27th Annual
Pathobiology Graduate Program Retreat
August 29, 2017
Squantum Association
East Providence
Welcome to our new Pathobiology graduate students!

Iliana Escobar
   B.A., Biology
   Brown University, 2013

Jacqueline Howells
   B.S., Environmental Sciences
   University of California – Berkeley, 2013

Shannon Martin
   B.A., Biology
   Assumption College, 2015

Maydelis Minaya
   B.S., Biology
   SUNY Geneseo, 2016

Anders Ohman
   B.A., Biology, 2010 and M.A., Biology, 2011
   Clark University

Swathi Penumutchu
   B.S., Biological Sciences
   University of Maryland – Baltimore County, 2017
Schedule of Events

7:50–8:25am  Continental Breakfast and Poster Set-Up

8:30am  Welcoming Remarks: Program Director Jonathan Reichner

8:40 – 8:55am  Introduction of New Students

9:00 – 9:10am  Elizabeth O. Harrington, Ph.D.
Associate Dean for Graduate and Postdoctoral Studies

Jen Daly, Program Coordinator
Initiative to Maximize Student Development (IMSD) Program

9:10 – 9:25am  Kevin Carlson
Manager, Brown University Flow Cytometry Facility

Geoffrey Williams
Manager, Leduc Bioimaging Facility

9:30 – 9:50am  Eboni Chambers, 6th-year graduate student – “The Role of Adenosine Signaling in Pseudomonas-Induced Acute Lung Injury”

9:55 – 10:15am  Susan Leggett, 5th-year graduate student – “Swarming Migration of Co-Attracting Epithelial Cells into Fractal-Like Clusters”

10:15 – 10:30am  Coffee Break

10:30 – 11:15am  Gary Koretzky, M.D., Ph.D., Dean, Weill Cornell Graduate School, Vice Dean for Research, and Frank H.T. Rhodes Distinguished Professor of Cardiovascular Biology and Genetics, Weill Cornell Medical College – “Insights into Hematopoietic Cell Development & Function through Targeted Mutation of an Adapter Protein”

11:20–12:00  POSTER SESSION I (odd number posters)

12:00pm  Lunch

1:15 – 1:35pm  Zachary Wilson, 5th-year graduate student – “The Role of Vinculin in Neutrophil β2 Integrin-Dependent Adhesion and Motility”

1:40 – 2:25pm  Jamie DeWitt, Ph.D., Associate Professor, Department of Pharmacology and Toxicology, Brody School of Medicine, East Carolina University – “Not Seeing the Forest for the Trees: How the Complexity of the Immune System Challenges Policies for Environmental Health Protection”

2:30 – 3:00pm  Faculty Steering Committee Meeting with Drs. DeWitt & Koretzky

2:30 – 3:20pm  POSTER SESSION II (even number posters)

3:30 pm  Poster Awards and Closing Remarks
2017 Poster Presentations

1. Role of IgA in the Maintenance of Gut Homeostasis. Kevin Holt and Shipra Vaishnava

2. Effects of DNA Damage on Natural Transformation in Bacillus subtilis. Benjamin Joseph Korry and Peter A. Belenky

3. Coinfection with Klebsiella oxytoca leads to decreased host resilience to Influenza A virus infection. Kayla Lee and Amanda Jamieson

4. The role of the Sox9b transcription factor in early organogenesis in Danio rerio. Nathan Martin* and Jessica Plavicki


6. The role of phase separation in regulating a eukaryotic transcription circuit. Mae I. Staples†††, Corey Frazer, Matthew P. Hirakawa, and Richard J. Bennett

7. Elucidating the Role of Host Metabolism on Bacterial Antibiotic Responses. Jenna Wurster, Damien Cabral, and Peter Belenky


10. Genetic Control of Epigenetic Switching Defines Commensalism and Pathogenesis in C. albicans. Shen-Huan Liang, Matthew P. Hirakawa, and Richard J. Bennett


13. Antimicrobial Mechanisms in the Context of the Microbiome. Damien Cabral††, Jenna Wurster, and Peter Belenky

14. Fine Dissection of the Microbiome in a Spatial Context. Kellyanne Duncan and Shipra Vaishnava

15. Role of bacteria regulated vitamin A metabolism in immune homeostasis in the gut. Mayara Grizotte-Lake and Shipra Vaishnava


17. Stress Response and Natural Transformation in Vibrio cholera. Aislinn D. Rowan† and Peter A. Belenky

18. Mechanisms of fibroblast to myofibroblast differentiation following exposure to engineered nanomaterials (ENMs). Alysha Simmons*, Ian Wong, and Agnes Kane

