Molecular & Integrative PHYSIOLOGY
A Message From Our Chair

Dear Colleagues and Friends: The legacy of our Physiology Department continues with 128 years and counting. It is with great pleasure that I take this opportunity to highlight some of the activities that have taken place during the past year. The most important part of the department is its people and on that front we have added to our faculty family several new members including Suzanne Moenter from the University of Virginia (as Professor); the husband and wife team of Michael Lehman and Lique Coolen from the University of Western Ontario in Canada (as Professors); Lisa Larkin who was in our research track faculty and is now among our tenure line faculty (as Associate Professor) and Zhiquo Chu from the University of Virginia (as Research Assistant Professor). The recruitment of Drs. Coolen, Lehman and Moenter provided a huge instant boost to the Reproductive Sciences Program (RSP) at Michigan and was facilitated in large part by Fred Karch (a pioneer in the RSP field and former director of our graduate program who recently became an active emeritus professor), Dr. Timothy Johnson (Chair of Obstetrics & Gynecology), Vasantha Padmanabhan (Professor of Pediatrics and Physiology and Principal Investigator of an NIH-funded Program Project pertaining to reproductive sciences), and Dr. Theresa Lee (Chair of Psychiatry). In addition, a joint appointment was extended to Dr. Todd Herron (Research Assistant Professor, Internal Medicine/Cardiology). Our plans are to continue to grow in a strategic manner and to recruit in the areas of cardiovascular physiology, reproductive sciences, and systems biology. Thanks to our students, faculty and staff, our national stature continues to gain prominence as evidenced by our national ranking, which has increased from 10th in 2008, to 4th in 2009 in NIH research dollars. Furthermore, recent rankings by the National Research Council showed that our department placed among the top physiology graduate programs in the nation.

Our educational activities were highlighted by the welcoming this September of 9 new first year PhD graduate students and the restructuring of the curriculum to provide a broader menu of courses for our PhD students to select from. Through efforts led by the Graduate Chair, Ormond MacDougald, with critical event planning and participation by the graduate students, the Graduate Education Fund has raised nearly $91,000 during the past two years. Another important success is the renewal of the NIH supported Systems and Integrative Biology Training Grant that is directed by John Williams, distinguished past chair (1987-2008) of the department of physiology. In addition, a proposal to establish an MS Program in Physiology was approved by our faculty and recently submitted to the Rackham Graduate School. Should all the required University and State approvals take place as anticipated, we expect to enroll our first class in September 2011. Also, we just completed the second summer of highly successful undergraduate research programs (organized by Ormond MacDougald and Dan Michele). This summer program will be expanded during the summer of 2011 to include undergraduate students with computational and engineering backgrounds who will be supported by a recently funded NIH R25 grant that will be led by Santiago Schnell. Other educational activities include a joint symposium held with the physiology department at Wayne State University (organized by Liangyou Rui on the UM side) which was very well attended and will be followed by another joint symposium during the summer of 2011; and an international symposium with Trinity College of Dublin, Ireland (organized by Ed Stuenkel on the UM side) that was also a huge success and is the beginning of what we envision will be an educational and collaborative exchange program between the two institutions involving graduate students and postdoctoral fellows.

Additional highlights of the 2009-2010 academic year include the ceremonies installing John A. Williams as the first recipient of the Horace W. Davenport Collegiate Professor in Physiology (held Feb 1, 2010) and installing Ormond A. MacDougald as the first John A. Faulkner Collegiate Professor of Physiology (held Aug 30, 2010). After 50 years of service at the UM, Dr. Faulkner decided to retire and switch to an active Emeritus status effective July 2010. As he did this, he and his wife Margaret made the first-ever large gift to our department totaling $500,000, which allowed the establishment of the Faulkner endowed Chair. Together, the Davenport and Faulkner chairs are the only two endowed chairs currently in our department and the phenomenal gift by the Faulkners is nothing but priceless and magical.

An important goal of our department is to work closely with our sister departments and units in the Medical School and University to advance our collective educational and research missions. Examples of such joint ventures include: (i) The awarding of a University of Michigan Interdisciplinary Junior Faculty Cluster-hire Initiative that involves the collaborative efforts of six Departments (Physiology, Obstetrics & Gynecology, Pediatrics, Urology, Cell and Developmental Biology, Biomedical Engineering) that will allow the hiring of 5 assistant professors into the RSP that is co-directed by Gary Smith and Mike Lehman; (ii) Working closely with Dr. Tim Johnson (Chair of Obstetrics & Gynecology) on joint recruitments to build the RSP; (iii) The joint effort with internationally renowned faculty in the Department of Medicine, Division of Gastroenterology, to successfully bring the journal Gastroenterology to the UM, and (iv) The joint efforts with the Department of Surgery Development team to assist us with philanthropy activities.

