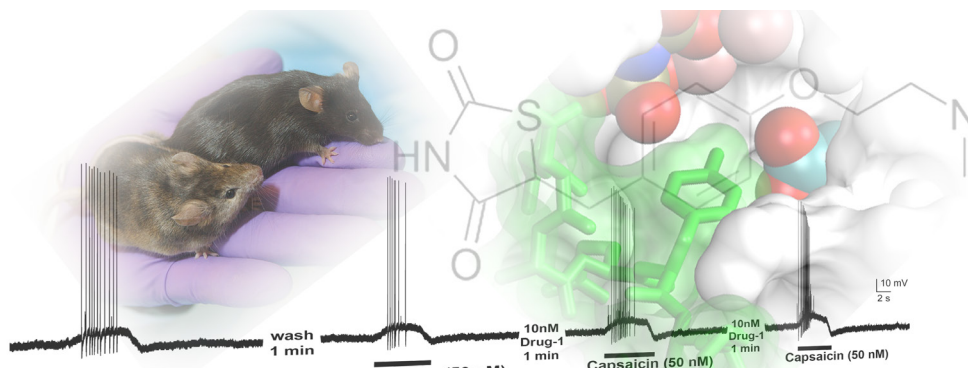


Neuroscience & Pharmacology NEWS

NEWSLETTER OF THE UNIVERSITY OF IOWA DEPARTMENT OF NEUROSCIENCE AND PHARMACOLOGY

VOLUME 8 ISSUE 1

SUMMER 2020



COVID-19 Impacts Department and UI

As it has at universities across the country, the COVID-19 pandemic has severely impacted the research and teaching missions of the Department of Neuroscience and Pharmacology and of all departments on the UI campus. Beginning in mid-March, research activities at the UI were dramatically scaled back, with the only activities continued being those necessary to sustain ongoing, long-term experiments or irreplaceable research commodities. Faculty and staff in general began working from home on those activities that could be done remotely. While the accrued losses in productivity, research progress, and faculty grant and Departmental funds will be significant, faculty, staff and administration have worked diligently to sustain the progress of our research programs and ensure that laboratory investigations are restarted as quickly as the phased ramp-up of research activities begun in May allows. Many Departmental activities other than research, including faculty meetings, seminars and an on-going recruitment of new faculty, have continued unabated with the aid of video conferencing as an alternative to face-to-face meetings.

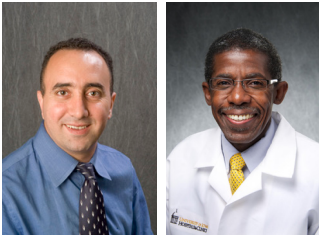
With the university-wide cessation of on-campus classes and move to on-line classes begun on March 30, faculty instructors were challenged with creating and implementing on-line instructional materials, with video conferencing becoming an important vehicle for faculty-student interactions. The existing UI infrastructure for on-line teaching and faculty experience with the same made the transition to on-line classes largely successful.

The University of Iowa Hospitals and Clinics has also been severely affected by COVID-19, with the necessity of treating COVID-19 patients and the potential of patient and staff infection requiring new protective protocols and a temporary cessation of non-essential procedures and office visits. While the financial impact to the UIHC and University will be large, normal clinical activities are currently resuming.

IN THIS ISSUE

COVID-19 Update	Page 1
Congratulations	Pages 2-4
New Departmental Courses	Page 3
Trainee News	Page 5
The Funding Stream	Page 6
Meet Our New Graduate!	Page 7
Research Retreat	Page 8

Rahmouni and Abel team up as co-directors of Obesity Initiative and on new AHA SFRN grant



The UI CCOM has announced the appointment of **Kamal Rahmouni, Ph.D.** (upper) and Dale Abel, M.D., Ph.D. (lower) as Co-Directors of the Obesity Research and Education Initiative (OREI). Rahmouni,

Professor of Neuroscience and Pharmacology and Fraternal Order of Eagles Diabetes Center Research (FOEDRC) Endowed Chair, is internationally recognized for his fundamental research on central neural mechanisms of obesity and its complications. Abel is Chair and DEO of Internal Medicine and Director of the FOEDRC.

