IMSD Congratulates New PhDs!

Ten IMSD trainees and senior scholars were conferred the degree of Doctor of Philosophy the Brown University Commencement ceremonies held on May 25th. Congratulations and best wishes to all of our graduates!

Kristin M. Beale
Molecular Biology, Cell Biology and Biochemistry

Caitlin Westberg Brown
Pathobiology

Angel Byrd
Pathobiology

Jessica Chery
Molecular Biology, Cell Biology and Biochemistry

Courtney Elaine Frederick
Molecular Pharmacology and Physiology

Diana B. Lizarazo
Molecular Pharmacology and Physiology

Cristina Y. López-Fagundo
Biomedical Engineering

Danya Mazen Qato
Health Services Research

Teresa Ramirez
Molecular Pharmacology and Physiology

Bethany J. Wilcox
Biomedical Engineering

Message from the Director
The Re-Imagined Pipeline

The STEM pipeline analogy is the long-standing conceptual framework representing how trainees move through the scientific educational and training process. An important measure of pipeline success is the degree to which trainees advance to the postgraduate levels and workforce from precollege levels. In the May 2014 on-line issue of Bioscience (Ramdial and Campbell*, 2014), former Brown University IMSD Senior Scholar and MARC Program Assistant Stacy-Ann Allen-Ramdial (PhD, Brown University, 2013) describes a Re-Imagined Pipeline. The Re-Imagined Pipeline is presented as a vertical structure to illustrate the persistent challenge posed by STEM trainee attrition, exit and under-employment counter-balanced by the investments needed to achieve success. Ramdial’s perspective as a recent trainee offers unique insights into the relationship between pipeline input and flow, and subsequent output. The paper also outlines key intervention steps that, when applied alongside current practices, can yield meaningful improvements in STEM trainee success and increased uniformity of practices. These steps, however, are only as effective as the system in which they operate. A recent article by Alberts et al. on the systemic flaws underlying the U.S. biomedical research system points to the causal relationship between outdated institutional models for supporting scientific practice and STEM pipeline function. The Re-Imagined Pipeline and acknowledged unsustainable nature of the biomedical enterprise in its current form should help to change the ethos of the scientific community.

Andrew G. Campbell*, PhD
Associate Professor of Medical Science
IMSD Program Director and Co-PI
Co-author

SAVE THE DATES!

Training Modules:
Introduction to Statistical Analysis...July 21-24
Analysis of Data
Scientific Writing...July 28 – Aug. 1
Demystifying the PhD Experience...Aug. 18-22
Reading Scientific Publications...Aug. 18-22

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Congratulations

Caitlin Brown, IMSD Trainee in Pathobiology successfully presented her doctoral dissertation on “Notch3 Signaling in Epithelial Ovarian Cancer” on April 21, 2014. Caitlin conducted her research in the laboratory of her thesis advisor, Professor Richard Freiman. She will continue her research over the summer as she explores career opportunities in the pharmaceutical industry.

Angel Byrd, MD/PhD student and IMSD senior scholar in Pathobiology, successfully presented herself for the Doctor of Philosophy degree on April 11th, 2014. Her dissertation research on “Regulation of Human Neutrophil Functions by the Integrin CR3 - an Extracellular Matrix-based mechanism of Rapid Neutrophil Extracellular Trap Formation” was performed in the laboratory of Professor Jonathan Reichner. Dr. Byrd is currently working on her M.D. degree at the Brown Alpert Medical School.

Jessica Chery, IMSD Senior Scholar in Molecular Biology, Cell Biology and Biochemistry, successfully presented and defended her doctoral dissertation research on April 18, 2014. Jessica conducted her research in the laboratory of Professor Erica Larschan. Jessica will begin a postdoctoral position at Harvard Medical School in the Fall.

Trainee Publications:


New Training Program

STEMs from Brown IMSD Partnerships

The Brown IMSD program partners with four minority-serving institutions in its effort to increase the number of trainees from underrepresented groups who pursue STEM careers. These partnerships have led to the development of a new program involving faculty from Brown University and partner institutions. The Brown Team Research and Inter-Institutional Networking (T.R.A.I.N.) program increases training for students underrepresented in STEM fields by providing year-long, intensive research experiences via collaborative projects established between MSI partner faculty and faculty at Brown.

In collaboration with Brown University Professor Kim Boekelheide, T.R.A.I.N. partner institution faculty member Professor Janet Rollins of the College of Mount St. Vincent (CMSV) and her student, Katiuska Hernandez, are exploring the effects of environmental toxicant induced injury on fertility. The Boekelheide group studies these effects in humans and animals and translates this work to the fruit fly, Drosophila melanogaster - the system in which Rollins and colleagues work. As a result of Ms. Hernandez’s involvement in this project, she and fellow CMSV students recently presented their research findings at the Tribeta Regional Research Conference in New York. Prof. Rollins and Ms. Hernandez will continue their research at Brown this summer in the Boekelheide Lab. Funding for the T.R.A.I.N. program is provided by NIGMS Grant # 1T36GM101995-01. For more information, please visit http://biomed.brown.edu/imsd/train/.
New Training Module Highlights Brown Core Research Facilities

The Spring semester featured the roll-out of a new training module on “Resources, Tools and Techniques in Biomedical Research”. The module provided an introduction to key methodologies in modern biology and an overview of Brown University’s shared resource facilities. It included brief tours of facilities that provide services in Biobanking, Microscopy, Structural Biology, Genomics, Bioinformatics, Transgenics, Molecular Pathology, Proteomics, Behavioral Phenotyping, XROMM and MRI. Participants met the people who run the facilities, learned the basics of how the equipment works, how the technology is used, and how the data can be analyzed. Many thanks to Associate Professor Robbert Creton for organizing and presenting the module and to all the facilities that offered tours and informational sessions. -KZB

Brown SACNAS Events Highlight Inspiring Women in STEM

From left, Jean King, Robin Wellington, Nicole Renaud, Janet Blume and Suzanne de la Monte discuss the rewards and challenges of STEM careers.

