

Brain Waves

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Welcome New Students!

Brian Barnett, University of Maryland-College Park

Korri Burnett, University of Michigan-Dearborn, B.S., University of Michigan-Ann Arbor, M.S.

Anjani Sreeprada Chakrala, Indian Institute of Technology-Madras [X. Huang Lab]

Taylor Keding, University of Wisconsin-Madison

Will Mayner, Brown University

Armand Meza, Virginia Tech University

Maeghan Murie-Mazariegos, Oklahoma State University

Charlene Rivera-Bonet, University of Puerto Rico-Cayey

Marisa Ross (N&PP), Duquense University

Whitney Stevens-Sostre, University of Puerto Rico-Mayaguez

Lowell Thompson, University of Wisconsin-La Crosse

Nick Vogt (MD/PhD), Swarthmore University [Bendlin Lab]



2016 Neuroscience Research Symposium Summary

By N&PP student Joshua Cruz (Kalin Lab)

Co-sponsored by the Neuroscience Training Program (NTP), Neuroscience and Public Policy Program (N&PP) and BioPharmaceutical Technology Center Institute (BTCI), the Neuroscience Research Symposium was held at the Promega Corporation in late August of this year.

The event started with a welcome address by NTP director Dr. Mary Halloran and Dr. Thomas Livelli, Vice President of Life Sciences Products and Services from the Promega Corporation where they commended the continuing collaboration between BTCI and the NTP for the opportunity to showcase faculty and student neuroscience research at UW-Madison. In the first session, Dr. Bas Rokers spoke about examining the neural basis of visual agnosia and ways in which his lab are able to model cortical blindness in human and non-human primate

CONGRATS FALL GRADUATES!

Chadd Funk graduated from the Tononi lab and is now a medical student at UW-Madison.

Rikki Hullinger graduated from the Puglielli lab and is now a Patent Scientist for Michael Best & Friedrich LLP.

Martina Ly graduated from the Bendlin and Davidson labs and is now a postdoc at UPenn.

Maia Pujara graduated from the Koenig lab and is now a postdoc at NIH.

Annie Racine graduated from the Sterling Johson lab and is now a postdoc at Institute for Aging Research, Harvard Medical School.

Erika Starks graduated from the Bendlin lab and is now a medical student at UW-Madison.

Jingxin Wang graduated from the Li lab and is now a resident at Baylor.

Rick Wolf graduated from the Koenig and Herringa labs and is now a program director and scientist at Insight Data Science.

Brittany Young graduated from the Prabhakaran Lab and is now a medical student at UW-Madison.

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models using array of methods that stem from behavioral performance to electrophysiology. NTP student, Taehee Kim (Vemuganti Lab) enlightened the audience with his work on mouse models demonstrating that suppression of alpha-synuclein protein in the brain during an ischemic episode may reduce injury. Pharmaceutical Sciences student, Michelle Pizzo (Thorne lab), spoke about the difficulties of intrathecal drug distribution to the central nervous system and her efforts in discovering alternate methods of distributing targeted biotherapeutics to treat neurological disorders.

The second session topics ranged from the genetic underpinnings of altered organelle structure and function in hereditary spastic paraplegia (HSP) by Dr. Jon Audhya to NTP student Caitlin Short's (Gomez Lab) work on utilizing 3D axon guidance methods to examine invadosome formation. NTP student, Scott Vermilyea (Emborg Lab), closed the session talking about utilizing marmoset skin cells to derive dopaminergic cells lines to study Parkinson's disease.

Before the lunch break, the NTP welcomed back 1981 NTP alumnus, Dr. Thomas Reh, professor in the Department of Biological Structure at the University of Washington School of Medicine. After a presentation awarding Dr. Reh with this year's Distinguished Alumni Award, the keynote presentation began with a special introduction from his former advisor, Dr. Katherine Kalil, where she spoke fondly of his time in her lab as her first trainee. In his talk, Dr. Reh spoke of his time in the NTP and how it has shaped his current work in researching the neurobiological mechanisms of retinal regeneration. With the talk's slogan, "it's never too late to change your fate", he spoke of his promising research utilizing mouse models to describe the difficulties but not the impossibilities of regenerating retinal cells.

In the afternoon session, new NTP faculty trainer, Dr. Darcie Moore, highlighted how age effects the ability for stem cells to proliferate and ways in which her lab is trying to overcome the molecular barriers to turn old stem cells new again. Closing the session with talks from students in the dual degree programs, N&PP student Andrew Merluzzi (Bendlin Lab) talked about the utilization of advanced diffusion tensor imaging (DTI) techniques to study white matter integrity in Alzheimer's disease. MSTP student, Daryl Fields (Baker Lab), spoke about understanding the mechanisms surrounding inactivity-induced respiratory plasticity through hypoxic conditions.

Towards the end of the symposium, Dr. Reh and a panel of invited NTP alumni spoke with students and answered questions regarding career paths in and outside of academia and industry. Closing out the day, a poster session was held showcasing the student research done by students affiliated with the NTP.

In all, the day celebrated the NTP's commitment to cutting-edge innovation in neuroscience research, enthusiastic collaborations between students and faculty, and the ongoing impact that NTP alumni can have on the scientific community.

CONGRATS TO THE STUDENTS THAT HAVE RECENTLY PASSED THEIR PRELIMS!

