Welcome Back!

It has been a very exciting year in the department. Most notably, we recruited three very talented new faculty members: two highly promising junior faculty members and one highly accomplished full professor. Our graduate program recruited three top ranked PhD students. We are seeing successes at all phases of our tripartite mission. It is a great time to be in IBP!

Joe Metzger, PhD, Professor & Chair

NEW FACULTY IN IBP

**Zofia Zukowska**, MD, PhD, comes to IBP from Georgetown, where she was for 25 years. In the last four years she served as Department Head there and Zukowska was also the founding director of Stress Physiology Research Center. Her research focus has been the role of stress in health and diseases, in particular on stress hormone neuropeptide Y (NPY) and its relationship to atherosclerosis, angiogenesis and obesity. Here at the U of M in IBP, Zukowska will continue this research in her recently-renovated lab on the second floor, which will be home to the brand-new Stress Physiology Center.

**DeWayne Townsend**, DVM, PhD joined the faculty as a tenure-track Assistant Professor in June of this year. Townsend obtained his DVM and PhD degrees from the University of Minnesota and received post-doctoral training at the University of Michigan. He came back here to the U in the summer of 2008 as a senior member of Joe Metzger’s research group. Townsend’s research interests are focused on understanding the pathophysiological mechanisms of heart failure, with a specific focus on the cardiomyopathy associated with muscular dystrophy. His laboratory is on the 4th floor of Nils Hasselmo Hall.

**Alessandro Bartolomucci**, PhD, is another new addition to IBP who will also be faculty in the Stress Physiology Center. Most recently at the University of Parma, Italy, Bartolomucci’s research focuses mainly on molecular mechanisms and genetic-predisposing factors of stress-induced depression and obesity. He also pioneered the research on Vgf gene-derived peptides, with special reference to their role in stress, psychopathologies, pain and obesity. Bartolomucci is also an Academic Editor of PLoS ONE.

OUR MISSION

Dedicated to an integrative systems biology approach to biomedical discovery. We partner with colleagues across disciplines to investigate questions ranging from the gene/molecule to the whole animal, striving for excellence in research and dissemination of new and global impact.

Committed to mentoring and training graduate students. We empower students to develop a deep understanding of the complexity of physiological systems to enable them to pursue unique career pathways spanning from academia to bi-industry.

Devoted to excellence, innovation, and scholarship in education. We educate students in the integration of structure and function of cells, organ-systems, and living animals, providing a strong foundation for knowledge discovery in basic science and human health fields.
The Graduate Program in Integrative Biology and Physiology (IBP) is on a successful track in large part due to our ability to recruit outstanding students. Dusty Moore and Jason Foss have successfully completed Year 1 in the program which included passing a comprehensive 2-day written preliminary exam in May 2010. Both students have started their thesis work; Dusty has joined Doris Taylor’s laboratory and Jason has joined the Osborn laboratory.

We are excited to welcome three new outstanding students into the program this fall: Cheryl Cero, Dalay Hirsch and Evelyne Houang. See profiles (to the right) for more information about them.

IBP added five new faculty members/mentors to its graduate program this year, including Mary Garry, PhD, Department of Medicine (Cardiology); Angela Panoskaltis-Mortari, PhD, Department of Pediatrics (Division of Hematology-Oncology and Blood and Marrow Transplantation); Alena Talkachova, PhD, Department of Biomedical Engineering; Cliff Steer, MD, Department of Medicine (GI section); and James M. Ervasti, PhD, Department of Biochemistry, Molecular Biology and Biophysics (BMBB).

Finally, two student awards were given at the 2010 IBP Fall Welcome held at the Campus Club. The Alan Hemmingway Scholarship, which is given to a 2nd year IBP student with the highest GPA at the end of Year 1, was awarded to Jason Foss. The 3M Fellowship, which provides stipend support for four years and is given to an incoming student, was awarded to Evelyne Houang. Congratulations to Jason and Evelyne!

---

**Dalay Hirsch**

I am a Minnesota native. I grew up in Golden Valley just a few minutes away from the Twin Cities. In 2004, I graduated from St. Olaf College with a degree in Chemistry. I was first turned on to Physiology after taking a class at the U of M taught by Professors Anderson and Kierstead. After the course ended, I fueled my new found love for physiology by working in Dr. John Osborn’s lab during following year. While in the lab I looked at the contribution of the cardiac sympathetic vascular bed to Angiotensin II salt-sensitive hypertension. I am currently rotating in Dr. Scott O’Grady’s lab where I’m working with Calu-3 cells.

---

**Evelyne Houang**

My name is Evelyne and I graduated from the University of Minnesota last year with a BS in chemistry. My research interests lie in the integration of chemistry and physiology in muscle research, particularly in the treatment of heart conditions. As such, I am interested in the therapeutics of both pharmacological and genetic interventions from the molecular to whole animal level. Past research experiences include using computational modeling to elucidate the molecular mechanism behind increased cardiac contractile function observed in a genetically treated mouse model of heart failure. I am currently doing a research rotation in Dr. Dawn Lowe’s lab.

