IBP Excellence

The Department of Integrative Biology and Physiology continues its lofty goal of high impact in its mission. Outstanding departments require outstanding faculty, and IBP is achieving this standard by virtually every metric. Together we hold our shared mission of excellence in research and teaching in the highest regard. From significant teaching accolades in our undergraduate, graduate and professional courses, to publishing in top peer-reviewed scientific research journals, IBP faculty are performing at an exceptional level.

Indeed, IBP is exceptional, according to the Dean’s departmental metrics analysis for FY15. Of the 25 departments in the medical school, no department scored better than IBP! This is a fantastic achievement by IBP faculty, students and staff!

To continue to achieve our goals requires the infusion of outstanding new talent. We are therefore absolutely delighted that this year brings in two new tenure-track Assistant Professor faculty to IBP. Dr. Emilyn Alejandro is an outstanding young scholar in the field of pancreatic β-cell physiology. Her work fits in extremely well with the department’s mission to expand research expertise in obesity, diabetes and metabolism research. Emilyn comes to us from the University of Michigan, where she conducted her postdoctoral work. We are thrilled to welcome Emilyn to the real U of M! Emilyn’s lab is on the 3rd floor of CCRB and she already has a graduate student in the lab whom she is co-mentoring. Then, later this year, Dr. Hai-Bin Ruan will join our faculty as an Assistant Professor. Hai-Bin is coming to us from Yale University where, as a postdoctoral fellow, he published several high-profile papers centered on his breakthrough discoveries in hormonal regulation of metabolic homeostasis, with a particular focus in O-GlcNAc signaling in metabolic regulation. We are very excited for Dr. Ruan join us. His lab will also be on the 3rd floor of CCRB.

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WELCOME NEW IBP FACULTY!

Emilyn Alejandro, Ph.D.
Assistant Professor

Phone: 612-308-7685 / ealejandro@umn.edu

Education:
BS – U of Washington, Seattle, WA
Ph.D. – U of British Columbia, Vancouver, BC
Postdoctoral – U of Michigan, Ann Arbor, MI

Current Position: Assistant Professor, University of Minnesota, Department of Integrative Biology & Physiology

Selected Honors and Awards:
2007 NIH NIDDK Ruth L. Kirschstein National Service Award Fellowship
2010 Young Scientists Training Award, European Association for the Study of Diabetes, Heidelberg, Germany
2011 Junior Investigator Research Excellence Award in Basic Science, 7th World Congress on Developmental Origins of Health and Disease (DOHaD)
2012 The Hartwell Foundation Fellowship
2014 NIH NIDDK Mentored Research Scientist Development Award (K01)

Research Interests: Diabetes and metabolism roles of O-linked GlcNAc Transferase (OGT) signaling in pancreatic beta-cell development and programming of beta-cell susceptibility to diabeticogenic conditions.

Current Research Support:
- NIDDK Career Development Award (K02) (09/04/2018)

Selected Recent Publications:

Hai-Bin Ruan, Ph.D.
Assistant Professor

Phone: 612-308-7686 / hruan@umn.edu

Education:
BS – Nanjing University, China
Ph.D. – Nanjing University, China
Postdoctoral – Yale University

Current Position: Assistant Professor, University of Minnesota Medical School, Department of Integrative Biology & Physiology


Research Interests: The major research topic in the Ruan Lab is nutritional and hormonal regulation of metabolic homeostasis, with a particular focus on O-GlcNAc signaling in metabolic regulation. Current ongoing projects include: Novel secreted factors and neuronal circuits that control thermogenesis in brown and beige adipocytes; Mechanisms and functions of autophagy in metabolic homeostasis; Microbiota-host interactions in obesity and digestive diseases; Inflammation in obesity, diabetes, and inflammatory bowel disease.

Current Research Support: AHA Scientist Development Grant

Selected Recent Publications:
In the last couple of months the Graduate Program in Integrative Biology and Physiology has seen many of our students reaching their graduate program milestones and we will continue with that trend this fall and early winter. Anthony Vetter and Matt Wheelwright both completed their oral preliminary exams in August. Dalay Olson was the first of her 2010 trio to successfully defend her thesis on September 2, 2015. Cheryl Cero is scheduled for October 30 and Evelyne Houang is lined up to defend later this year or early January. Dusty Moore is anticipating defending her thesis later this fall. Forum Kadmar who is on a Physician Scientist track is currently at the Cleveland Clinic completing a clinical appointment; she will be returning to defend her thesis later this fall. Our first year students, Tanya Meyers (O’Connell), Kadambari Shekar (Yannopoulos), Caitlin Johnson and Amber Lockridge have all reached their first hurdle by successfully passing their written preliminary exams last May.

