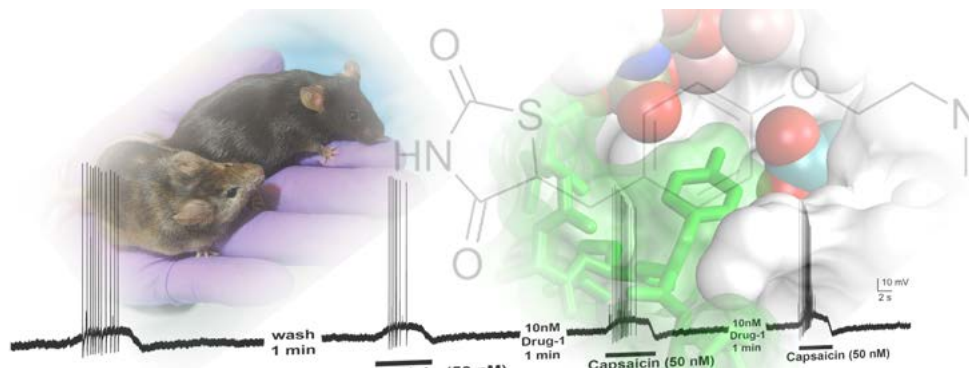


Iowa Pharmacology NEWS

FOR ALUMNI AND FRIENDS OF THE UNIVERSITY OF IOWA DEPARTMENT OF PHARMACOLOGY

VOLUME 4 ISSUE 2

FALL 2016



Gift from alum creates Ranbir K. Bhatnagar Scholar Awards

Pharmacology is extremely pleased to announce that a \$50,000 gift from a generous alumnus has been used to establish a trainee travel award named in the honor of **Dr. Ranbir Bhatnagar**, Professor Emeritus of Pharmacology. The anonymous donor wished to recognize the positive impact that Dr. Bhatnagar had upon their career. Bhatnagar made outstanding teaching and research contributions during his long career in Pharmacology. His research focused on the molecular mechanisms of uptake of the neurotransmitter choline in the brain and the role of the cholinergic system in cognitive function, learning and memory. He was a tenacious teacher, who challenged students to synthesize from the concepts of their foundational learning. In this and ensuing years, ***Ranbir K. Bhatnagar Scholar Awards*** will be given to Departmental Graduate Students and Postdoctoral Scholars who will present their work at national or international meetings. The Department thanks our donor for their generous contribution to Pharmacology training, and for making possible this well deserved recognition of Dr. Ranbir Bhatnagar. Future newsletters will highlight the research findings of trainees who receive these new awards.

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Iowa Pharmacology OUR CONGRATULATIONS

Quelle receives 2015 John P. Long Teaching Award



The Carver College of Medicine announced last Spring that **Dr. Dawn Quelle**, Associate Professor of Pharmacology, received the *2015 John P. Long Teaching Award in the Basic Sciences*.

Given in posthumous honor of esteemed Pharmacology Professor John Paul “J.P.” Long, the award recognizes basic science faculty who not only demonstrate unusually significant and meritorious achievement in teaching throughout their career, but who are also accomplished scientists and good citizens. Dawn has shown excellence in teaching across a variety of venues, including in lecturing in our graduate and professional courses, in coordinating the *Advanced Problem Solving in Pharmacological Sciences* course that is an important component of our training grant curriculum, and especially in the mentoring of numerous trainees. Her nomination was strongly supported by compelling letters from several current and former trainees who described her passion for mentoring and research, and the impact she had on their scientific and career development. Our congratulations to Dawn on this prestigious award!

Dr. Potthoff receives Early Career Scholar Award



Assistant Professor **Matthew Potthoff** of Pharmacology was recognized this past Spring with the *Early Career Scholar Award* of the Iowa

Office of Research and Economic Development. Potthoff received the prestigious award at this year's *Celebrating Excellence Awards Ceremony*. The award is given to early career faculty who have demonstrated excellence in research, scholarship and/or creative activity and show promise of making a significant contribution to their field. Matt received his Ph.D. in Genetics and Development from the University of Texas Southwestern Medical Center in 2007, and joined the faculty of Pharmacology in 2012. His research interest is in identifying novel liver-derived

secreted factors that regulate nutrient availability and energy homeostasis. His laboratory is trying to identify a new therapeutic to treat metabolic syndrome. Since joining Pharmacology, Matt has been remarkably productive and has received notable accolades including a Junior Faculty Award from the American Diabetes Association (ADA). He has published multiple, highly cited papers in top journals including *Diabetes* and *Cell Metabolism*. Matt has done exceptionally well in obtaining extramural funding for his lab, including grants from the National Institutes of Health, the American Diabetes Association, and the Edward Mallinckrodt Jr. Foundation.

