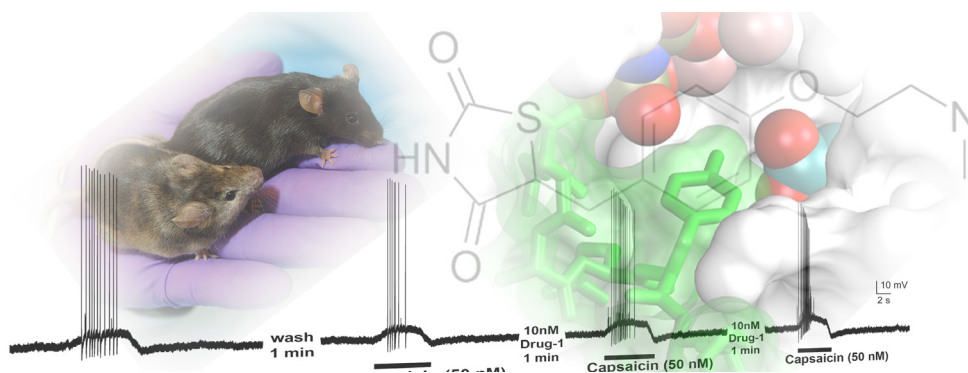


Iowa Pharmacology NEWS

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

VOLUME 7 ISSUE 1

SUMMER 2019



Neuroscientist/Aviator Minnetta Gardinier



Minnetta and co-pilot Jeneanne Visser, third place finishers in the June 2017 Frederick, MD to Santa Fe, NM Air Race Classic.

While Associate Professor of Pharmacology **Minnetta Gardinier** might appear well grounded, she in fact has spent significant time high above the earth, piloting her beloved Cessna Cardinal airplane to destinations far across the country! She is indeed a competitive flier, having participated in several cross-country airplane races. She recently participated in the all-women *43rd Air Race Classic* held June 18-21, which covered a circuitous route from Jackson, Tennessee to Wellard, Ontario, over 2,500 miles in distance! Air racing being a somewhat uncommon hobby for a scientist/professor, Minnetta's aviation exploits were recently featured in a *Daily Iowan* story:

<https://dailyiowan.com/2019/04/22/neuroscientist-professor-pilot-racer-minnetta-gardiniers-adventures-in-the-great-wide-open/>.

The *DI* story relates how Minnetta picked up flying somewhat late in life, but after her first introductory flight was fully taken with the avocation, and soon purchased an airplane that she co-owns with another UI faculty member. Minnetta also describes why she finds flying so enjoyable – because of the independence it gives



Route of the June 2017 Air Race Classic.

her, being able to fly wherever she wants, whenever she wants. She recounts the dearth of female pilots when she was growing up, and how while the number is gradually increasing, women today still make up less than five percent of commercial pilots.

(See *Neuroscientist/Aviator* Page 4)

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Iowa Pharmacology OUR CONGRATULATIONS

Pharmacology says farewell to two faculty colleagues

It is certainly with mixed emotions that we announce that two well regarded Pharmacology faculty are picking up roots this summer and heading to Milwaukee, Wisconsin. Associate Professors **Anne Kwitek** and **Justin Grobe** will rejoin former Pharmacology DEO **Curt Sigmund** as faculty of the Department of Physiology of the Medical College of Wisconsin (MCW), wherein Dr. Sigmund recently assumed the role of Chair. While the departures of Anne and Justin represent a considerable loss for the Department and University in terms of their contributions to our research, teaching and service missions, we will miss as much their engaging personalities and the remarkable collegiality they showed in every interaction! As we say farewell to Anne and Justin, we highlight just a few of their many accomplishments at Iowa.



Anne Kwitek's move to MCW is in more than one way a homecoming! Anne is a Wisconsin native who following her Ph.D. training in the UI Genetics Program in the laboratory of Val Sheffield, moved back to Wisconsin in 1996 to begin postdoctoral studies under the tutelage of Dr. Howard Jacob at MCW, staying on as a Research Scientist until being appointed there as an Assistant Professor in 1999 and Associate Professor in 2004. She returned to UI in 2007 as an Associate Professor in Internal Medicine, before transitioning to Pharmacology in 2010.