The appointment of Rahmouni and Abel builds on the close synergy between the OREI and FOEDRC in the sponsorship of Frontiers, a vibrant weekly research seminar in obesity, diabetes, and metabolism, and the FOEDRC/Obesity Chalk Talks, an informal monthly forum focused on developing applications for research grants.

Rahmouni and Abel succeed the co-founding directors of the OREI: Allyn L Mark, M.D., Professor Emeritus of Internal Medicine, and Charles Brenner, Ph.D., Professor and Chair Biochemistry.

Since the OREI was established with UI Provost funding as a faculty cluster program in 2011, it has been involved in the recruitment of thirteen faculty in five different colleges and nine departments, with new extramural research funding to these new faculty exceeding \$30 million by 2019. Through a partnership with funding from the FOEDRC, the Carver College of Medicine has assumed the sponsorship of the OREI as an intercollegiate, interdepartmental research and education initiative focused on obesity, diabetes, and metabolic disease.

Rahmouni will also team with Abel on a new \$3.8M Strategically Focused Research Network (SFRN) grant from the American Heart Association (AHA). Headed by Abel, the SFRN is a network of three projects in partnership with other UI departments and the Massachusetts General Hospital (MGH) that will investigate mechanisms that increase the risk of cardiovascular disease in people with

type 2 diabetes. Specifically, the team will examine the relationship between novel secreted molecules from liver, adipose tissue, and skeletal muscle that may directly or indirectly lead to damage of the heart and blood vessels in individuals with diabetes.

Abel will serve as the overall Center Director and PI on this project joined by Training Director Rahmouni and Basic Project PI Ethan Anderson, Ph.D. of the College of Pharmacy. The clinical and population projects will be led by colleagues from MGH: Clinical Project PI Saumya Das, M.D., Ph.D. and Population Project PI Ravi Shah, M.D.

Our congratulations to Kamal on his distinguished Co-Director and Training Director appointments!

Story adapted from the original CCOM press releases at <https://medicine.uiowa.edu/content/rahmouni-and-abel-named-co-directors-obesity-research-and-education-initiative> and <https://medicine.uiowa.edu/neuroscience-and-pharmacology/content/research-team-led-dr-dale-abel-receives-38-million-american-heart-association>.

Potthoff named UI Health Care Distinguished Scholar



Matthew Potthoff, Ph.D., Associate Professor in Neuroscience and Pharmacology, was one of six researchers named to the University of Iowa Health Care Distinguished Scholars Program. The program aims to support internationally recognized scientists who are leaders in their fields of research.

Each scholar will receive a \$200,000 per year grant to support the expansion of their research for a period of three years. Scholars named to the program will have the option of submitting renewal applications at the end of their term. The DSP will name six new scholars next year and the year after, supporting a total of 18 scholars at a time.

Dr. Potthoff studies energy homeostasis and metabolism, particularly in the liver. In particular, Potthoff focuses on the many roles of the liver hormone FGF21 in controlling multiple functions in a variety of tissues such as the central nervous system that may contribute to obesity and other metabolic diseases.

Our congratulations to Matt on this impressive award!

Neuroscience & Pharmacology CONGRATULATIONS

Abel, Heistad, Faraci and Sluka named CCOM Impact Scholars



Ted Abel, Ph.D., Professor and Chair of the Department of Neuroscience and Pharmacology, **Donald Heistad, M.D.** and **Frank Faraci, Ph.D.**, Professors of Internal Medicine and Neuroscience and Pharmacology, and **Kathleen A. Sluka, P.T., Ph.D., F.A.P.T.A.**, Professor of Physical Therapy and Rehabilitation Science, were among a group

of forty-six faculty included in the UI Roy J. and Lucille A. Carver College of Medicine's inaugural group of *Impact Scholars* – researchers deemed to have made a major scientific impact over the course of their careers. *Impact Scholars* are selected based on the Hirsch index, which represents the number of research papers a faculty member has published, and the papers' impact as gauged by how many times they have been cited by other scientists and scholars in subsequent research articles. A researcher with a Hirsch index of 50 has published at least 50 articles that each have been cited at least 50 times!