Grobe receives Corridor Journal Forty under 40 Award



Dr. Justin Grobe, Assistant Professor of Pharmacology, has been selected by the *Corridor Business Journal* as one of their *Forty under 40 Award* honorees for 2016. His profile along with those of all honorees was featured in the *Journal* on October 24. The annual *Forty under 40*

Awards recognize 40 leaders under the age of 40 who have made a significant impact in their organization and/or community in their early careers. Honorees are chosen by a selection committee of the previous year's winners. Justin participated in an exclusive congratulatory luncheon and group photo opportunity at The University Athletic Club in September, and an awards dinner in October, at the Cedar Rapids Marriott. Our congratulations to Justin on this well deserved award!

Kwitek to serve on NIH Program Project Review Committee



Dr. Anne Kwitek, Associate Professor of Pharmacology, has been selected to serve as a member of the *Heart, Lung, and Blood Program Project Review Committee* (HLBP) – Heart, Lung, and Blood Initial Review Group of the National Heart, Lung, and Blood Institute from July 1, 2016 –

June 30, 2020. The HLBP committee provides an initial review of submitted program project grants and makes recommendations regarding applications to be supported by the institute.

Iowa Pharmacology OUR CONGRATULATIONS

Rahmouni receives Korner Hypertension Award



Dr. Kamal Rahmouni, Professor of Pharmacology, was recently honored with the 2016 Paul Korner Award of the *International Society of Hypertension* (ISH). Presented in September to Rahmouni at the ISH Awards Ceremony and Presidential Lecture in Seoul, South Korea, the Korner Award recognizes scientists who have made outstanding contributions to hypertension research in the field of neuroscience.

Rahmouni's research focuses on the neurobiology of metabolism, energy balance, and cardiovascular function, as well as related disorders such as obesity, diabetes, and hypertension. He is a member of the *Fraternal Order of Eagles Diabetes Research Center Obesity Research and Education Initiative* at the UI and the *UIHC Center for Hypertension Research*. Established in 2013 and endowed by the *High Blood Pressure Research Foundation*, the award honors the late Paul Korner, an international expert in hypertension research. Rahmouni is the second recipient of this biennial award. Kamal's award was recently featured in [The Daily Iowan](#).

Pharmacology faculty receive Hypertension Research grants

The University of Iowa *Center for Hypertension Research* announced earlier this year the awardees of its second round of *Collaborative Pilot and Feasibility Projects*. Four pilot projects were selected for funding for the 12-month period that started July 1, 2016. The awards range from \$40,000 to \$60,000.

The pilot projects involve collaborations among eight faculty from five departments in the UI Carver College of Medicine, with two of the investigators having their primary appointments in Pharmacology. The program supports faculty who are new or established in the field of hypertension research. The newly funded projects are:

- *Regulation of Vascular Reactivity by Endothelial LRRC8 Proteins*: Rajan Sah and Kaikobad Irani (Internal Medicine)
 - *Study of a Novel Rat Knockout of RGD1562963 in Hypertension and Metabolic Syndrome*: **Anne E. Kwitek** (Pharmacology) and Garry Buettner (Radiation Oncology)
 - *Preeclampsia Exposure and Neurodevelopment: Infant Outcomes and Mechanisms*: Hanna Stevens and Peggy Nopoulos (Psychiatry)
 - *Placental Gq Signaling in Preeclampsia*: Katherine N. Gibson-Corley (Pathology) and **Justin L. Grobe** (Pharmacology)
- The awards were originally announced in [Iowa Now](#).

