is a concern of how to eliminate the sense of stereotype threat trainees' experience. This threat exists when perceptions and beliefs of others affect an individual's actions and achievements through unconscious affirmation of those perceptions and beliefs. Although addressing stereotype threat focuses on eliminating or erasing the 'negative', just as much effort must be made to build the 'positive' in trainees. That is, building a high internal locus of control. Internal locus of control shapes self-determination that can lead to personal success. The concept of locus control, originally established by [JB Rotter](#) is a theory of learning driven by the belief that an individual's personality development is a product of their environment. It states that an individual's belief has control over events that affect them and that this belief falls on a continuum from high to low. Individuals with a high internal locus of control believe that their success is very much internally driven whereas those with low internal locus control believe that external factors are the predominant determinants of success. Stereotype threat and Locus of Control are not mutually exclusive. Individuals with low internal locus of control believe that there is little impact of their own efforts, and they are more likely to be influenced by stereotype threat, making it a self-fulfilling outcome. Occasions to discuss stereotype threat should also be used as occasions to discuss locus of control.

Andrew G. Campbell, Ph.D.  
Professor of Medical Science  
Brown IMSD Program Director and Co-PI

# Excellence

## Congratulations

### IMSD Congratulates Ph.D. Class of 2016!

**Adeola Adebayo**, IMSD senior scholar and York College alumnus successfully presented herself for the degree of Ph.D. in Pathobiology on April 25, 2016. Her research conducted in the laboratory of Professor Philip Gruppuso focused on “Unraveling the transcriptomic and proteomic profile of mTOR-inhibited progenitor-derived focal lesions in a rat model of hepatocellular carcinoma”. Adeola has accepted a position as Postdoctoral Research Fellow in the laboratory of Satdarshan Monga, M.D., in the Department of Pathology at University of Pittsburgh Medical Center, starting August 2016.

**Ayed Allawzi**, IMSD trainee in Molecular Pharmacology and Physiology, was awarded the Ph.D. degree in May 2016. Ayed defended his doctoral dissertation entitled “Activation of An<sub>o1</sub> is Associated with Apoptosis of Pulmonary Endothelial Cells: Implications for Pulmonary Arterial Hypertension” on April 21. His research was conducted under the mentorship of Professor Gaurav Choudhary. Ayed will begin his Postdoctoral Research Fellowship at the University of Colorado, Denver, in the Pulmonary Division with Eva Grayck, M.D. starting September 2016.

**Cyrena Gawuga**, IMSD trainee and senior scholar, who successfully defended her thesis titled “Psychoneuroimmunology of Early Life Stress: Immune Response, Inflammation, and Illness in Healthy Adults” in January was conferred the degree of Ph.D. in Molecular Pharmacology and Physiology at Brown University’s Commencement in May 2016.



Cyrena Gawuga, PhD’16, Molecular Pharmacology and Physiology

**Hilary Nicholson**, PhD’16 (Molecular Pharmacology and Physiology program) received the 2016 Joukowsky Dissertation Award in life sciences for her thesis, “A Matter of Life and Death: Novel Ligands Mediating Cytotoxic Function and Revealing Metabolically

Stimulative Function of the Sigma-2 Receptor in Human Cancer.”

Hilary recently began her Postdoctoral Research Fellowship at Dana-Farber Cancer Institute, Harvard Medical School in the lab of Dr. William Kaelin, Jr.

**Angel Byrd**, Ph.D. former IMSD senior scholar (PhD 2015, Pathobiology) was conferred her M.D. degree in May 2016. Angel will join the Ethnic Skin Program within the Department of Dermatology at Johns Hopkins University as a Research Clinical Fellow for 2016-17.

## Fellowships, Awards & Achievements

**Adeola Adebayo**, Former IMSD senior scholar and partner student, co-authored the following article conducted in the lab of her mentor Philip Gruppuso:

Francois-Vaughan H, **Adebayo AO**, Brilliant KE, Parry NM, Gruppuso PA, Sanders JA. Persistent effect of mTOR inhibition on preneoplastic foci progression and gene expression in a rat model of hepatocellular carcinoma. *Carcinogenesis*. 2016;37(4):408-19. doi: 10.1093/carcin/bgw016. PubMed PMID: 26905589.

**Hawasatu Dumbuya**, IMSD doctoral candidate in Molecular Pharmacology and Physiology, presented a poster on her research at the 2016 New England Science Symposium entitled “UVA phototransduction is a reactive oxygen species-sensitive signaling cascade in human melanocytes”.