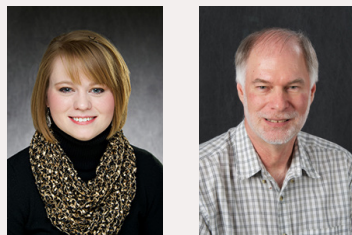
We congratulate Drs. Abel, Heistad, Faraci and Sluka on achieving this recognition of their tremendous scholarly impact! For a listing of all the inaugural CCOM *Impact Scholars* see <https://medicine.uiowa.edu/content/carver-college-medicine-recognizes-faculty-impact-scholars>.

Department delivers new and revamped undergraduate pharmacology courses

To augment the undergraduate educational contribution of Neuroscience and Pharmacology, faculty members **Barry Kasson, Ph.D.**, Associate Professor and Associate Chair for Education, and **Katelin Dannen, Ph.D.**, Associate, have developed two new undergraduate pharmacology courses and significantly revamped one existing course. The new courses, *Pharmacology I: A Drug's Fantastic Journey* and *Pharmacology II: Mechanisms of Drug Action*, are targeted to junior and senior science majors from the Colleges of Liberal Arts and Sciences, Engineering and Medicine, including Neuroscience, Biochemistry and Pre-Med majors. The first course introduces basic pharmacology principles by following the journey of a drug from its site of administration to its site of elimination, and covers common mechanisms by which drugs affect the body, exemplifying mechanisms of drug action on two primary body systems, the nervous and cardiovascular. The second course expands upon basic pharmacological concepts and further explores how they define drug action on the body, covering current treatments of various diseases including neuropsychiatric and immune disorders, cancer, diabetes, and microbial infections. Both courses feature highly interactive application sessions where students apply course material via collaborative work on problem sets/activities.

Our long-standing and popular undergraduate pharmacology course for non-science majors, *Drugs: Their Nature, Action, and Use*, was renamed as *Drug Use and Abuse* and significantly revamped such that it can now be taken for UI General Education credit. This course continues to provide an outstanding opportunity for our advanced graduate students and postdoctoral scholars to obtain valuable teaching experience to supplement to their research training.

We thank Katelin and Barry for their tremendous efforts towards enhancing our teaching presence on the UI campus!



CONGRATULATIONS

Dawn Quelle receives Oberley Seed Grant Award



Dawn Quelle, Ph.D., Professor of Neuroscience and Pharmacology, received an Oberley seed grant award from the UI Holden Comprehensive Cancer Center to examine “Serotonin Regulation by RABL6A in Neuroendocrine Tumors.” Elevated serotonin is the major factor driving carcinoid syndrome (CS) in patients with metastatic small bowel neuroendocrine tumors (sbNETs). Patients with CS suffer from extensive diarrhea, cutaneous flushing and sweating, and less frequently heart failure. Currently, there are no molecular markers to predict which sbNET patients will develop CS or respond best to therapy with telotristat etiprate (TE), a drug that inhibits the essential enzyme (TPH1) in serotonin synthesis.

The Quelle lab have identified a new biomarker of CS whose expression in tumors may predict response to TE therapy. They discovered that RABL6A, an oncogenic protein highly expressed in NETs, increases serotonin levels in NET cells by upregulating TPH1. Parallel studies in the brains of RABL6A-deficient mice revealed RABL6A is essential for both TPH and serotonin expression *in vivo*. Oberley grant funds will support analyses of the RABL6A-serotonin pathway in NET relevant systems, including enterochromaffin cells in the small bowel (which produce >90% of the body’s serotonin) and mouse models of NET disease.

Our congratulations to Dawn on her new grant award!