Student Invitee Robert Lefkowitz Presents The 2016 Michael J. Brody Lecture



In October, Dr. Robert Lefkowitz of Duke University joined the long list of preeminent scientists chosen by Pharmacology graduate students to present the *Michael J. Brody Lecture*. Inaugurated by the Department of Pharmacology in 1993 and now part of the *Distinguished Biomedical Scholar Lecture Series* of the Carver College of Medicine, the annual lecture was established in honor of its namesake, **Dr. Michael J. Brody**, a long-time Professor of Pharmacology who was an esteemed cardiovascular researcher, an outstanding educator and mentor, and a leading voice in University governance. Dr. Lefkowitz, the James B. Duke Professor of Medicine and Professor of Biochemistry and Immunology at Duke University and an Investigator of the Howard Hughes Medical Institute, was a fitting choice for this honor. He is a researcher of unparalleled excellence, whose work towards the discovery and characterization of G protein-coupled receptors constituted revolutionary advancements in

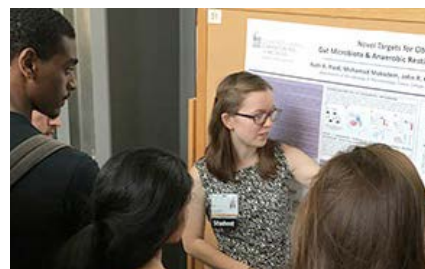
pharmacologic science. Among his many honors, Lefkowitz shared the 2012 Nobel Prize in Chemistry. His lecture was entitled "Seven Transmembrane Receptors." All in Pharmacology thank Dr. Lefkowitz for helping us honor the legacy of Michael J. Brody.

Read more about the Michael J. Brody Lecture at <https://www.medicine.uiowa.edu/pharmacology/news-events/michael-j-brody-memorial-lecture> and see the CCOM news item <https://www.medicine.uiowa.edu/Newsarticle.aspx?id=38783>.

Iowa Pharmacology STUDENT CORNER

Riedl receives Medical Student Research Excellence Award

In September, **Ruth A. Riedl** received the *Excellence Award in Pharmacological and Toxicological Sciences Research Award* for her presentation at the annual Carver College of Medicine *Medical Student Research Day*. Ruth is a first-year medical student working between the laboratories of **Justin Grobe, Ph.D.** (Pharmacology) and John Kirby, Ph.D. (Microbiology), and in collaboration with Mohamad Mokadem, M.D. (Gastroenterology). Her research is focused on determining the contributions of gut bacteria to energy homeostasis. Using instrumentation only available in the Grobe laboratory and in three other laboratories worldwide, she determined that the energy utilization of gut bacteria contributes approximately 10% of total energy expenditure for a normal adult mouse, that this contribution is almost entirely anaerobic, and that various interventions such as switching between high-fat and high-carbohydrate diets can grossly modify this contribution. Further, Ruth has determined that much of the metabolic benefit of Roux-en-Y gastric bypass surgery is actually derived from increasing the biomass of thermogenic gut bacteria and thereby anaerobic metabolism. Congratulations to Ruth!



Magdalene Ameka a winner in 3 Minute Thesis Competition



Magdalene Ameka, a graduate student in **Dr. Matt Potthoff's** laboratory, won the *People's Choice Award* at the *3 Minute Thesis Competition* of the UI Graduate College. One of sixteen finalists, she competed in the final round in November in the Art Building West, presenting a talk that described her thesis research entitled "Lose the Weight by Ignoring the Fat."

Magdalene is a third year Molecular and Cellular Biology Program graduate student doing her thesis research in Pharmacology. She came to the US from Kenya in 2006, and received a Bachelor's degree in 2009 from the University of Houston in Biochemistry and Biophysical Sciences. She is currently working to understand how the liver-derived hormone fibroblast growth factor 21 (FGF21) regulates energy homeostasis. In whatever free time grad school allows her, she likes to be outdoors enjoying good food, good wine and good music.

The *3 Minute Thesis Competition* challenges graduate students to communicate their research in three minutes or less in non-specialist language. Learn more about all the finalists on the finalist [spotlight website](#).