Anne has throughout her career been broadly active in research, teaching and service. Her research into the genetic basis of hypertension, diabetes and metabolic syndrome is internationally recognized and is documented in nearly one hundred published works. Her laboratory has been funded by diverse agencies including the NIH, AHA, VA and USDA.

Anne has made important contributions towards Pharmacology teaching, including significantly her direction and restructuring of our *Pharmacogenetics and Pharmacogenomics* graduate course. At the Collegiate level, she was a genetics small group facilitator in the medical curriculum. She has also been an active member of the Interdisciplinary Graduate Program in Genetics, for several years serving as lecturer in their *Genetic Analysis of Biological Systems* course. She has also mentored numerous postdoctoral, graduate and undergraduate students in her laboratory.

Anne has made valued administrative contributions here, having served in the UI Faculty Senate, on the CCOM Executive Committee, and since 2011 as the Associate Director of the Iowa Institute of Human Genetics. At the national level, she has served on a number of grant review panels, editorial boards, and is an active AHA member.

Anne has indeed been an exemplary member of our faculty, and we wish her continued success in Wisconsin!



Upon completing his Ph.D. training under Michael Katovich at the University of Florida, Gainesville in 2006, Justin Grobe did two postdoctoral stints, the first in the laboratory of Mohan Raizada at Gainesville and the second with Curt Sigmund, initially in the UI Department of Internal Medicine. He was appointed in Pharmacology first as an Associate in 2010, as an Assistant Professor in 2012, and was promoted to Associate Professor in 2017.

Justin established a vigorous research program at Iowa. Generally focused on the neural control of cardiovascular and metabolic function, his research has the ultimate goal of understanding and developing new approaches for the treatment of obesity, hypertension, and the pregnancy-associated cardiovascular disorder, preeclampsia. His work has resulted in more than 75 publications, the significance of which has been recognized by his multiple awards, including the *2017 Arthur C. Guyton Award for Excellence in Integrative Physiology* from the American Physiological Society and the *2018 Established Investigator Award* from the AHA. Justin's work has been consistently funded by the NIH and AHA.

Justin has done valuable teaching in a number of Pharmacology courses, most significantly in our *Principles of Pharmacology: Neurotransmitters* and *Basic Biostatistics & Experimental Design* graduate courses. The latter course, which Justin has for several years directed, became a key component in the curricula of multiple graduate programs. Like Anne, Justin has been highly engaged in the mentoring of students of all levels.

Justin has made important contributions in service at the Departmental, Collegiate, and University levels. Nationally, he is an active member of the AHA and the American Physiological Society, serving on their grant review panels and journal editorial boards.

Justin's many contributions to Iowa's mission have been highly valued. We wish him all the best in his new home!

Iowa Pharmacology OUR CONGRATULATIONS

Gardinier retires in July

After 27 years as a college professor and 21 years at Iowa, **Minnetta Gardinier, Ph.D.**, Associate Professor of Pharmacology, retired on July 1. Minnetta had a distinguished career as a neuroscientist, teacher, and administrator.



Graduating in 1988 with a Ph.D. in Biochemistry and Molecular Biology from Louisiana State University Medical Center, New Orleans, Minnetta did four years of postdoctoral study at Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland before being appointed as an

Assistant Professor at Northwestern University Medical School in 1992. She moved to Iowa as an Associate Professor in 1998.

Minnetta's research focused on oligodendrocyte biology and the characterization of myelin membrane proteins. She was the first to clone and sequence the cDNA of myelin/oligodendrocyte glycoprotein (MOG), a unique constituent of the myelin membrane involved in demyelinating disorders including multiple sclerosis. Her research was funded for many years by the NIH and the National Multiple Sclerosis Society.

Minnetta's career eventually transitioned to that of an educator and administrator. She was for six years Director of the Molecular and Cellular Biology (MCB) Graduate Program and for five years PI of the NIH-funded Training Grant in MCB. She subsequently served nine years in the UI Graduate College as Interim Director of the Office of Graduate Ethnic Inclusion, Associate Dean for Recruitment and Professional Development, and Director of the Office of Postdoctoral Scholars. Minnetta developed and for many years directed the Graduate College course *Principles of Scholarly Integrity*, which in its current form is mandatory for all Biomedical Sciences Graduate Program students and affiliated postdoctoral scholars. Minnetta taught in numerous Pharmacology courses, and was a long-time director of our *Pharmacology for Pharmacy Students* courses. In recognition of her teaching, she received the CCOM 2015 Excellence in Medical Education Award.