Heistad to receive CCOM Distinguished Mentor Award



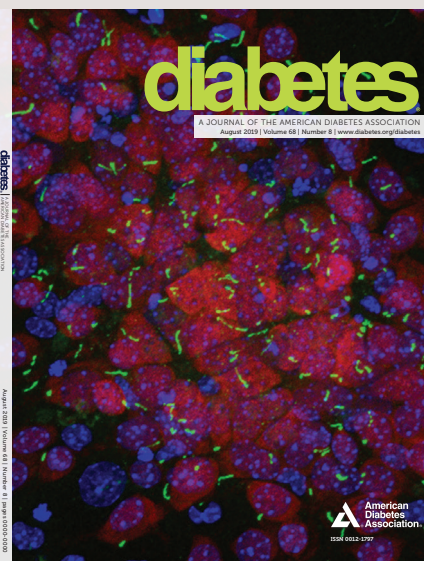
Our heartiest congratulations go out to **Donald D. Heistad, M.D.**, Professor of Internal Medicine and Neuroscience and Pharmacology and the Pomerantz Family Chair in Cardiology, who is slated to be honored with the *2020 Daryl and Nancy Granner Distinguished Mentor Award*. This award is given to distinguished faculty who have served a significant portion of their career at Iowa and whose mentees have gone on to distinguished careers of their own.

Awardees are also known for their collegiality, dedication to their profession, and their advancement of the Carver College of Medicine and the University of Iowa. Dr. Heistad is certainly worthy of this award with his over forty years of exemplary service at the UI and an outstanding record of mentoring trainees, faculty and staff at all levels!

Heistad’s nomination for the award was supported in glowing terms by his nominator, **E. Dale Abel, M.D., Ph.D.**, Chair and DEO of the Department of Internal Medicine, and by numerous of Heistad’s mentees, who have themselves gone on to distinguished careers with some carrying on his tradition here at Iowa. Consistently cited was how Heistad’s devoted mentoring became a model for them in their own mentoring of trainees.

Dr. Heistad’s award will be presented at a ceremony in Fall 2021, with the *Distinguished Mentor’s Lecture* to be delivered by David J. Skorton, M.D., President and CEO of the Association of American Medical Colleges and former colleague of Heistad’s in the Division of Cardiovascular Medicine.

A fuller testament to Dr. Heistad’s career and mentoring history, including the attestations of his mentees, can be found at <https://internalmedicineiowa.org/2020/02/06/heistad-earns-distinguished-mentor-award/>.



The paper “The BBSome in POMC and AgRP Neurons Is Necessary for Body Weight Regulation and Sorting of Metabolic Receptors” by **Deng-Fu Guo, Zhihong Lin**, Yuanming Wu, Charles Searby, Daniel R. Thedens, George B. Richerson, **Yuriy M. Usachev, Justin L. Grobe**, Val C. Sheffield and **Kamal Rahmouni** was featured on the August 2019 cover of *Diabetes*. Our congratulations to everyone involved!

Neuroscience and Pharmacology **TRAINEE NEWS**

Shi Fang and Ashok Kumar Datusalia are AHA fellowship awardees



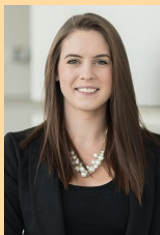
Shi Fang, Pharmacology graduate student in the **Sigmund lab**, was awarded a Predoctoral Fellowship from the American Heart Association for her project titled “Vascular Smooth Muscle RhoBTB1 in Hypertension.” Shi is completing the research component of her graduate studies at the Medical College of Wisconsin where the Sigmund lab has relocated, but remains on track to receive her Ph.D. from the UI Pharmacology Graduate Program.



Ashok Kumar Datusalia, Ph.D., Postdoctoral Research Scholar in the **Rahmouni lab**, was awarded an American Heart Association Postdoctoral Fellowship for his project titled “Neurogenic Mechanisms of Obesity-Induced Hypertension.” The aim of Ashok’s project is to uncover the fundamental biological systems that drive hypertension in obesity.

Join us in congratulating both Shi and Ashok on their prestigious AHA fellowship awards!