**Hawasatu Dumbuya** is the recipient of the 2016-2017 HOPE Scholarship by the Biomedical Science Career Program (BSCP), sponsored by Sanofi Genzyme, which provides two years of support for educational purposes in the amount of \$7. The BSCP HOPE scholarship supports highly motivated New England minority students, who have demonstrated achievement in biomedical, biotechnology or other science-related fields, and have recognized potential. Hawa also served as a student discussant on the panel “Getting into Health Professional School and Succeeding” at the 2016 BSCP Student Conference.

**Cristina Fernandez**, IMSD doctoral candidate in Epidemiology, received a \$1,500 travel award to orally present her research on “Assessing the Relationship between Psychosocial Stressors and Psychiatric Resilience among Chilean Disaster Survivors” at the 2016 Epidemiology Congress of the Americas Conference, in Miami, FL in June. Cristina also received the 1st place prize for Best Student Abstract at the Brown University School of Public Health Research Day 2016.

**Eric James**, IMSD trainee and doctoral candidate in Neuroscience, successfully presented himself for the degree of Doctor of Philosophy in the Division of Biology and Medicine on June 1<sup>st</sup>, 2016. His dissertation research focused on “Interplay of Genetic and Environmental Factors that Leads to Synaptic Dysfunctions Underlying Neurodevelopmental Disorders”. Eric recently transitioned to a Postdoctoral Research Fellow position in the Marder Lab at Brandeis University.



Christine Scaduto with Eric James at his PhD defense reception

**Torrey Truszkowski**, IMSD senior scholar and doctoral candidate in Neuroscience, presented a research poster at Cold Spring

Harbor Laboratory Neuronal Circuits meeting in early April entitled, “Behavioral manifestations and intracellular correlates of multisensory integration in the developing optic tectum.”

# Community

## Trainee & Program Publications

**Lopez-Fagundo C**, Livi LL, Ramchal T, Darling EM, Hoffman-Kim D. A biomimetic synthetic feeder layer supports the proliferation and self-renewal of mouse embryonic stem cells. *Acta Biomater.* 2016. doi: 10.1016/j.actbio.2016.04.047. PubMed PMID: 27142253.

This research paper was also highlighted in the TerraDaily on-line news site: [http://www.terradaily.com/reports/Advance\\_could\\_help\\_grow\\_stem\\_cells\\_more\\_safely\\_999.html](http://www.terradaily.com/reports/Advance_could_help_grow_stem_cells_more_safely_999.html)

## New Training Module Developed on "Explaining Research"

The Brown IMSD Program co-sponsored several events in recent months on science communication, an area that is receiving a great deal of interest among students, postdocs and faculty. A breakfast conversation with NPR's Joe Palca in January stimulated a discussion between Brown University Writer-in-Residence Professor Cornelia Dean and IMSD senior scholar Torrey Truskowski about the need for further discussion and education on this topic. They took the initiative to develop a new training module that they offered in May on "Explaining Research: Effective and Engaging Communication of Science". The module was designed to help graduate students and researchers gain the skills needed to interact with the public and share their scientific pursuits in a meaningful and simple way with various types of audiences including students, journalists, policy-makers, and people who last took a science course in high school. For this module, Cory Dean drew upon her extensive experience as a science journalist at The New York Times. Torrey shared insights she has gained through her participation in an American Society for Biochemistry and Molecular Biology science communication course and trip to Capitol Hill to advocate for increased funding for scientific research, and as a featured speaker for Nerd Nite RI, a monthly event in which scientists present 20-minute talks to a general audience. Torrey hopes to pursue a career in science communication, noting the field "is becoming increasingly important as we struggle with science funding levels and poor science literacy in schools. I am leaning towards science policy... because I want to change the world." -KZB

## "Inventing Heron" Website Explores Career Possibilities

**Maya Almaraz** and a group of several graduate students at Brown recently launched a new website, "[Inventing Heron](http://inventingheron.com)", which is an online company intended to expose people to various career possibilities through first hand biographies and videos. They are piloting the project in Rhode Island and have already profiled more than 400 individuals with careers ranging from archaeology to astrophysics. For further information, please visit the project website at: <http://inventingheron.com>. The project was also highlighted in a feature article in the Providence Journal: <http://www.providencejournal.com/article/20160321/NEWS/160329849>. -KZB

**Elizabeth O. Harrington**, IMSD Co-Program Director, was profiled in the Spring 2016 issue of *Brown Medicine* magazine. The article highlights the many roles that Harrington fulfills as an administrator, research scientist and principal investigator for several grants including the IMSD program, and much more. The article can be viewed at: <http://www.brownmedicinemagazine.org/blog/walking-the-walk/>