Sara Berman
Drew Sheldon

C.P. Frost
Joe Wszalek, Esq.

Corinne Jones

Welcome New Faculty!



Darcie Moore

Assistant Professor,
Department of
Neuroscience

Neural stem cell aging



Jon Audhya

Associate Professor,
Department of
Biomolecular Chemistry

Organelle dynamics and
neuronal trafficking;
Neuronal control of motor
function

Awards & Recognitions

Congratulations to the following students and faculty for their recent achievements:

Sarah Berman received a F30 NIH Ruth L. Kirchstein National Research Service Fellowship.

Craig Berridge received a UW WARF Named Professorship he chose the title Patricia Goldman-Rakic Professor of Psychology

Inca Dieterich was awarded a slot on the Biology of Aging T32 Training Grant, funded by National Institute of Aging.

Sofiya Hupalo received the Anne E. Kelley Fellowship in Behavioral Neuroscience Travel Award and received the 2016 NTP Travel Award.

Margaux Kenwood was named as a WARF Ambassador.

Sisi Li received the 2016 NTP Travel Award.

Antoine Madar received the citizen United for Research in Epilepsy (CURE) Young Investigator Travel Award and the UW-Madison SRGC conference presentation Funds.

Andrew Merluzzi received a travel award to Alzheimer's Association International Conference (AAIC) and was a chair for a scientific session at the conference.

Kate Sprecher was elected chair of the Gordon Research Seminar on Sleep Regulation and Function.

Scott Vermilyea received the 2016 NTP Travel Award.

Caitlin Warlick-Short received the 2016 NTP Travel Award.

Xinyu Zhao was titled Jenni and Kyle professorship in Neurodevelopmental Diseases.

Career Chats with NTP Alumni

NTP Student, Russell Taylor (Dent Lab) interviewed his former PI and NTP alumnus, Dr. Thomas Reh, on science, grad school and building the skills to be a successful scientist.

Tom Reh is the quintessential PI and professor, and followed an impressively standard path to becoming a very well known and well liked figure in the world of retinal research. After receiving his PhD from the Neuroscience Training Program, he did a post-doc at Princeton, and from there was hired as an associate professor in Calgary. Later, he moved to the University of Washington, where he has been for 21 years. Throughout his career, he has published high profile articles, and is perhaps best known for being the first to develop retinal cells from human embryonic stem cells.

He is currently working on numerous approaches to treat retinal diseases, as well as continuing work on generating retinal cells from stem cells and induced pluripotent stem cells. Having worked with him for five years, I know he clearly loves what he is doing, and approaches scientific questions and pitfalls with an enthusiasm and optimism that I struggle to emulate. Not every question has an answer, and not every answer corresponds to the question initially asked, but a well designed experiment should always tell the scientist something.



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Tom has had many successful scientists come through his lab, and while many have gone on to continue in academia, many have gone on to other successful careers as well. Regardless of the planned path, he stresses the importance of technical skills, including those that will never be used after school.

"As a graduate student you will learn science by doing, and you will learn many different lab techniques. These may be very specific to your project and you may do something unrelated as a postdoc and for your career. Nevertheless, learning specific techniques sharpens your ability to focus your energy towards a goal, to conduct experiments in a rigorous and reproducible way and to develop a high tolerance for failure."

For those looking to have a career similar to Tom, his advice can be harder to follow. "Be like me, do what I did" is both inspirational and depressing, as Tom has published many papers, with a high degree of impact spread amongst his papers. But he does have some more general advice that can lead others to the types of success he has enjoyed.

"In addition to technical lab skills, the three most important things to learn in graduate school to prepare you for a faculty position at a research university or another science-related occupation are as follows: 1. Learn to analyze data, both your own and the data from other people in publications and online databases. 2. Learn to write, both scientific reports and review articles. 3. Learn to give oral presentations about your work (seminars and chalk talks) and the work of others (teaching and TAing classes, presenting at journal clubs)."

Finally, Tom emphasized the importance of working well with others. "It is important to have healthy relationships with your peers and colleagues, with those above you and with those whom you oversee." Developing the skills to work with others has been of critical importance to Tom's continued success and has been a stumbling block for many other talented scientists.

It is very difficult to pick out any one, two or three lessons from Tom that have led to his success. He takes on new projects with energy, but is willing to abandon projects if they fail or are just too difficult to be worthwhile. He is well known, respected and liked by his peers. Perhaps most important is that Tom is clearly enthusiastic about his work and the work of others. He loves doing science, digging out answers and wading through muck to get them. Combine these traits with an excellent memory for small mundane facts and you have a strong foundation to be a highly successful professor and PI.



Annual Picnic!

Students take home a win for the second year in a row at the annual students vs. faculty volleyball game!



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NEUROSCIENCE
TRAINING PROGRAM

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Contributions to the Program

Funds given to the program are used to support recruiting activities, guest speakers, the graduate travel award for professional conferences and the annual program picnic. For additional information, please contact the program office at (608) 262-4932. To contribute, please contact the UW Foundation at:

<https://www.myuwconnect.org/give?id=9E933A87-82C0-449E-B62E-6476CF0A0A93>

Thank you to all those who have contributed and continue to support the Neuroscience Training Program and its students.

