

# IMSD *View*

INITIATIVE TO MAXIMIZE STUDENT DEVELOPMENT

VOLUME 6 ISSUE 3



## Message from the Director

### Role Models for Prospective STEM Trainees

A growing number of STEM trainees pursue careers for which they were never formally trained. As 'alternate' career paths become more commonplace, we need to re-examine what we train our trainees to do and the skill sets with which we equip them. Current training practices prepare trainees well for today's STEM careers, but these careers may no longer exist when trainees eventually enter the workforce. As trainers we know very well how to replicate ourselves - and this strength may in fact limit the future career prospects of our trainees. Increases in the numbers of non-academic STEM professionals reflect the unprecedented extent to which science enters the public sphere in the U.S. Aligning training practice with this new landscape is necessary to promote the vitality of the STEM workforce. Specifically, identifying role models who pursue non-traditional career paths will best serve the needs of the academy that will ultimately train the future STEM workforce. Individuals from under-represented groups, especially racial and ethnic minorities, will be better equipped for success if influenced by STEM professionals in both the academic and non-academic world.

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

## IMSD Partner Students Visit Brown



York College students gathered for a campus tour during their recent visit to Brown. L to R: Ludma Delva, Manjeet Kaur, Abbas Nazir, Shereen Bryan, Siddiqa Moghal

Nineteen students from our IMSD partner institutions got a first-hand look at Brown University during a campus visit on May 1st. Participants connected over breakfast with current IMSD graduate students who are graduates of the partner schools. The day's itinerary included a graduate program information session with presentations by Brown faculty, lunch discussions with IMSD graduate trainees and senior scholars, and tours of research labs. Some students were also able to arrange individual meetings with faculty members. The day concluded with a tour of the Brown campus.

Reflecting on the experience, one partner student stated, "I never considered applying to Brown before I was presented with the opportunity to visit... I didn't think I was good enough to be accepted into such a highly ranked institution. During my visit I learned that I have potential to be a competitive applicant." Another wrote, "This visit opened my eyes to the challenges I will be facing regardless of whether I apply to Brown for graduate studies or elsewhere". A student from New York remarked, "I could not have imagined that a place so overwhelmingly nice could exist on such a chaotic planet." Several of the partner students indicated that they plan to apply to Brown in the Fall. Thanks to all who took part in this exchange, and we look forward to our ongoing collaborations! - KZB

## Save the Dates!

### Training Modules:

Beyond the Hypothesis . . . . .	June 25 & 30, July 2, 7, 9 & 14
Introduction to Statistical Analysis of Data . . . . .	July 14 & 15
Scientific Writing: Key Principles . . . . .	July 27, 28 & 29
Demystifying the PhD Experience . . . . .	Aug. 24-28
Reading Scientific Publications. . . . .	Aug. 27, 28 & 31

## In This Issue

Message from the Director: Role Models for Prospective STEM Trainees . . . . .	1
IMSD Partner Students Visit Brown . . . . .	1
Congratulations . . . . .	2
Fellowships, Awards & Achievements . . . . .	2
Trainee & Program Publications . . . . .	2
IRACDA Postdoctoral Opportunities . . . . .	3
Jackson Heart Study Leader Discusses "Race, Risk and Resilience" . . . . .	3
Funding and Training Opportunities . . . . .	4

# Excellence

## Congratulations

### IMSD Congratulates Our New PhDs!

**Heather Bennett**, IMSD trainee in Molecular Biology, Cell Biology and Biochemistry successfully defended her dissertation on “Loss of Notch or JNK Signaling Results in FOXO-dependent Compensatory Sleep in *C. elegans*” on April 9, 2015. Her research was conducted in the lab of her mentor, Professor Anne Hart. Heather has been accepted to the University of Pennsylvania PENN-PORT Program where she will be working with Professor Robert Kalb starting in August.

**Kirk Haltaufderhyde** – IMSD trainee in Molecular Pharmacology & Physiology, successfully presented himself for the PhD degree on April 29, 2015. Kirk discussed his research on “Transcriptomic Investigation of Pigmentation” conducted in the lab of his mentor, Professor Elena Oancea.

**Anika Toorie**, IMSD trainee in Pathobiology, successfully presented herself for examination on April 6, 2015. Her research on “The Role of the Hypothalamic Nutrient Sensor Sirt1 in the Regulation of the Hypophysiotropic Adrenal and Thyroid Axes” was conducted in the laboratory of Professor Eduardo Nillni. Anika will begin a postdoctoral position at The Cummings School of Veterinary Medicine at Tufts University starting in August.