19. MechanomiR-365: a homeostatic regulator of pro-inflammatory cytokine IL-6 expression during osteoarthritis in mice and human. Yun Gao, Nan Hu, Zhiyu Huang, Pengcheng Liu, Kun Yang, and Qian Chen


22. TbSmee1 regulates hook complex morphology and flagellar pocket uptake in Trypanosoma brucei. Jenna A. Perry, Amy N. Sinclair-Davis, Michael R. McAllaster, and Christopher L. de Graffenried

24. *The reciprocal impacts between wound and pulmonary infections.*  
   **Yun Xu**, Meredith Crane, William Henry, Jorge Albina, and Amanda Jamieson

25. *The non-classical CD8⁺ T cell response to murine cytomegalovirus.*  
   **Courtney K. Anderson**, Emma C. Reilly, Angus Y. Lee, Russell E. Vance, and Laurent Brossay

   **Eboni Chambers**, Alexis White, Alexander Vang, Zhengke Wang, Ting-Ting Mills, Michael Blackburn, Gaurev Choudhary, Alfred Ayala, Sharon Rounds, and Qing Lu

27. *Loss of the hypoxia inducible transcriptional factors HIF-1α and HIF-2α during proteotoxic stress by formaldehyde.*  
   **Lauren Watts** and Anatoly Zhitkovich

**Postdoc poster presentations**

28. *Toxicity of Novel 2D Manganese Oxide Nanosheets in Fish Cells.*  
   **Cynthia Browning**, Evan Gray, Kyle Gion, Charles Vaslet, Norma Messier, Robert Hurt, and Agnes Kane

29. *Hypoxia signaling and hepcidin deficiency in inherited manganese excess due to slc30a10 mutation.*  
   **Milankumar Prajapati**, Courtney Mercadante, Miriam Dash, Heather Conboy, and Tom Bartnikas

**TRAINING GRANT AND FELLOWSHIP SUPPORT:**

* Support by the T32 Environmental Pathology Training Grant from the National Institute of Environmental Health Sciences
** Support by the Brown University Initiative to Maximize Student Development (IMSD) Program
*** Support by the Ruth L. Kirschstein National Research Service Awards (NRSA) F31 Fellowship
† Support by the Brown University Presidential Fellowship
‡‡ Support by the National Science Foundation (NSF) Graduate Research Fellowship Program
‡‡‡ Support by the Sidney E. Frank Fellowship
Charles "Chick" Kuhn Graduate Award in Disease Pathogenesis

The "Charles 'Chick' Kuhn Graduate Award in Disease Pathogenesis" was established in 2002 to commemorate the 10th anniversary of the Pathobiology Graduate Program and to honor Charles Kuhn III, M.D.

An internationally recognized lung pathologist, Dr. Kuhn co-founded the Brown Pathobiology Graduate Program in 1992 with Professor Kim Boekelheide in the Department of Pathology and Laboratory Medicine.

The Kuhn Award is presented annually to the best graduate student presentation on mechanisms of disease.

2002 Rachelle Solomon 2009 Alex Valm
2003 Nikia Laurie 2010 Chathuraka Jayasuriya
2004 Stanimir Ivanov 2011 Nicholas Heger
2005 Ana-Marie Dragoi 2012 Matthew Hirakawa
2006 Aisling Dugan 2013 Angel Byrd
2007 Douglas Wilson 2014 Margarite Tarrio
2008 Meredith Crane 2015 Adeola Adebayo
2009 Benjamin Moyer 2016 Yun Gao

The Rhonda K. Simper-Ronan Graduate Award in Cancer Research

The Pathobiology Graduate Program established the ‘Rhonda K. Simper-Ronan Graduate Award in Cancer Research’ in 2008 to commemorate the commitment to research excellence and perseverance of one of our graduates, Rhonda Simper-Ronan, Ph.D. (class of 2007). The award is given annually to a current Pathobiology graduate student whose dedication to research and accomplishments honors the memory of Dr. Simper-Ronan. The award is presented to the student:

1. whose research is relevant to cancer,
2. who contributes to the graduate program, and
3. whose inspirational accomplishments have distinguished and set them apart from their peers.

2008 Bonnie Lau 2012 William Accomando
2009 Michele Avissar-Whiting 2013 Jennifer Wardell
2010 Pamela Gaddi 2016 Susan Leggett
2011 Ashley Smith
Program Directors

Richard Bennett
Jonathan Reichner

2017 Retreat Coordinator
Michele Welindt

Student Committee
Kellyanne Duncan
Jenna Perry