Linggonegoro receives APS Research Excellence Fellowship



Danny Linggonegoro, an undergraduate researcher in the laboratory of **Dr. Justin Grobe**, Assistant Professor of Pharmacology, has been selected to receive an *Undergraduate Research Excellence Fellowship* (UGREF) from the American Physiological Society (APS). The UGREF program annually funds just six full-time undergraduate students with significant prior laboratory research experience to work for ten weeks during the summer in the laboratory of an established APS investigator. Danny's ongoing project is focused on elucidating the mechanisms by which arginine vasopressin contributes to the pathogenesis of preeclampsia. As a UGREF fellow, Danny will also receive a travel grant to support his attendance and present his research data at the 2017 APS annual meeting, Experimental Biology (EB 2017). Our congratulations to Danny on this prestigious award!

Iowa Pharmacology PHOTO UPDATE

Iowa Pharmacology Faculty

Sitting (left to right): Matt Potthoff, Huxing Cui, Songhai Chen, Anne Kwitek, Kamal Rahmouni, Curt Sigmund, Katelyn Ahlers, John Koland, Minnetta Gardinier. *Standing:* Toshi Kitamoto, Frank Faraci, Barry Kasson, Stefan Strack, Dawn Quelle, Rory Fisher, Mario Ascoli, Chris Benson, Justin Grobe. *Not pictured:* Tim Brennan, Donna Hammond, Don Heistad, A. Kim Johnson, Kathy Lamping, Fred Quelle, Debra Schwinn, Yuriy Usachev and David Wiemer.



Introducing Our New Students!!

Iowa Pharmacology News extends its warm welcome to predoctoral trainees recently joining Pharmacology! In the past year, seven graduate students have either directly enrolled in the Pharmacology Graduate Program, or have, as interdisciplinary graduate program students, begun their thesis research in Pharmacology labs. These students, their former institutions, program affiliations, and thesis advisors are:



Shi Fang - Sun Yat-sen University, Pharmacology, rotating

Chandra Kumar Maharjan - Wright State University, Pharmacology, rotating



Mengya Wang - University of Kansas, Pharmacology, rotating

Karen Clark - Univ of Michigan-Ann Arbor, Genetics, Kwitek



Sharon Idiga - University of California-Santa Cruz, Molec. and Cell. Biol., Potthoff

Please join us in welcoming these talented new students, and wishing them the best of luck with their careers!

GIVING OPPORTUNITIES

The research and teaching missions of UI Pharmacology receive critical support in the form of generous gifts from friends and alumni. Contributions to the **Pharmacology Development Fund** or specifically designated gifts to UI Pharmacology can be made at:

[GIVING OPPORTUNITIES](#)

CONTACT US

To mail in a gift or to receive more information about giving, please contact:

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OUR APPRECIATION

We thank those of you who have already made generous contributions to UI Pharmacology!

THE FUNDING STREAM

Pharmacology makes vigorous effort to procure funding

In the past six months, the vigorous efforts that Pharmacology faculty and trainees continue to make towards procuring funding for their research and training again paid off rather well, with a large number of fellowships and grants being awarded in this period! Not only have our faculty won new extramural funding, but our postdoctoral scholars and predoctoral and undergraduate students have been prolific in terms of fellowship awards received. Each of these awards enhances our research portfolio. The large number of new awards in this short period is even more remarkable considering the even larger number of submitted applications and the enormous effort on the part of our staff that it represents. The Department applauds the efforts of all its faculty and trainees who have striven to procure grants and fellowships in this still challenging funding climate!

Trainee fellowship awards

Undergraduate Student Awards

- Mohamed Rouabhi (Laboratory Assistant, Rahmouni lab)**
American Heart Association (AHA) Summer Undergraduate Fellowship
- Sarah Small (Laboratory Assistant, Potthoff lab)**
American Heart Association (AHA) Summer Undergraduate Fellowship
- Danny Linggonegoro (Laboratory Assistant, Grobe lab)**
American Physiological Society UGREF Summer Undergrad Fellowship

Graduate College Fellowship Awards - Spring 2017

Post-Comprehensive Research Awards

- Katherine Perschbacher (MCB Graduate Student, Grobe lab)
- Addison Woll (MCB Graduate Student, Sigmund lab)
- Jennie Liu (Graduate Student, Strack lab)
- Jianing Song (Graduate Student, Strack lab)