Join us in congratulating Minnetta on her outstanding career and wishing her health and happiness in retirement! Read about Minnetta the pilot in our cover story!

Stefan Strack receives J.P. Long Teaching Award



At the 2019 CCOM Faculty Awards Banquet in March, **Stefan Strack, Ph.D.**, John Paul Long Professor of Pharmacology (third from right), received the *J.P. Long Teaching Award in the Basic Sciences*. The award honors **John P. Long, Ph.D.**, a former faculty member and chair of the Department of Pharmacology. The award is given to basic science faculty who demonstrate unusually significant and meritorious achievement in teaching throughout their career, and are accomplished scientists and good citizens.

The strengths of Stefan's nomination were the breadth and quality of his teaching efforts, with his enthusiasm and passion for teaching clearly evident. Stefan has excelled not only in didactic teaching, but in course direction, course development, training program administration, and especially one-on-one mentoring in the laboratory. Quite compelling among his nomination letters were those from former students who, embarking on their own faculty careers, hoped to emulate Stefan's teaching and mentoring.

We congratulate Stefan on his receiving this highly distinguished teaching award!



PHARMACOLOGY SNAPSHOT: Research Assistant **Maddi Lensing** analyzes patterns of gene expression in a mouse tumor model.

Iowa Pharmacology OUR CONGRATULATIONS

Kate Bolton receives Improving Our Workplace Award



Congratulations to Pharmacology office staff member **Kate Bolton** for receiving an FY19 *University of Iowa Improving Our Workplace Award* (IOWA) this May.

Because of her outstanding organizational and communication skills, Kate was asked to coordinate the recruitment efforts of three separate graduate programs. Using her creativity, she developed an intake form for the graduate student candidates, and did away with an inefficient and unproductive process that was used in the past. Due to Kate's work, the Department of Pharmacology now offers an efficient and effective experience for highly sought after graduate student prospects. Thank you, Kate, for your leadership and going above and beyond in supporting outreach and recruitment of University of Iowa Biomedical Science Graduate Program students!

Ted Abel receives Autism Research Initiative grant award



Ted Abel, Ph.D., Director of the Iowa Neuroscience Institute and Interim Chair and DEO of the Department of Pharmacology, has received a Simons Foundation Autism Research Initiative (SFARI) award to continue his research into autism spectrum disorders (ASDs). The

project, "Translating Drug Discovery in Zebrafish and Mouse Models of ASD Risk Genes" is led by Ellen Hoffman, an Assistant Professor at Yale University, and will utilize the expertise of the Hoffman lab in zebrafish pharmaco-behavioral profiling and the Abel lab in mouse behavioral phenotyping. In addition, George Richerson, the Chair of Neurology at the University of Iowa, will lead one of the main components of this project by studying the relationship between seizures and behavioral phenotypes in mouse models relevant to ASDs, and the potential pharmacological rescue of these phenotypes. This proposal will translate findings from high-throughput zebrafish behavior-based screens to mouse behavioral assays, with the aim of elucidating the cellular and circuit-level effects of drug candidates in both systems. The overall aim of this

proposal is to bridge a critical gap in translational drug discovery, leading to the identification of novel pharmacological targets for further evaluation in ASDs.

To read more about Dr. Abel's quest to study autism spectrum disorders and his very personal motivations for doing so, see: <https://www.nytimes.com/paidpost/university-of-iowa/iowa-neuroscience-institute.html>.

Stefan Strack receives grant from Jordan's Guardian Angels



Stefan Strack, Ph.D., John Paul Long Professor of Pharmacology, was awarded a three-year, \$1.7 M grant from Jordan's Guardians Angels, a private foundation that supports research on Jordan's Syndrome. Jordan's Syndrome is a neurodevelopmental disorder associated with intellectual

disability and autism that is caused by *de novo*, autosomal-dominant missense mutations in a protein phosphatase 2A regulatory subunit. The goals of this project are to generate cell and mouse models of the disorder and to characterize them to reveal pathogenic mechanisms and potential therapeutic interventions. Stefan received a first Jordan's Guardian Angels grant in 2017, and is a member of the foundation's eleven-member scientific team.