Dr. Nicholas Everage (Brown IMSD alumnus and current Associate Director at Biogen), shared his perspectives with faculty, students, partners and guests during IMSD luncheon event in April

## Brown Hosts Visit for IMSD Partner Students

The Brown IMSD Program hosted a campus visit for a group of 18 undergraduate students and several faculty representatives from our partner institutions on April 21-22. At a welcome reception and dinner, students met and mingled with former partner students that have participated in the IMSD program and gone on to successful graduate and postdoctoral careers. Highlights of the visit included a graduate school information session, graduate student panel discussion, and luncheon celebration event with IMSD faculty, students, administrators and alumni guests. Students also met with current graduate students and participated in tours of the Brown campus and several research labs. York College student Mercedes Polanco commented, "The trip was very informative. I gathered a lot from the presentations from the different colleges and also when we broke off and talked to current students of the program. They filled in any gaps in information from the earlier information session. I think my most favorite part was the sense of community I felt. That was lovely." Fellow York student Chevanie Bailey echoed similar sentiments saying, "The experience was definitely a rewarding one. What struck me was the fact that the graduate students (both past and present) did nothing but sing praises of the IMSD program. I would really love to be a part of that someday." -KZB



Dr. Pamela Gaddi (Ph.D. Brown University; B.S. St. John's University) with visiting students from IMSD partner institutions during a welcome reception in April.

# Collaboration

## Funding and Training Opportunities

### Predoctoral Individual Fellowships

[Ruth L. Kirschstein National Research Service Awards for Individual Predoctoral Fellowships \(F31\)](#) The NIH F31 Individual National Service Awards (NRSA) provide support for promising doctoral candidates who will be performing dissertation research and training in scientific health-related fields relevant to the missions of the participating NIH Institutes and Centers. Individual opportunities may have different deadlines, please check the sites: [http://grants.nih.gov/training/F\\_files\\_nrsa.htm](http://grants.nih.gov/training/F_files_nrsa.htm)

[American Heart Association Predoctoral Fellowship](#) provides research assistance and training to help students initiate careers in cardiovascular and stroke research. Application deadline: July 16, 2016. [http://professional.heart.org/professional/ResearchPrograms/ApplicationInformation/UCM\\_443316\\_Predoctoral-Fellowship.jsp](http://professional.heart.org/professional/ResearchPrograms/ApplicationInformation/UCM_443316_Predoctoral-Fellowship.jsp)

[PhRMA Foundation Predoctoral Fellowships](#) provide up to two years of stipend funding to support full-time advanced students who will have completed most of their pre-thesis requirements and be engaged in thesis research as Ph.D. candidates by the time the award is activated. Research areas include Adherence Improvement, Health Outcomes, Informatics, Pharmaceuticals, and Pharmacology/ Toxicology. For information and application deadlines, visit: <http://www.phrmafoundation.org/2015-awards/>

### Dissertation Fellowships

[National Science Foundation - Biological Anthropology -- SBE Doctoral Dissertation Research Improvement Grants](#) supports multifaceted research which advances scientific knowledge of human biology and ecology, including understanding of our evolutionary history and mechanisms which have shaped human and nonhuman primate biological diversity. Application Deadline: July 14, 2016. For further information visit: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505067](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505067)

[NSF Science of Science and Innovation Policy \(SciDIP\) Doctoral Dissertation Research Improvement Grants](#), supports research designed to advance the scientific basis of science and innovation policy. The program funds research to develop models, analytical tools, data and metrics that can be applied in the science policy decision making process and concern the use and allocation of scarce scientific resources. Application Deadline: September 9, 2016. Further information can be found on the NSF website at: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505092](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505092)

[New Scientist Jobs Careers Advice](#) is an on-line publication by New Scientist that distributes interesting science news to a wide audience. It features full length articles that offer helpful advice and insights on issues of relevance to graduate students, postdocs and anyone who is interested in scientific research. Check out the website at: <http://jobs.newscientist.com/careers/>

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#### PARTNER INSTITUTIONS

**St. John's University, New York, NY**

**York College of the City University of New York**

**North Carolina A&T State University**

**The College of Mount Saint Vincent**



Brown University's Initiative to Maximize Student Development (IMSD) is a predoctoral research training initiative that aspires to significantly increase the number of PhDs from groups underrepresented in biomedical and behavioral research. The program is funded by a five-year continuation grant (R25 GM083270) by the National Institute of General Medical Sciences, National Institutes of Health (NIGMS/NIH).

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