Upcoming Events

• Spring Quarter Begins – March 30

• OSUMC Research Day – April 2, 2009
  For more information visit http://medicine.osu.edu/researchday/index.cfm.

• Hunt-Curtis Frontiers in Neuroscience Seminars – 3:30 pm in 115 Biomedical Research Tower with a reception following the seminar
  April 13 – Richard Palmiter, PhD, University of Washington and Howard Hughes Medical Institute
  May 18 – Michael Ehlers, PhD, Duke University and Howard Hughes Medical Institute

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  May 11 – Ben Barres, PhD, Stanford University
  June 10 – Elva Diaz, PhD, University of California-Davis

• Annual Student Reviews – Date TBA

NGSP Receives Funds to Support Student Travel

Dr. Randy Nelson was selected as the recipient of the 2009 Ohio State University Distinguished Lecturer Award. The University Distinguished Lecture Series was inaugurated in 1996 as one of the University's highest honors for a senior faculty member.

The lectureship is awarded in recognition of outstanding academic achievement, particularly, but not exclusively, in research, scholarship, or creative activity. The President's and Provost's Advisory Committee reviews nominations and recommends candidates to the President and the Provost for final selection. The Office of Academic Affairs presents an award of $5,000 to the University Distinguished Lecturer to designate for a purpose that promotes the academic goals of the lecturer's college and/or the University. Dr. Nelson has designated his award to the Neuroscience Graduate Studies Program to support graduate student travel to scientific conferences.

As travel support for our program varies from year to year depending on budgetary contingencies, Distinguished Lecturer Travel funds will allow the stable provision of two $500 awards each year for the next five years. The criteria for this support are as follows: (1) Students must be first-author presenters at one of the main scientific meetings for their discipline, and either (2) their faculty mentor should have no funds to support the travel or (3) their presentation includes findings of unusually high significance for their field.

Applications should include a copy of the abstract, a statement about why the meeting is important for career development, and a letter of support from the advisor. Applications can be submitted anytime during the year to Keri Bantz (Keri.Bantz@osumc.edu), but must be submitted and approved prior to the conference. Selection of awardees will be performed by the NGSP Graduate Studies Committee. In the near future we hope to identify further sources for these funds so that the support level can be increased and/or the stable support period extended beyond five years.

Dr. Nelson presented his lecture "Seasonal Rhythms in Sex and Death: A Time to be Born and a Time to Die" on February 19, 2009.
NGSP Committee

Committee Members:
- Randy Nelson – Co-Director
- John Oberdick – Co-Director
- Christine Beatle
- Georgia Bishop
- Anthony Brown
- Andy Fischer
- Ben Givens
- Lyn Jakeman
- Brian Kaspar
- Stuart Mangel
- Dana McGahee
- Robin White – Student Rep
- Kate Karolina – Student Rep

Activities during Winter 2009:
- Approved student requests
- Reviewed 96 applications
- Interviewed 27 applicants
- Nominated 10 applicants for fellowship awards
- Made admission decisions for Autumn 2009 class
- Attended McNair Conference in Texas for recruitment

Anyone interested in receiving brochures to distribute to prospective students, please contact Keri Bantz at keri.bantz@osumc.edu.

NGSP Faculty Spotlight

In this issue, we are highlighting two NGSP faculty Drs. Brian Kaspar and Balveen Kaur to learn more about their research and contributions to the program.

Dr. Brian Kaspar is an Assistant Professor in the Department of Pediatrics and Principal Investigator at The Research Institute at Nationwide Children’s Hospital. Dr. Kaspar joined the program in 2007 and currently serves as a member of the NGSP committee.

The Kaspar Laboratory focuses on basic mechanisms underlying aging of the brain and neurodegenerative disease. We utilize two major platforms: gene delivery and stem cells to aid us in our studies. We have specific expertise in the field of gene delivery, where we work with a number of viral vectors including adeno-associated virus for delivering drugs and genes to the CNS. Delivering drugs or therapies to the brain and spinal cord has been met with challenges given the cellular heterogeneity and complex neuronal circuitry of the central nervous system (CNS). Additionally, the blood brain barrier prevents easy access to nervous tissue from the bloodstream. The laboratory has recently discovered a virus that penetrates the blood brain barrier, partly overcoming this problem. This work was recently published in Nature Biotechnology and expands our ability to treat diseases such as Amyotrophic Lateral Sclerosis and Spinal Muscular Atrophy. Furthermore, our laboratory utilizes stem cells, from embryonic and adult derived sources as well as producing induced pluripotent stem cells from fibroblasts. We are currently in the process of developing in vitro based models of human specific neurodegenerative diseases. In fact, we recently received post-mortem tissue from a human ALS patient. We have derived stem cells from the spinal cord of this patient and currently producing iPSCs from skin fibroblasts. These exciting efforts are part of a new program in the laboratory to generate patient specific models of disease in a tissue culture dish where we will be able to study these unique individuals, cells and potentially test new therapies that a patient may effectively respond to.