Counterclockwise from top left: Kirk Haltaufderhyde, Anika Toorie, Kim Sherwood (PhD 2012) with Heather Bennett.

## Fellowships, Awards & Achievements

**Maya Almaraz**, IMSD trainee in Ecology & Evolutionary Biology, is the recipient of a Doctoral Dissertation Improvement Grant in the Directorate for Biological Sciences (DDIG) award from the National Science Foundation for her project entitled “Nitrous Oxide and Dinitrogen Production from Tropical Forest Soils Under Ambient and Fertilized Conditions”.

**Hawasatu Dumbuya**, IMSD trainee in Molecular Pharmacology and Physiology, is the recipient of a Ford Foundation 2015 Predoctoral Fellowship which provides an annual stipend for three years as well as conference travel fund. Hawa also received

Honorable Mention for her application to the National Science Foundation (NSF) Graduate Research Fellowship Program.

**Rafael Gonzalez Cruz**, IMSD trainee in Biomedical Engineering, received an IMSD travel award to present his research at the 2015 Orthopaedic Research Society Annual Meeting in Las Vegas. His poster was titled, “LMNA Gene Expression Serves As a Novel Biomarker for Characterizing Mechanical Phenotype”.

**Eric James**, IMSD trainee in Neuroscience, received the Beth Israel Deaconess Medical Center Department of Neonatology Award at the 2015 New England Science Symposium for his poster presentation on the potential role of HDACi activity in the onset of VPA-induced neurodevelopmental disorders.

**Rosa Martinez Garcia**, IMSD trainee in Molecular Biology, Cell Biology and Biochemistry, received a travel award to attend the Keystone Symposia: Pathways of Neurodevelopmental Disorders held in Tahoe City, CA in March. Rosa presented a poster of her research on “Interrogating thalamic circuit function in a mouse model of Tuberous Sclerosis”.

**Hilary Nicholson**, doctoral candidate in Molecular Pharmacology and Physiology, received an IMSD travel award to present her research at the 2015 American Association for Cancer Research (AACR) in April. Her poster was entitled “Evaluation of structural changes in SN79-derived sigma-2 receptor modulators: effect on apoptotic efficacy in SK-N-SH neuroblastoma”.

## Trainee & Program Publications:

**Fredericks, A. M.**, Cygan, K. J., Brown, B. A., & Fairbrother, W. G. (2015). [RNA-binding proteins: Splicing factors and disease.](#) *Biomolecules*, 5(2), 893-909. doi: 10.3390/biom5020893.PMID: 25985083

**James, E. J.**, Gu, J., Ramirez-Vizcarrondo, C. M., Hasan, M., Truszkowski, T. L. S., Tan, Y. Q., Oupravanh, P. M., Khakhalin, A. S., & Aizenman, C. D. (2015). [Valproate-induced neurodevelopmental deficits in xenopus laevis tadpoles.](#) *Journal of Neuroscience*, 35(7), 3218-3229. doi: 10.1523/jneurosci.4050-14.2015. A feature article on Eric James' research can be viewed on the Brown News website at: <https://news.brown.edu/articles/2015/02/tadpoles>

**Jiménez MP**, Osypuk TL, Arevalo S, Tucker KL, Falcon LM. [Neighborhood socioeconomic context and change in allostatic load among older Puerto Ricans: The Boston Puerto Rican health study.](#) *Health Place*. 2015 May;33:1-8. doi: 10.1016/j.health-place.2015.02.001. Epub 2015 Feb 20. PubMed PMID: 25706323; PubMed Central PMCID: PMC4409499.

**Nicholson H**, Comeau A, Mesangeau C, McCurdy CR, Bowen WD. [Characterization of CM572, a Selective Irreversible Partial Agonist of the Sigma-2 Receptor with Antitumor Activity.](#) *J Pharmacol Exp Ther*. 2015 Jun 1. pii: jpet.115.224105. [Epub ahead of print] PubMed PMID: 26034081.

\***Brown CW**, Brodsky AS, Freiman RN. [Notch3 Overexpression Promotes Anoikis Resistance in Epithelial Ovarian Cancer via Upregulation of COL4A2.](#) *Mol Cancer Res*. 2015 Jan;13(1):78-85. doi: 10.1158/1541-7786.MCR-14-0334. Epub 2014 Aug 28. PubMed PMID: 25169943.