Neuroscientist/Aviator (Continued from Cover)



Minnetta's Cessna Cardinal.

Participation in all-women air races has allowed Minnetta to meet some of the first women airline pilots and the next generation of women pilots.

Minnetta's joy in flying comes out easily in conversation, such as when describing her recent flight across the expansive Grand Canyon or showing you the route on her tablet's navigational app. As she now moves into retirement (see story Page 3), we can expect that Minnetta will be logging some very serious air miles! We look forward to hearing about her continuing adventures in the sky!

Iowa Pharmacology **TRAINEE NEWS**

Deng receives Physiological 'Omics Research Excellence Award

Guorui Deng, Ph.D., a postdoctoral fellow in the laboratory of **Justin Grobe**, was selected to receive a *2019 Trainee Research Excellence Award* sponsored by Data Sciences International (DSI) from the American Physiological Society Physiological 'Omics research group. Guorui's research into second-messenger signaling and modulation by regulator of G protein signaling (RGS) proteins utilizes a wide array of cutting-edge sequencing and 'omics type approaches. Congratulations to Guorui!



Guorui Deng (far right) receives his award at Experimental Biology 2019 in Orlando, FL.

Zheng receives undergraduate abstract award



Shao Yang Zhang, an undergraduate researcher in the **Grobe** lab, received an *APS 2019 Barbara A. and John M. Horwitz Undergraduate Abstract Award* at *EB 2019*, where he presented his abstract entitled "Increased Vasopressin Secretion During Preeclampsia Despite Normal Plasma Osmolality." Congratulations to Shao on his award as well as his recent graduation!



Jordan Kohlmeyer Featured on Dare to Discover Banner

Jordan Kohlmeyer, Molecular Medicine Graduate Program student in the laboratory of **Dawn Quelle**, is one of 42 outstanding University of Iowa undergraduate and graduate students featured in the *2019 Dare to Discover* banner campaign. The campaign recognizes the important contributions of students to research, scholarship, and discovery at the University of Iowa. Banners were unveiled January 2019 in various downtown Iowa City locations, with Jordan's near the intersection of Washington and Gilbert.

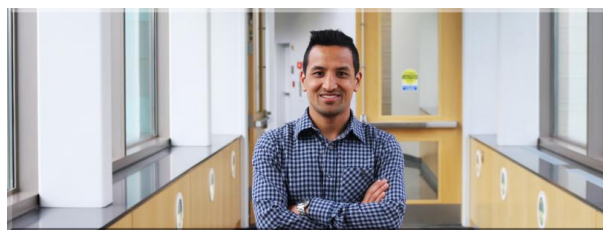
To read about Jordan's banner and find a story highlighting her research, see <https://dare.research.uiowa.edu/kohlmeyer-jordan/>.

Karen Clark wins American Physiological Society award



Karen Clark, a Genetics Program graduate student working in the laboratory of **Anne Kwitek**, was saluted this April at *Experimental Biology 2019* in Orlando, FL, as a *2019 APS-Cardiovascular Section Research Recognition Awardee*. Karen's abstract "CRISPR-Cas9 Gene Editing Yields a Novel Rat Model of Cardiometabolic Disease," coauthored by Karen Clark, Valerie Wagner, Jacob Malek, Alyssa Arroyo, Nicole Pearson, Justin Grobe, and Anne Kwitek, was recognized as one of the most highly rated. Congratulations to Karen on her fine work!

Chandra Maharjan in the spotlight



An interview with Pharmacology graduate student **Chandra Maharjan** (**Dawn Quelle** laboratory) appeared January 10 in the *Student Spotlight* segment of the *UIHC Noon News*. In the segment, Chandra responds to queries about his background, training, research, and experiences as a graduate student at Iowa. He also gives some thoughtful advice for new graduate students! Check out Chandra's interview at <https://medicine.uiowa.edu/content/meet-chandra-maharjan>.

THE FUNDING STREAM

Recent Pharmacology grant awards

Since our last newsletter, Pharmacology faculty and trainees have received an impressive number of new grant and fellowship awards. Once again they have cast a wide net, soliciting support from private foundations, as well as from traditional funding agencies and internal UI pilot grant programs. Funding from private agencies, such as the Children's Tumor Foundation and Jordan's Guardian Angels, and UI pilot programs is allowing Pharmacology researchers to develop exciting new avenues of research. Congratulations to our students and faculty on their new grants awards!