Dr. Balveen Kaur is an Assistant Professor in the Department of Neurological Surgery. Since joining the program in 2007, Dr. Kaur has participated in recruitment efforts, coordinated the 797 seminar course during fall 2008 and is currently the advisor for Amy Haseley (a second year NGSP student).

The Kaur laboratory has a major interest in investigating oncolytic viral (OV) therapy for brain tumors. We are studying various aspects of the tumor microenvironment on the tumors response to OV therapy, as well as its impact on tumor biology.

1) One aim of our laboratory is to understand how oncolytic viral treatment of brain tumors affects tumor vasculature and perfusion, and to with various different tumor exploit this knowledge to design rational treatment strategies and novel oncolytic viruses to improve anti-tumor efficacy. We have created three novel oncolytic viruses armed extracellular matrix modulating genes. We are currently investigating the preclinical efficacy of this approach in animal models of glioma.

2) Our laboratory has identified the rapid and dose dependent induction of CYR61 a secreted protein upon oncolytic viral treatment of gliomas in vitro and in vivo.

Student Publications


NGSP Faculty Spotlight Continued

We are investigating the feasibility of measuring changes in secreted CYR61 protein levels to monitor pharmacodynamics of oncolytic viral therapy. The laboratory is also measuring the impact of this protein on oncolytic viral therapy.

3) We are also investigating the effect of tumor extra cellular matrix on the diffusion and spread of large therapeutic molecules such as oncolytic viruses and antibodies within the tumor interstitium. Our results show that the tumor ECM poses a very significant physical barrier to efficient diffusion of OV and is one of the major limitation towards the successful tumor elimination. We are now evaluating the efficacy and potential side effects of combining oncolytic viruses with tumor ECM digesting enzymes in vivo.

Brain Awareness Week

Every March, NGSP students and faculty participate in Brain Awareness Week, a series of events held around the world to increase public awareness about the brain. Brain Awareness Week requires the coordination of many graduate students and faculty in staffing the COSI exhibits. We are grateful to Akshata Ahmed who organized the 2009 Brain Awareness Week activities at COSI, as well as Jason Smith, Faculty Leader for Life Sciences at COSI, who facilitated the activities of NGSP.

The four day long event was held March 18-21 and the exhibit consisted of several stations:

• Brain zoo station where kids are asked to match the brain specimen to the right animal. Specimens included frog, chicken, fish, rodent, salamander and primates. The human brain specimens generate a lot of interest from kids and adults alike.

• A visual attention task where subjects are asked to count a certain event occurring on the computer screen and later asked if they could identify an unusual occurrence. Kids reacted free brain periods and brain wave.

• Hands-on controller-learning task where kids/families are asked to wear vision shifting goggles and have a tubby-eye target practice. This task is a super-hit among the kids.

• A plastic brain model which can be taken apart and reassambled. This is a challenging exhibit and older kids enjoyed it.

NGSP Faculty Spotlight Continued on page 3
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NGSP Faculty Spotlight Continued

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Director’s Chair

Winter quarter was about recruiting and graduate admissions. We had a pool of highly qualified applicants this year and it appears that we will easily fill our next class with high caliber students. We want to thank the students and faculty who participated in the recruitment activities—by emphasizing the good things about our program, Ohio State, and life in Columbus, they helped us attract these terrific applicants.

A special thanks is reserved for Keri Bantz who organized the recruitment sessions.

Additionally, Robert Stephens and Randy Nelson attended the southwest regional McNair’s Scholars convention at the Univ. of North Texas in Denton, TX in February. This event provided an opportunity to recruit traditionally-underrepresented students in Neuroscience and other STEM programs.

NGSP is successful because of the high participation of our students, staff, and faculty in maintaining and building the program.

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