# Community

Trainee & Program Publications continued

\***Borgas DL**, Gao JS, Tong M, Roper N, de la Monte SM. [Regulation of Aspartyl-\(Asparaginyl\)- \$\beta\$ -Hydroxylase Protein Expression and Function by Phosphorylation in Hepatocellular Carcinoma Cells.](#) J Nat Sci. 2015 Apr 1;1(4). pii: e84. PubMed PMID: 26029741; PubMed Central PMCID: PMC4445734.

Crisco JJ, Schwartz JB, **Wilcox B**, Costa L, Kerman K. [Design and Kinematic Evaluation of a Novel Joint-Specific Play Controller: An Application for Wrist and Forearm Therapy.](#) Phys Ther. 2015 Jan 8. [Epub ahead of print] PubMed PMID: 25573759.

\***Wilcox BJ**, Beckwith JG, Greenwald RM, Raukar NP, Chu JJ, McAllister TW, Flashman LA, Maerlender AC, Duhaime AC, Crisco JJ. [Biomechanics of head impacts associated with diagnosed concussion in female collegiate ice hockey players.](#) J Biomech. 2015 Apr 15. pii: S0021-9290(15)00221-3. doi: 10.1016/j.jbiomech.2015.04.005. [Epub ahead of print] PubMed PMID: 25913243.

\*Brown University IMSD Alumnus (PhD, 2014)

## IRACDA Postdoctoral Opportunities

Recent IMSD graduate, **Dr. Heather Bennett**, was successful in obtaining a highly competitive postdoctoral position at the University of Pennsylvania. The PENN-PORT program is one of several [NIH Institutional Research and Academic Career Development Awards \(IRACDA\) programs](#) across the country that combine a traditional mentored postdoctoral research experience with an opportunity to develop academic skills through workshops and mentored teaching assignments at a partner institution. Heather spoke with The View about her experience with the IRACDA programs and application process.

### Q. Why did the IRACDA programs appeal to you?

A. I came into graduate school with the idea that I would go into academia. I knew that I liked teaching; however I was unsure if I wanted to be an academic researcher at a more research intensive institution or teach and conduct on a smaller scale at a liberal arts institution. IRACDA programs offered a perfect opportunity to combine passion for research and teaching.

### Q. How did you find IRACDA programs? What was your timeline?

A. I became aware of the IRACDA programs through the IMSD module, "Professionalism & Career Development: Preparing for the Postdoc Experience". I went online and researched more information regarding the structure of the program, number of accepted fellows, and application deadlines. Unlike traditional postdocs, many IRACDA positions have application deadlines ranging from early February to April 1st. I started the application process in November. Applicants will have to think about when they will be defending their dissertations and how that will factor into IRACDA program deadlines.

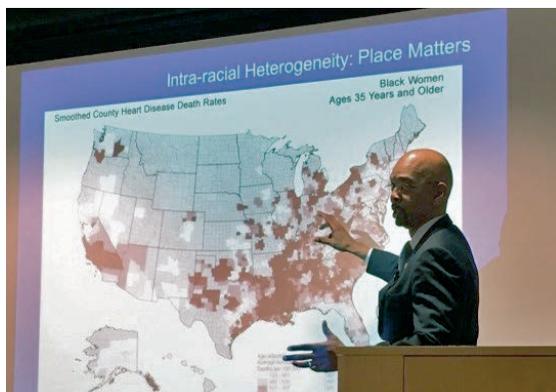
### Q. How did you identify a research mentor?

A. I went to each IRACDA program and looked over requirements. Some programs require applicants to identify a mentor/sponsor prior to applying to the IRACDA program. Applicants will need to email faculty and determine if they are interested in hiring a postdoc, interview with the PI, and then apply to the IRACDA program. In this case, applicants will need to begin the application process a little earlier. Other IRACDA programs applicants do not need a mentor at the time of completing applications but are asked to list potential research labs based on their training and interests. So applicants need to think about what areas of research they will want to pursue as a postdoctoral researcher. Be sure to give careful thought here. If asked for an interview the listed faculty are who you will interview with.