Jordan Kohlmeyer receives Iowa Sarcoma MOG grant



Jordan Kohlmeyer, Molecular Medicine graduate student in the **Dawn Quelle lab**, was recently awarded a \$20,000 pilot grant from the Iowa Sarcoma Multidisciplinary Oncology Group for a study entitled “Developing Novel Combination Therapy Targeting the RABL6A-RB1 Pathway in Malignant Peripheral Nerve Sheath Tumors (MPNSTs).” Current therapy options for MPNSTs are limited and do not improve patient survival. Jordan and colleagues recently discovered that the RABL6A oncoprotein drives MPNST pathogenesis through its control of many druggable cancer pathways, including inhibition of the tumor suppressive

retinoblastoma (RB1) pathway. The current study aims to develop novel combination therapies that pair FDA-approved cyclin-dependent kinase (CDK) inhibitors with drugs targeting other RABL6A-regulated pathways. The goal is to improve treatment options and survival for patients with MPNSTs and other sarcomas.

Jordan was also a winner in the basic science poster contest at the September 2019 Children’s Tumor Foundation Global NF1 conference in San Francisco. Out of 500 attendees, ten posters were selected to give a one-minute poster advertisement on the main stage and their posters judged. Jordan was one of three winners selected to give an oral presentation of their work on the last day. She did an amazing job representing Neuroscience and Pharmacology, the Molecular Medicine Program and the UI!

Congratulations to Jordan on her grant and poster awards!

Mackenzie Spicer Dares to Discover!



Mackenzie Spicer, Molecular Medicine graduate student in the **Fisher lab**, is one of 52 outstanding scholars, researchers, and creators featured throughout downtown Iowa City in the **UI 2020 Dare to Discover** banner campaign. The campaign recognizes students’ important contributions to research, scholarship, discovery and creativity. Many of these contributions have the potential to impact the lives of everyday Iowans.

“These students represent the next generation of big thinkers, explorers, innovators, and makers,” said John Keller, Associate Provost for Graduate and Professional Education and Dean of the Graduate College. “Students conduct remarkable research and scholarship at the University of Iowa. We are proud to celebrate their achievements through this campaign, which seeks to increase the visibility of scientists and scholars in our downtown community.”

Mackenzie’s biography and details about each of the 52 featured students can be found at <https://dare.research.uiowa.edu/>.

Congratulations Mackenzie!

THE FUNDING STREAM

Recent Neuroscience and Pharmacology grant awards

Through the redoubled efforts of our faculty, research scientists, trainees and office administrative staff, Neuroscience and Pharmacology significantly increased the number of grant applications submitted in the past year, with the total number of new and competing applications submitted in FY2020 (as per the annual CCOM tally) exceeding that of FY2019 by an impressive 64%! This has required our faculty to broaden the purview of their research to include new avenues of investigation, in areas deemed critical for targeted funding by the NIH. Our faculty have been especially successful in procuring NIH funding supplements that allow them to pursue research in targeted areas (e.g. Alzheimer's disease) in the context of their existing grants on other subjects. It is envisioned that this significant supplemental funding for new research directions not only will lead to new discoveries, but will yield preliminary data to support future grant submissions in these highly fundable target areas.

Our faculty, staff and trainees continue to be aggressive in applying for pilot grants and fellowship awards from intramural sources, including Iowa's Pappajohn Biomedical Institute, Fraternal Order of Eagles Diabetes Research Center, Neuroscience Institute, Holden Comprehensive Cancer Center, and Graduate College.

The large number of application submissions in the previous year was made possible by a tremendous effort of our office grant staff, with everyone's contribution made yet more challenging by the abrupt transition to on-line work mandated by the COVID-19 pandemic. We applaud the personnel of Neuroscience and Pharmacology for their collective efforts to enhance our research funding, and fueling a renewed growth of our research portfolio.