Our student researchers are also successful in the grant arena. Mayank Verma received an NIH F30 Fellowship, Matt Wheelwright was awarded a grant through Minnesota Regenerative Medicine funding and first year student Amber Lockridge secured a grant through the Committee for Pharmaceutical Development.

This year the Allan Hemingway scholarship was presented to both Tanya Meyers and Amber Lockridge, both of whom received the highest GPA their first year of our graduate program.

IBP welcomed our newest graduate student, Carolina Ortiz!

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**ZOFIA ZUKOWSKA LECTURE**

Hosted by IBP Graduate Students on September 3, 2015

Featuring Tony R. Hunter, Ph.D.

Director, Salk Institute Cancer Center

The IBP graduate students hosted the second annual Zukowska Lectureship in September. The invited speaker was Dr. Tony R. Hunter, Ph.D., the Renato Dulbecco Chair in Cancer Research at the Salk Institute for Biological Studies in La Jolla, California, and one of the foremost leaders in the field of cell growth control. The title of Dr. Hunter’s talk was “Post-Translational Modification of Proteins and Signal Transduction.”

Introducing: Carolina Ortiz

I was born and raised in San Jose, Costa Rica. In 2012 I graduated from the University of Costa Rica with a B.S. in Biology. In 2014 I completed my Masters in Stem Cell Biology at the University of Minnesota and then continued to do research under Dr. Rita Perlingerio’s guidance. I chose to pursue my PhD at the University of Minnesota continuing my research with muscular dystrophies.
Incoming Undergraduate Physiology Society President Kseniya Zvereva and her UPHYS officers kicked off the fall of 2015 by greeting freshmen during Welcome Week, in addition to hosting a barbecue during Homecoming Week.

In Spring 2015, UPHYS raised money selling “walking tacos” during April’s Relay for life event. A highlight of the spring calendar was a meeting where six IBP graduate students (and one medical student) formed a panel to discuss some of the decisions that helped shape their respective academic paths and the IBP grad students provided an insider’s look at our Ph.D. program to the undergraduates.

The 2nd annual IBP graduation reception for students and their families was held at the McNamara Alumni center prior to the CLA graduation ceremony. Graduating Seniors with their families and friends met with Dr. Barnett, Dr. Anderson and Dr. Lundell. It was a great opportunity for students and their families to connect with our future alumni.

Congratulations to Dr. Mercedes Gutierrez! Mercedes was a first time medical school lecturer in anatomy/embryology for us last fall, and she recently was named the recipient of the Year One Distinguished Teaching Award in the medical school.

Congratulations to the top undergraduate GPA for 2014-2015, Britney Thomson!

Congratulations to undergraduate Britta Logdahl and post doc Ninitha Asirvatham-Jeyaraj for each winning the The Lifson/Johnson Memorial Award recognizing excellence in physiology teaching by undergraduate, graduate students or post-docs.
IBP SPECIAL EVENTS

6th Annual Visscher Symposium – 2015

The 6th Annual Visscher Symposium was held May 20, 2015 featuring keynote speaker, Dr. Bruce Spiegelman, of Harvard Medical School. The title of his keynote was “Brown and Beige Fat: Basic Biology and a Novel Pathway of Thermogenesis.” The auditorium in MMB 3-120 was filled to capacity for this event, which was followed by an evening reception and Young Investigator award ceremony. The Visscher Symposium is named for former Department Chair, Dr. Maurice B. Visscher, member of the National Academy of Sciences, who chaired the IBP Department from 1936-1968. Dr. Visscher’s historic leadership as citizen scientist is the inspiration for this annual event.

Bruce M. Spiegelman, PhD

SAVE THE DATE for the 7th Annual Visscher Symposium, featuring Dr. Eric Olson of UT Southwestern, May 31, 2016.

IBP AT THE STATE FAIR

IBP faculty, staff and graduate students helped with the “IBP Has Heart” exhibit at the State Fair again this year. Dr. Metzger chatted with Medical Students taking his blood pressure.