### Q. Do you have any other helpful tips for students who may consider applying to IRACDA programs?

A. Sure. First, remember these programs specify that IRACDA fellows spend 75% of their time at the research bench and 25% of the time teaching. While most of the fellows time will be at the bench, teaching is an important part of the program. In fact, separate interviews are held to determine applicants' commitment to teaching. So, in preparing your application make sure to highlight and discuss your teaching and mentoring experiences in a meaningful way. Second, start early. Do not wait until the last minute! The application process varies from program to program. You will have to write application essays which will require some thought. Third, think about what areas of research you are interested in, and identify principal investigators early. Establishing connections and networking are still very useful, but can take time. So the sooner you start, the better off you will be. - HD

## Jackson Heart Study Leader Discusses "Race, Risk and Resilience"



The Brown IMSD Program, in collaboration with the Innovations in Behavioral and Social Health Sciences (iBSHS) lecture series, presented a guest seminar on April 24th with Dr. Herman A. Taylor of Morehouse School of Medicine on "Race, Risk, and Resilience". Dr. Taylor is leader of the Jackson Heart Study (JHS), the largest epidemiological study of African Americans and cardiovascular disease of its kind ever undertaken. His talk focused on issues of racial disparities in medical research and treatment and how insights gained from the JHS can help us to address some of these challenges. Following the talk, participants were invited to continue the conversation over lunch with the speaker. [View the video: "Race, Risk, and Resilience: Launching and Learning from the Jackson Heart Study"](#) - KZB

Dr. Herman Taylor discussed racial health disparities at April lecture event

# Collaboration

## Funding and Training Opportunities

### Predocctoral Individual Fellowships

NIH F31 Predocctoral Individual National Research Service Award (NRSA)

Annual Diversity Deadlines: Aug. 13, Dec. 13, Apr. 13

AIDS-related applications: Sept. 7, Jan. 7, May 7

[Ruth L. Kirschstein National Research Service Awards for Individual Predocctoral 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/training/F\\_files\\_nrsa.htm](http://grants.nih.gov/training/F_files_nrsa.htm)

[National Science Foundation - Doctoral Dissertation Improvement Grants in the Directorate for Biological Sciences \(DDIG\)](#) in selected areas of the biological sciences. These grants provide partial support of doctoral dissertation research to improve the overall quality of research. Application Deadline: October 8, 2015; Second Thursday in October, Annually thereafter. For further information: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5234](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5234)[http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5234](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5234)

[The Christine Mirzayan Science & Technology Policy Graduate Fellowship Program](#) provides early career individuals with the opportunity to spend 12 weeks at the National Academies in Washington, DC learning about science and technology policy and the role that scientists and engineers play in advising the nation. Application for the 2016 session of the Mirzayan Fellowship will become available on July 1, 2015. For further information about the program and how to apply can be found at: <http://sites.nationalacademies.org/pga/policyfellows/>

### Conference Travel Awards:

**ASCB MAC, FASEB MARC, Keystone Symposia**

**The Federation of American Societies for Experimental Biology (FASEB)** provides science training and education awards made available through FASEB's member societies for students, trainees and science mentors. **NOTICE: 2015 Travel Awards for meetings after June 30, 2015 are Contingent Upon Funding Availability.** Further information can be found on the FASEB website: <http://www.faseb.org/MARC-and-Professional-Development/Travel-Awards/Eligible-Meetings---Conferences.aspx>

**Keystone Symposia on Molecular and Cellular Biology** offers a variety of conferences spanning the range of the life sciences. Scholarships are available for **Students** and **Postdoctoral Fellows** from underrepresented backgrounds. For information about upcoming meetings, scholarships and travel awards, visit: <http://keystonesymposia.org/>

### Proctor & Gamble Research & Development - PhD 2015 FIRST Conference

Procter & Gamble invites applications for its Focusing on Industrial Recruitment of Scientific Talent (FIRST) Conference to be held September 20-23, 2015. This conference is primarily intended for underrepresented doctoral and postdoctoral scientists from STEM disciplines who want to learn more about industrial research careers. Participants will travel to

Cincinnati-based technical centers to view industrial careers in action, network with successful scientists and professionals, and gain a deeper understanding of the realities of cultural and workforce diversities. Travel & hotel accommodations are at no cost to participants. For more information: <http://pg.jobs/cincinnati-oh/research-development-phd-2015-first-conference/13A852EBB10546738A51E8759D535F26/job/>



Dean Jabbar Bennett (L) with Anika Toorie as she receives PhD degree

Newsletter layout and design by Karen Ball and Brown Graphic Services

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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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