Trainee fellowship awards

UI Graduate College Predoctoral Fellowship Awards

Mackenzie Spicer (Graduate Student, Fisher Lab)

Graduate College Summer 2020 Fellowship

Grant Walters (Graduate Student, Usachev Lab)

Graduate College Summer 2020 Fellowship

Faculty and staff grant awards

Intramural Grant Awards to Neuroscience and Pharmacology Faculty

Dawn Quelle (Professor)

UI Sarcoma MOG – Developing Novel Combination Therapy Targeting the RABL6A-RB1 Pathway in MPNSTs, \$20,000

HCCC Oberley Seed Grant Award – Serotonin Regulation by RABL6A in Neuroendocrine Tumors, \$12,637

Catherine Marcinkiewicz (Assistant Professor)

CCOM Innovation Research Award, \$10,000

Matt Potthoff (Associate Professor)

Pappajohn Biomedical Institute Resource Award, \$5,000

Extramural Grant Awards to Neuroscience and Pharmacology Faculty and Staff

Ted Abel (Professor)

R01 Administrative Supplement – Mechanistic Studies on the Impact of Sleep Deprivation on Gene Regulation, \$385,990

Rory Fisher (Professor)

R01 Administrative Supplement – RGS6 in Mesolimbic Circuits as a Therapeutic Target for Alcohol Use Disorders, \$386,250

Matt Potthoff (Associate Professor)

R01 – Endocrine Regulation of Alcohol Intake, \$450,815

Catherine Marcinkiewicz (Assistant Professor)

R00 Supplement – The Role of Serotonin Signaling in the Nucleus Accumbens in Excessive Alcohol Drinking, \$280,799

Sarah Ferri (Assistant Research Scientist)

K01 – Mechanisms of Male-specific Amygdala-dependent Deficits in Approach and Avoidance Behaviors, \$139,055

NEUROSCIENCE & PHARMACOLOGY

MEET OUR NEW GRADUATE!

Meet Our New Grad!

Since our last reporting, *one student* performing their thesis studies in Neuroscience and Pharmacology has successfully completed their *PhD degree!*

Join us in congratulating:



Sarah Sapouckey, PhD Dec 2019 - Grobe lab*
"The Renin-Angiotensin System in Metabolism and Development" (on-line announcement)

**Molecular Medicine Graduate Program student*

GIVING OPPORTUNITIES

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

[GIVING OPPORTUNITIES](#)

CONTACT US

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

Kathleen Beardsworth
Levitt Center for University
Advancement
One West Park Road
Iowa City, IA 52242
(800) 648-6973 | (319) 335-3305
kathy.beardsworth@uiowa.org

OUR APPRECIATION

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

Bhatnagar and Spratt Scholars Awards

Established by generous donations from alumni in 2016 and 2017, respectively, the *Ranbir K. Bhatnagar Scholar Awards* and *James L. Spratt Scholar Awards* supported the travel of seventeen Neuroscience and Pharmacology trainees to scientific meetings in FY20, meetings at which they presented their work and made invaluable contacts. We thank the donors for their generous gifts, which honor the memory of **Dr. Ranbir K. Bhatnagar** and **Dr. James L. Spratt**.

Ranbir K. Bhatnagar Scholars

Jae Kyoong Kim* (Abel)
Ilhan Aklan (Atasoy)
Nilufer Sayar Atasoy* (Atasoy)
Guorui (Gary) Deng* (Cui)
Yue (Alvin) Deng (Cui)
Mackenzie Spicer (Fisher)
Chandra Maharjan (Quelle)
Deng Guo* (Rahmouni)
Mengya Wang (Russo)
Chian Ju Jong* (Strack)

Priyanka Sandal* (Strack)

Jake Rysted* (Usachev)

Alex Keyes (Usachev)

Grant Walters (Usachev)

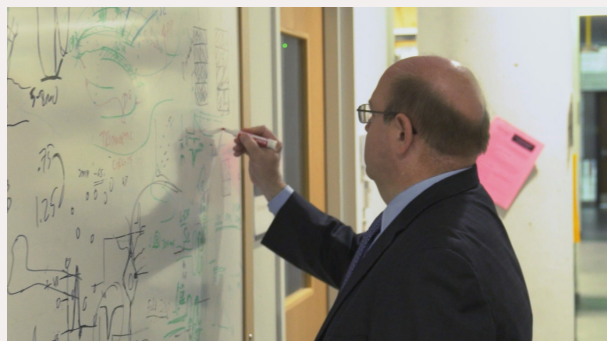
James L. Spratt Scholars

Jae Kyoong Kim* (Abel)
Sharon Jensen-Cody (Pothoff)
Priyanka Sandal* (Strack)