The Brown IMSD Program was pleased to partner with the Brown SACNAS Chapter to present “Inspiring Women in STEM” in March. As explained by Brown SACNAS chapter president and IMSD trainee Eric James, the event was organized to provide opportunities to engage with women scientists of diverse backgrounds and at different career stages. Associate Provost for Academic Development and Diversity Liza Cariaga-Lo moderated the discussion as Panelists from Brown, MIT, and University of Massachusetts Medical School, shared their perspectives about gender bias within STEM fields and how to achieve work/life balance. During an NPR radio interview, Brown IMSD scholar and SACNAS Chapter Vice President, Heather Bennett noted that students and faculty at Brown often talk about how to diversify STEM careers, but those conversations happen in isolation. This event was conceived “to provide a forum for open discussion, to reach across all the STEM departments at Brown, and also to engage the community and invite them to take part.” In addition to the panel, IMSD co-hosted breakfast and a career conversation with Robin Wellington (Associate Professor of Psychology, St. John’s University, NY) and Nicole Renaud (Computational Biologist, Novartis Institutes for Biomedical Research). Both events were well attended and have stimulated ongoing discussion. A feature article on the panel discussion appeared in the Brown Daily Herald. -KZB

IMSD Hosts Partner Students Visit to Brown

Visiting partner students at welcome reception with IMSD senior scholar and MD/PhD student, Dr. Angel Byrd

The Brown IMSD Program hosted a campus visit for seventeen undergraduate students and several faculty & program staff representatives from the Brown IMSD partner institutions in April. The visit provided an opportunity for undergraduate partner students and prospective graduate program applicants to get a glimpse into “a day in the life of a graduate student”. The visit began with a special guest lecture with Brown alumnus Dr. Nikia Laurie, Assistant Professor of Cancer Biology and Epigenomics at Northwestern University Feinberg School of Medicine. Following her seminar, Dr. Laurie engaged in informal conversation and with the partners and guests at a welcome reception and dinner. Also attending the dinner was Leadership Alliance Executive Director, Dr. Medeva Ghee who conversed with partner students about research opportunities. The partners’ itinerary included a tour of the Brown campus, meetings with Brown graduate students, faculty and program directors, scientific seminars and research presentations. Many of the students also had the opportunity to tour research laboratories and talk with lab members. John Patterson, MARC Program Coordinator at North Carolina A & T University commented that “students were really impressed with Brown, they only had wonderful things to say about the visit, all said they would be applying.” -KZB
F31 Predoctoral Individual National Research Service Award (NRSA)
AIDS-related applications: Sept. 7, Jan. 7, May 7
Ruth L. Kirschstein National Research Service Awards for Individual Predoctoral Fellowships (F31) 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/grants/guide/pa-files/PAR-13-182.html](http://grants.nih.gov/grants/guide/pa-files/PAR-13-182.html)

**Dissertation Support**

R36 Dissertation Support
The National Institute on Drug Abuse (NIDA) announces the availability of NIH Dissertation Award grants (R36) to support drug abuse doctoral dissertation research in NIDA areas of priority. Areas of focus include research on basic and clinical neuroscience and behavior, developmental trajectories, epidemiology, prevention, treatment, services, and/or women and sex/gender differences. Standard application deadlines apply. Further information can be found at: [http://grants.nih.gov/grants/guide/pa-files/PAR-13-182.html](http://grants.nih.gov/grants/guide/pa-files/PAR-13-182.html)

**Conference Travel Awards:**

ASCB MAC, FASEB MARC, Keystone Symposia
The Federation of American Societies for Experimental Biology (FASEB) provides information on their web site about science training and education awards made available through FASEB’s member societies for students, trainees and science mentors. A complete list of upcoming eligible national meetings for travel awards can be found at: [http://www.faseb.org/MARC-and-Professional-Development.aspx](http://www.faseb.org/MARC-and-Professional-Development.aspx)

Keystone Symposia
The Keystone Symposia have made important enhancements to their scholarship program. For a list of 2014-2015 meetings and scholarship and travel award deadlines, please visit [www.keystonesymposia.org/meetings](http://www.keystonesymposia.org/meetings).

**NSF/FDA Scholar-in-Residence at FDA**
The National Science Foundation and the U.S. Food and Drug Administration have established the NSF/FDA Scholar-in-Residence Program at FDA for the investigation of scientific and engineering issues concerning emerging trends in medical device technology. This solicitation provides flexible opportunities for 1) Faculty at FDA; 2) Graduate Student Fellowships; 3) Postdoctoral Fellowships; and, 4) Undergraduate Student Research Experiences. For information visit: [http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5805](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5805).

Northeast Scientific Training Programs (NEST) Retreat
March 6–8, 2015
[http://biomed.brown.edu/imsd/nest/](http://biomed.brown.edu/imsd/nest/)
See you in 2015.