Ballard Seashore Dissertation Fellowship

- Kyle Flippo (Graduate Student, Strack lab)

Extramural Predoctoral Fellowship Awards

- Jeremy Sandgren (Graduate Student, Grobe lab)**
American Heart Association - Vascular mechanisms of vasopressin action in a novel mouse model of preeclampsia
- Charles Warwick (Graduate Student, Usachev lab)**
PhRMA Foundation - The Role of the Complement System in Neuropathic Pain
- Balyssa Bell (Graduate Student, Rahmouni lab)**
NIH Predoctoral National Research Service Award - mTORC1 in POMC Neurons as a Mediator of the Hemodynamic and Sympathetic Effects of Leptin

Extramural Postdoctoral Fellowship Award

- John Reho (Postdoctoral Scholar, Rahmouni lab)**
American Heart Association - mTORC1 Signaling in the Hypothalamus and Cardiovascular Regulation

Faculty grant awards

New Extramural Grant Awards to Pharmacology Faculty (May 2016 - Nov 2016)

- Songhai Chen (Associate Professor)**
DOD BCRP - Targeting Tumor-initiating Cells for the Therapeutics of Breast Cancer, \$1,143,750
- Kathleen Markan (Postdoctoral Scholar, Potthoff lab)**
NIH K01 - A Novel Mechanism to Increase the Beiging of White Adipose Tissue, \$526,191
- Dawn Quelle (Associate Professor)**
NET SPORE - Development of Shared NET PDX Repository, \$50,000
- Curt Sigmund (Professor and Chair)**
NIH PPG Minority Supplement
PPG-Genetic and Signaling Mechanisms in the Central Regulation of Blood Pressure, \$91,167
- Yuriy Usachev (Professor)**
NIH R01 - Molecular Mechanisms and Functions of Mitochondrial Ca²⁺ transport in Neurons, \$1,844,401
American Epilepsy Society Seed Grant - The Role of Mitochondrial Ca²⁺ Uniporter (MCU) in Neuronal Excitability and Epilepsy, \$20,000

Pharmacology alums return as panelists for careers conference

Pharmacology grads **Dr. Elizabeth Lyddon** and **Dr. Caitlin Runne-Janczy** returned to campus in April to serve as panelists for the *Careers Outside the Academy Conference* hosted by the UI Graduate College. They related how they parlayed their graduate educations into impactful careers outside of the academy. Their unique bios are summarized here.



Elizabeth Lyddon

Education: Ph.D., Pharmacology, University of Iowa
(Stefan Strack laboratory)

Expertise: Scientific Writing

Employer: Medtronic

Elizabeth Lyddon (formerly Oberg) earned her Ph.D. in Pharmacology in 2012 studying the regulation of tyrosine hydroxylase. In 2013, Elizabeth began a postdoc at the University of Minnesota studying the cellular effects of HIV-associated neurodegeneration. With a desire to better understand complete physiological systems and the patient as a whole, Elizabeth moved into industry and is currently working as a Senior Vigilance and Quality Specialist for the Cardiac Rhythm and Heart Failure business unit at Medtronic.

Caitlin Runne-Janczy

Education: Ph.D., Pharmacology, University of Iowa
(Songhai Chen laboratory)

Expertise: Content Development

Employer: eScience Labs, Inc.



Knowing early in her training that she wanted to pursue a career outside of academia, Caitlin Runne-Janczy simultaneously began a post-doctoral fellowship in the Department of Biochemistry at UI and a freelance editing career at Cactus Global. She has since combined her passion for writing and education at eScience Labs as a subject matter expert. Her work involves developing digital curricula and hands-on labs for students taking on-line Biology, Anatomy and Physiology, Microbiology, and Forensics courses.