() Advisor

*Postdoctoral Scholar/Research Scientist

Abel Featured in **BTN LIVEBIG** Vignette



In one of a series of vignettes produced by the *Big Ten Network* to highlight the impact that Big Ten universities have in fields ranging from healthcare to environmental issues to driving innovation, the autism research of **Dr. Ted Abel, Ph.D.**, Professor and Chair of the Department of Neuroscience and Pharmacology and Director of the Iowa Neuroscience Institute, and his laboratory was recently featured. Dr. Abel's inspiring video vignette and an accompanying narrative reveal his unique perspective on autism spectrum disorders and the motivation for his research. See the story and video at <https://btn.com/2020/04/02/iowa-autism-research/>.

Department of Neuroscience and
Pharmacology
2-471 Bowen Science Building
51 Newton Road
Iowa City, IA 52242-1109

UPCOMING EVENT

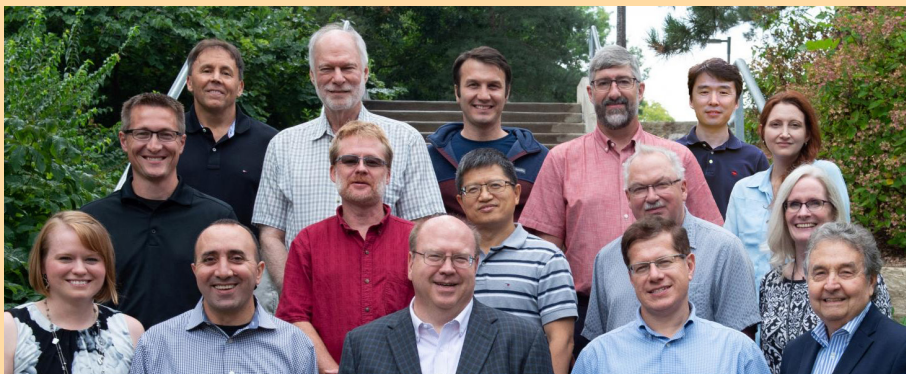
Pharmacological and Pharmaceutical Sciences Research Retreat **Aug 21**

Featured speakers:

Lydia Finley, Ph.D.
Assistant Professor
Cell Biology Program
Sloan Kettering Institute
New York, NY

Anthony E. Oro, M.D., Ph.D.
Eugene and Gloria Bauer
Professor of Dermatology
Stanford University
Stanford, CA

Neuroscience and Pharmacology Faculty 2020



From left, Row 1: Katelin Dannen, Kamal Rahmouni, Ted Abel, Yuriy Usachev, Alan (Kim) Johnson;
Row 2: Matthew Potthoff, Stefan Strack, Songhai Chen, John Koland, Dawn Quelle; Row 3:
Rory Fisher, Barry Kasson, Denis Atasoy, Frederick Quelle, Huxing Cui, Catherine Marcinkiewicz

Contact us:

Department of Neuroscience & Pharmacology
University of Iowa
Roy J. and Lucille A.
Carver College of Medicine
51 Newton Road, 2-471 BSB
Iowa City, IA 52242-1109
Phone: (319) 335-7965
FAX: (319) 335-8930
E-mail: pharmacology@uiowa.edu

Please direct comments and inquiries to:
John Koland, Editor
Neuroscience & Pharmacology News
(319) 335-6508
john-koland@uiowa.edu

To receive this or future editions of
Neuroscience & Pharmacology News
electronically or to be removed from the
mailing list, please express
your desire to pharmacology@uiowa.edu

Website: <https://medicine.uiowa.edu/neuroscience-and-pharmacology/>