Cardio Palooza 2015

IBP, in collaboration with the Lillehei Heart Institute and Cardiology, led another highly successful cardiovascular retreat this past July, 2015. Cardio-Palooza 7 featured over 200 faculty, students and fellows in attendance at the CCRB, and 85+ posters and three short talks by young investigators were presented across both basic and clinical CV sciences.
EMERITI FACULTY

A fond farewell and best wishes in retirement to Drs. David Levitt and O. Douglas Wangensteen who, each having served the University for 50 long years, have passed the torch to the next generation of dedicated faculty. We will miss you and wish you well in retirement!

Alumni Profile

Marina Brockway, PhD, MBA
Founder and Chief Technology Officer

Ms. Brockway received her MS in Physiology from IBP in 2014.

Ms. Brockway founded VivaQuant in 2009 to commercialize novel signal processing algorithms for highly accurate extraction of information from physiological signals such as ECG. Marina is an expert in algorithm development for ultra-low-power implementation in embedded systems and has a deep understanding of statistics, cardiovascular physiology, and intellectual property portfolio development. Prior to founding VivaQuant, Marina held scientist and management roles in the cardiac rhythm management and neurostimulation divisions of Guidant (currently Boston Scientific).

Marina has 68 issued and pending patents in the fields of signal processing, devices for monitoring ambulatory subjects and systems for management of patients with chronic cardiovascular disease.

VivaQuant, LLC
St. Paul, MN  55126
Source: URL: http://www.vivaquant.com

Alumni Registration Form Here:
http://apps2.ahc.umn.edu/IBP/Alum/index.cfm?donation!

STAFF HIGHLIGHTS: Yang Chong

Yang Chong, Finance Professional 3 at Integrative Biology/Physiology, has recently celebrated her 25th anniversary of employment at the University of Minnesota. She began as a Clinical Study Coordinator at the Medical School on April 2, 1990. While working, she completed her Master of Education degree from St. Mary’s University of Minnesota. In addition, she took various courses in accounting through continuing education and extension. Prior to the Department of Integrative Biology and Physiology, she worked at various positions in different departments including Residency Program Coordinator at the Department of OB/GYN, and as an Accountant at the Department of Pediatrics and later at the College of Education. Throughout the years, she has moved from being a junior accountant to principal account bearing the responsibilities of oversight of major departmental accounting. She moved to the Department of Integrative Biology and Physiology in July 2006. Yang loves her department; she enjoys working with all her colleagues; she likes challenges; and she always tries her best to produce best possible results. To Yang, the University of Minnesota is her second home.
IBP AT A GLANCE

### IBP names Phenotyping Core Director: Alessandro Bartolomucci

The IBP Phenotyping Core facility, headed up by Dr. Alessandro Bartolomucci, offers a wide range of services in the state-of-the-art CCRB and Jackson Hall facilities. For a description of services see link at: [http://www.health.umn.edu/research/resources-researchers/phenotyping-cores](http://www.health.umn.edu/research/resources-researchers/phenotyping-cores)

### IBP Excellence, continued

IBP has a lot to celebrate in terms of our local visibility and impact with annual marquee events including the Visscher Symposium, Cardio-Palooza, the Zofia Zukowska Lectureship, and many others. As we peer into the future we see great opportunity ahead in 2016. Thanks to everyone’s 100% buy-in to the IBP mission, the challenges ahead will be met and exceeded by our collective vigor and resolve. Looking forward to a great year ahead!

Sincerely,

Joseph M. Metzger
Maurice B. Visscher Endowed Chair in Physiology Professor and Head Department of Integrative Biology and Physiology

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### FACULTY

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### PUBLICATIONS

- New Publications: 62

### SPONSORED FUNDING

- ROIs: 7
- K&F Awards: 2
- Foundation Awards: 3
- Other: 1
- Total Funding: $3,462,763

### TEACHING

- Undergraduate Courses: 18
- Graduate Courses: 20
- Medical Courses: 2
- Professional Courses: 5
- Total Tuition: $5,883,828
University of Minnesota
Integrative Biology & Physiology
Jackson Hall 6-125
321 Church St. SE
Minneapolis, MN 55455

MISSION STATEMENT
Department of Integrative Biology & Physiology

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 knowledge with local, national, and global impact.

Committed to mentoring and training graduate students and fellows.
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 bio-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.

Make a Gift to IBP
The generosity of individuals who recognize the importance of our department's work is indispensable to our success. Donate online at https://makingagiftumn.edu/onlineiving. Click on Medicine and Health, type in Physiology, and complete the form. And thank you for your tax deductible donation!