Pharmacology and Diabetes Research Center trainee Katie Markan receives NIH K01 grant

Kathleen Markan, Ph.D., a postdoctoral scholar in the laboratory of Assistant Professor of Pharmacology and *Fraternal Order of Eagles Diabetes Research Center* member **Dr. Matthew Potthoff**, was recently awarded a K01 Research Scientist Development Award from the National Institute of Diabetes, Digestive and Kidney Diseases. Markan was previously supported by an NIH postdoctoral fellowship. Under the conditions of her new award she will receive \$526,191 in funding over 4 years. In her K01 proposal, entitled "A Novel Mechanism to Increase the Beiging of White Adipose Tissue," Markan elaborated on the research she proposed:



"...methods of increasing energy expenditure in fat tissue could offer new therapeutic avenues for the treatment of obesity. Beige adipocytes are specialized fat cells found within white fat depots that become activated in response to various stimuli such as cold exposure. Activated beige adipocytes express a protein known as uncoupling protein-1 (UCP-1) which essentially allows excess energy, such as glucose and lipid, to be dissipated as heat. Accordingly, beige adipocytes could be harnessed as a means to essentially burn off excess energy and prevent excessive fat accumulation. However, little is known regarding the development of these specialized fat cells. The transcription factor TBX1 has been identified in beige adipocytes; yet, nothing is known regarding its metabolic or transcriptional role. To begin to address this, we have generated novel in vivo models in which we have deleted or overexpressed TBX1 in a fat cell specific manner. Our studies will unite advanced physiological techniques and large scale molecular and bioinformatic analysis in order to determine the role of TBX1 in the development and metabolism of beige adipocytes. Collectively, our studies will provide immediate and long-term information regarding the role of TBX1 in beige adipocytes which in turn may provide clinically relevant insight regarding the development and potential treatment of obesity."

K01 awards are intended to support the transition of productive research trainees into successful independent investigators. Receiving this prestigious award is a sure indicator of a burgeoning research career!

UPCOMING EVENTS

Center for Hypertension Nov 18 Research Seminar

James M. Roberts, MD
Professor, Department of
Obstetrics, Gynecology &
Reproductive Sciences and
Epidemiology, Magee-Womens
Research Institute, University of
Pittsburgh

Visiting Speaker Seminar Nov 29

Jongsook Kim Kemper, PhD
Professor
Molecular and Integrative
Physiology, University of Illinois at
Illinois-Champaign

Visiting Speaker Seminar Dec 6

Ken Nakamura, MD, PhD
Assistant Professor, Neurology,
University of California - San
Francisco, Assistant Investigator,
Gladstone Institute of Neurological
Disease

Center for Hypertension Dec 16 Research Seminar

Birdie (Babbette) LaMarca, PhD
Associate Professor
Obstetrics and Gynecology,
University of Mississippi Medical
Center

Diversity Speaker Jan 31

Jerrel L. Yakel, PhD
Senior Investigator
Neuroscience, National Institutes
of Health

Trainee Invited Speaker Feb 14

Steven D. Crowley, MD
Associate Professor
Medicine, Duke University School
of Medicine

Center for Hypertension Feb 24 Research Seminar

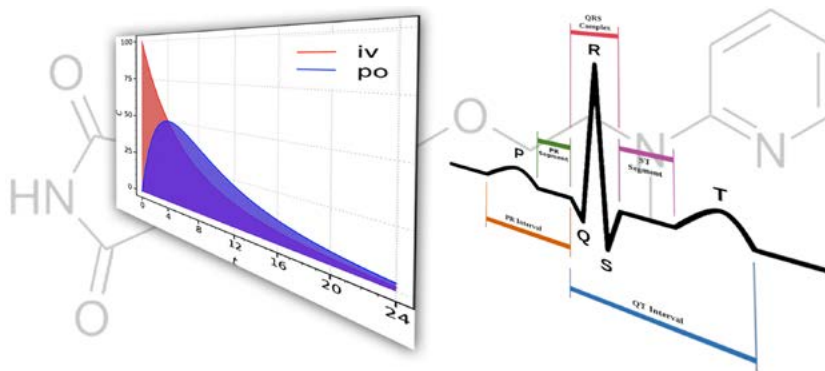
Elaine M. Urbina, MD, MS
Professor, Pediatrics
Director, Preventive Cardiology
Cincinnati Children's Hospital
Medical Center

Visiting Speaker Seminar Mar 28

Eric G. Krause, PhD
Assistant Professor
Pharmacodynamics
University of Florida



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