---

**Cheryl Cero**

I am an international graduate student here in the Department of Integrative Biology & Physiology. I come from Italy where I graduated from the University of Parma, with an M.S. in Biology and Biomedical Application in 2009. I am highly interested in stress related to obesity and metabolic disorders. I spent the last two years doing research, first in Parma with Dr. Bartolomucci, then in the ex NPY lab at Georgetown University, Washington DC, with Dr. Zukowska. I am currently rotating in the Zukowska lab and really looking forward to discovering other labs and learning new research topics and techniques.
EDUCATION UPDATE FROM STEVE KATZ

IBP’s education mission is accomplished in part by both Anatomy and Physiology classes aimed at undergraduate, graduate, and professional students. We continue to see increased demand for our classes and have responded by adding both new class sections and completely new classes. For fiscal year 2010, the sum of all of our Physiology and Anatomy classes yielded a total tuition revenue of over $4.4M, with more than 3,000 students enrolled in IBP classes.

- Both the medical student Anatomy and Physiology classes were redesigned for the upcoming academic year as part of a medical school-wide curriculum initiative.
- Our undergraduate major serves approximately 200 students per year and is in the process of upgrading to allow students access to more advanced Physiology courses, many of which are relatively new.
- The Undergraduate Physiology Society (UPS) has entered its second year. Under the inaugural stellar leadership of Ms Amanda Delany the club has grown in size and scope. Currently there are over 40 regular members dedicated to promoting physiology on this campus. This year’s president is Josh Ladella, with club officers Thu Doan, Crystal Shemenauer, Yein Kim, Matt Hedlund, Dani Pickett and Brian Garrity. Congratulations to all who make this club a great success, including Vince Barnett, faculty liaison.
- Our undergraduate Physiology survey course for non-majors is so popular that it is waitlisted each semester, and IBP is considering adding a special summer class to accommodate the demand, which is now over 700 students per year.
- Both Physiology and Anatomy sections have each created classes that allow our best and brightest undergraduates to act as teaching assistants in some of our classes with lab components.

Finally, congratulations to Tony Weinhaus (below, L) for receiving the 1st-year medical student Distinguished Teaching Award for the second consecutive year, and also to Mark Cook (below, R) for receiving the first year dental student Professor of the Year Award for the third consecutive year!

ANATOMY DISSECTION LABS GET UPGRADE

In a great boon for anatomy students and professors alike, this summer the Anatomy Department received an MMF grant from an anonymous donor for major upgrades to the existing anatomy labs on the 5th floor of Jackson Hall.

The work to upgrade the labs has been a work-in-progress since installation began just one week before the start of medical gross anatomy labs in August, but is nearly complete. There is a mobile camera and laptop that can go anywhere in the labs, and the large flat screen monitors can work independently or as a group.

1ST FLOOR JACKSON HALL RENOVATION PROJECT TO BE COMPLETED IN 2011

1st floor Jackson Hall is undergoing a facelift thanks to an ARRA Federal Stimulus grant awarded to Dean Paller in the Medical School. Drs Ebner (Neuroscience) and Metzger (IBP) will co-direct the new Animal Behavioral Phenotyping and Imaging Core facility. An estimated 250 faculty will make use of the new facility. The North Wing will house the Biomedical Imaging Processing Laboratory (BIPL), directed by Dr. Mark Sanders in Neuroscience. The South Wing will contain state-of-the-art core facilities for learning/memory; exercise/activity; aversion/pain assessment; and cardiovascular and muscular and metabolic monitoring in rodents. Dr. Zofia Zukowska, new this fall to the IBP faculty, will provide oversight of the metabolic unit of this facility in her role as Director of the Stress Physiology Center.

SAVE THE DATE: MAY 2, 2011
SECOND ANNUAL VISSCHER SYMPOSIUM

Louis Ignarro, PhD, was coreipient of the 1998 Nobel Prize in Physiology or Medicine with Robert F. Furchgott and Ferid Murad for demonstrating the signaling properties of nitric oxide. He is currently Professor of Pharmacology at the UCLA School of Medicine’s Department of Molecular and Medical Pharmacology in Los Angeles, which he joined in 1985. Before relocating to California, he was a professor of pharmacology at Tulane University School of Medicine, New Orleans, for 12 years. Ignarro has also previously worked as a staff scientist, research department, for the pharmaceutical division of CIBA-GEIGY Corporation in New York. Ignarro holds a B.S. in Pharmacy, Columbia University, 1962, and a PhD in Pharmacology, University of Minnesota, School of Medicine, 1966. He also received a postdoctoral fellowship in chemical pharmacology from the National Institutes of Health in 1968.

![Tony Weinhaus (left), and Mark Cook at the reception for the first annual Visscher Symposium in June, 2010.](image)
JOE METZGER AWARDED MN FUTURES GRANT

Joe Metzger, Frank Bates from CEMS, and Marc Hillmyer from Chemistry have been awarded a U of M Futures grant. The grant, Molecular Design and Cardiovascular Implementation of Novel Block Copolymers, is for two years. U of M Futures grants are given in order to encourage interdisciplinary research.

DEWAYNE TOWNSEND RECEIVES K08

DeWayne Townsend, DVM, PhD, has been awarded a Clinical Scientist Research Development award from the National Institutes of Health for his work on dystrophic cardiomyopathy. The award focuses on the role of the blood vessels in the progression of the heart disease associated with muscular dystrophy. This five year award will provide support for Townsend and his research program.

MAKE A GIFT TO IBP

WE NEED YOUR SUPPORT

The generosity of individuals who recognize the importance of our Department’s work is indispensable to our success. There are many different ways to support the Department of Integrative Biology and Physiology. For more information about giving opportunities, please contact Krista Mathews Dean at the Minnesota Medical Foundation, 612-626-6506 or k.dean@mmf.umn.edu.