Trainee fellowship awards

Iowa Center for Research by Undergraduates (ICRU) Summer Research Fellowships

Blake Holmes (Undergraduate Student, Chen lab)

Michael Lehman (Undergraduate Student, Potthoff/Markan lab)

Morgan Kemerling (Undergraduate Student, Potthoff/Markan lab)

UI Graduate College Predoctoral Fellowship Awards

Grant Walters (Neuroscience Graduate Student, Usachev lab)

Post-comprehensive Research Award for Fall 2019 Semester

Jianing Song (Pharmacology Graduate Student, Strack lab)

Ballard & Seashore Dissertation Fellowship for Fall 2019 Semester

Extramural Predoctoral Fellowship Award

Jordon Kohlmeyer (Molecular Medicine Graduate Student, D. Quelle lab)

Children's Tumor Foundation – The RABL6A-RB1 Pathway in MPNST Pathogenesis and Therapy

Faculty grant awards

Intramural Grant Awards to Pharmacology Faculty

Songhai Chen (Associate Professor)

HCCC High Throughput Screening Facility Pilot Grant – Identification of Small Molecule Inhibitors of Cancer Stem Cells, \$20,000

Catherine Marcinkiewicz (Assistant Professor)

PBI Microfinance Pilot Grant – Generation of Tph2-p2A-flp Mice for Intersectional Targeting of Serotonin Neurons, \$5,000

Yuriy Usachev (Professor)

CCOM Research Investment Award for 2 R01 Funding, \$40,000

Extramural Grant Awards to Pharmacology Faculty

Matthew Potthoff (Associate Professor)

VA Merit Award – Central Mechanisms Regulating Macronutrient Preference, \$1,397,437

Deniz Atasoy (Assistant Professor)

American Heart Association Transformational Project Award – Synaptic Mechanisms of Obesity Induce Hypertension, \$300,000

Stefan Strack (Professor)

Jordan's Guardian Angels – Mitochondrial AKAP1 Signaling in Chronic Stress-induced Prefrontal Structural and Functional Plasticity, \$1,732,115

Catherine Marcinkiewicz (Assistant Professor)

NIH R00 – The Role of Serotonin Signaling in the Nucleus Accumbens in Excessive Alcohol Drinking, \$747,000

Yuriy Usachev (Professor), **Nana Voitenko** (Professor, Bogomoletz Institute of Physiology, Kiev, Ukraine)

NIH R01 (MPI) – The Role of the Complement System in Spinal Mechanisms of Chronic Pain, \$1,812,632

IOWA PHARMACOLOGY

MEET OUR NEW GRADUATES!

Meet Our New Grads!

Since our last reporting, *four students* performing their thesis studies in the Department of Pharmacology have successfully completed their *PhD degrees*!

Join us in congratulating:



*Katherine Perschbacher, PhD Dec 2018** - Grobe lab

"Reduced Placental Expression of Regulator of G Protein Signaling-2 (RGS2) in Preeclampsia: Association, Consequence, and Cause" ([on-line announcement](#))

*Jake Rysted, PhD Dec 2018*** - Usachev lab

"Molecular Mechanisms and Functions of Mitochondrial Calcium Transport in Neurons" ([on-line announcement](#))



Rachel Minerath, PhD May 2019 - Grueter lab

"Mediator Kinase Submodule-dependent Regulation of Cardiac Transcription" ([on-line announcement](#))

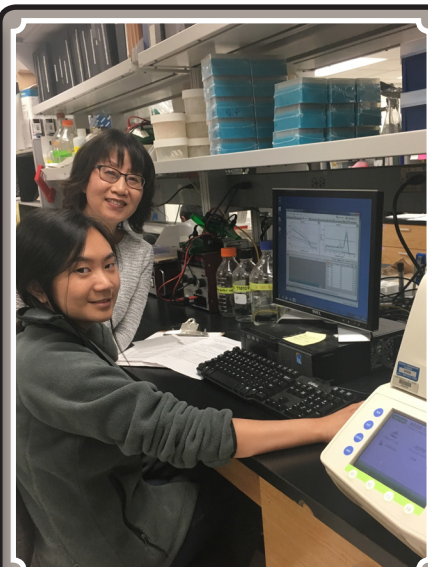
Satya Tandinada, PhD Aug 2019 - Dale Abel Lab

"Cardiac Effects of Acute Hyperinsulinemia and Chronic Fat Feeding" ([on-line announcement](#))



*Molecular Medicine Graduate Program student

**Neuroscience Graduate Program student



PHARMACOLOGY SNAPSHOT: Laboratory Assistant Anne Hao and Assistant Research Scientist Zhihong Lin review their qPCR data.

Generous gifts fund conference travel by Pharmacology trainees

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 eighteen Pharmacology trainees to scientific meetings in FY19, meetings at which they presented their work and made invaluable contacts with other scientists. 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

Dharmendra Bhargava* (Chen)
 Kyle Flippo* (Potthoff)
 Jingwei Jiang* (Rahmouni)
 Alex Keyes (Usachev)
 Jordan Kohlmeyer (D. Quelle)
 Rachel Minerath (Grueter)
 John Reho* (Rahmouni)
 Sarah Sapouckey (Grobe)
 Uday Singh* (Cui)
 Mengya Wang (Russo)

Jianing Song (Strack)
 Mackenzie Spicer (Fisher)
 Valerie Wagner (Kwitek)
 Wei Wang* (Chen)

James L. Spratt Scholars

Karen Clark (Kwitek)
 Alex Keyes (Usachev)
 Kenji Saito* (Cui)
 Uday Singh* (Cui)

() Advisor, *Postdoctoral Scholar

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, contact:

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OUR APPRECIATION

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

UPCOMING EVENTS

Visiting Speaker Seminar Sept 17

J. Thomas Cunningham, PhD
Professor, Department of
Physiology and Anatomy
University of North Texas
Health Sciences Center
Fort Worth, TX

Visiting Speaker Seminar Oct 8

James Granneman, PhD
Professor, Department of
Molecular Medicine and Genetics
Director, Center for Integrative
Metabolic and Endocrine
Research, Wayne State University
Detroit, MI

Faculty Seminar Oct 15

Deniz Atasoy, PhD
Assistant Professor
Department of Pharmacology
The University of Iowa

Visiting Speaker Seminar Oct 29

Yevgenia Kozorovitskiy, PhD
Assistant Professor
Department of Neurobiology
Northwestern University
Evanston, IL

Visiting Speaker Seminar Nov 5

Maribel Rios, PhD
Associate Professor
Department of Neuroscience
Sackler School of Graduate
Biomedical Sciences
Tufts University
Boston, MA

Pharmacological Sciences

Training Grant Retreat Nov 9

Kevin Tidgewell, PhD
Associate Professor
Medicinal Chemistry
School of Pharmacy
Duquesne University
Pittsburgh, PA

BRODY LECTURE Nov 14

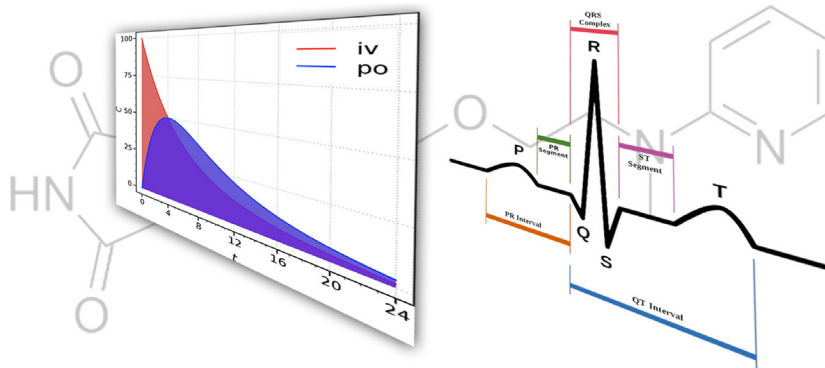
Jeffrey Friedman, MD, PhD
Professor, Rockefeller University
Investigator, Howard Hughes
Medical Institute
New York, NY

Faculty Seminar Nov 19

Huxing Cui, PhD
Assistant Professor
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The University of Iowa



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