To our alumni and former co-workers, I hope you will stay in touch and visit us or visit our website, www.physiology.med.umich.edu, or by visiting our Facebook page “The Phizz”. More information pertaining to the activities briefly described above are further highlighted in other sections of the Newsletter. It is an honor and a privilege for me to be part of the Physiology Department at the UM. With very best wishes,

Bishr Omary
Physiology

Susan Brooks: 
Granted tenure with appointments in Physiology and Biomedical Engineering

Lisa Larkin: 
Appointed Associate Professor, Tenure track; with appointments in Physiology and Biomedical Engineering

Geoffrey Murphy: 
Promoted to Associate Professor with Tenure, with appointments in Physiology and Molecular & Behavioral Neuroscience Institute

Gary Smith: 
Promoted to Professor with Tenure with appointments in Obstetrics & Gynecology, Physiology, Urology and Reproductive Sciences Program

Michael Wang: 
Promoted to Associate Professor with Tenure with appointments in Neurology and Physiology

Shawn Xu: 
Promoted to Associate Professor with Tenure with appointments in Physiology and Life Science Institute

1st Row (l to r): Dolors Sans-Gili, Susan Shore, Ken Inoki, Jessica Schwartz, Bishr Omary, Lisa Larkin, Louis D’Alecy, Lei Yin

2nd Row: Tony Tong, Carey Lumeng, Larry Argetsinger, Jimo Borjigin, Christin Carter-Su, Susan Brooks, Beth Rust, Yatrick Shah, John Faulkner

3rd Row: Malcolm Low, Ormond MacDougald, Gregory Cartee, Shawn Xu, Lori Isom, Gina Poe, David Pinsky

4th Row: Daniel Michele, Anatoli Lopatin, Allen Hsu, Scott Pletcher, John Williams, Marc Herschenson, Ed Stuenkel, Geoffrey Murphy, Jose Jalife

2010 Physiology Faculty

PRIMARY FACULTY (28)
Jimo Borjigin
Susan Brooks
Christin Carter-Su
Lique Coolen
Louis D’Alecy
Ken Inoki
Lisa Larkin
Michael Lehman
Anatoli Lopatin
Malcolm Low
Ormond MacDougald
Daniel Michele
Suzanne Moenter
Richard Mortensen
Geoffrey Murphy
Bishr Omary
Scott Pletcher
Liangyou Rui
Elizabeth Rust
Linda Samuelson
Santiago Schnell
Jessica Schwartz
Yatrick Shah

Edward Stuenkel
Michael Sutton
John Williams
Xian-Zhong (Shawn) Xu
Lei Yin

RESEARCH FACULTY (5)
Lawrence Argetsinger
Zhiguo Chu
Nancy Linford
Dolors Sans Gili
Xin (Tony) Tong

JOINT FACULTY (35)
David Antonetti
Justus Anumonwo
Peter Arvan
Robert Bradley
Steven Britton
Frank Brosius
Charles Burant
Gregory Cartee
Peter Dempsey
Thomas Gardner
Gary Hammer

Todd Herron
Mark Hershenson
Bret Hughes
Ao-Lin (Allen) Hsu
Lori Isom
José Jalife
Richard Keep
Carey Lumeng
Ralph Lydic
Ram Menon
Juanita Merchant
Martin Myers
Chung Owyang
Vasantha Padmanabhan
Gina Poe
David Pinsky
Donald Puro
Alan Saltiel
Susan Shore
Diane Simeone
Gary Smith
Michael Wang
Margaret Westfall
Matthew Wishart

(Our Joint Faculty come from 14 departments/units)

ADJUNCT FACULTY (9)
Xuequn Chen
Mario Delmar
Joan Keiser
Tatiana Kostrominova
Nam-On Ku
Warren Lockette
Joseph Metzger
Thomas Morrow
Tadataka Yamada

EMERITUS FACULTY (10)
John Faulkner
Stevo Julius
Fred Karsch
Landis Keyes
Richard Malvin
John McReynolds
Lester Rutledge
Jurgen Schnermann
James Sherman
Arthur Vander
Faculty Awards & Honors 2009-2010

Frank C. Brosius:
Co-PI on NIH R24 grant “Integrated Systems Biology Approach to Diabetic Microvascular Complications”

Charles Burant:
Awarded an NIH P30 Nutrition Obesity Research Center. Several Physiology Faculty are involved including Malcolm Low, who is the Director of the Animal Phenotyping Core and Adjunct Faculty; and Martin Myers, who is leading the Pilot and Feasibility Grant Program

Lou D’Aleyc:
2010 Basic Sciences Teaching Award in Physiology

Malcolm Low:
2011-2016 Associate Editor for Gastroenterology

Carey Lumeng:

Ormond MacDougald:
2010 John A Faulkner Collegiate Professor of Physiology
2010-2014 NIH (permanent member): CADO Study Section; NIDDK

Martin Myers:
2009 Outstanding Scientific Achievement Award, The Obesity Society
2010 Outstanding Scientific Achievement Award (Lilly) Award, American Diabetes Association; Editorial Board, Journal of Endocrinology; Associate Editor, American Journal of Physiology- Endocrinology and Metabolism; Editorial Board, Molecular Endocrinology; Editorial Board, Endocrinology; NIH IPOD study section; Board of Consulting Editors, Journal of Clinical Investigation; Guest Editor-in-Chief, Frontiers in Neuroendocrinology Special Issue

Vasantha Padmanabhan:
2009-2014 NIH/NICHD P01 HD44232 Prenatal programming of reproductive health and disease. Vasantha is the PI of this program project that provides nine million dollars over five years.

Scott Fletcher:
2010-2014 Ellison Medical Foundation Senior Scholar in Aging Award for “Molecular dissection of neurosensory circuits that specify health and longevity in Drosophila”
2010-2015 R01 renewal for “Mechanisms of Dietary Restriction in Drosophila”

Alan Saiteli:
2009-2010 Awarded Goodman and Gilman Award, The American Society for Pharmacology and Experimental Therapeutics
2009 Corresponding author of high profile manuscript co-authored with Carey Lumeng and colleagues

Linda Samuelson:
2011-2016 Gastrointestinal Editor for Annual Review of Physiology, and Associate Editor for Gastroenterology
2010 Selected as Associate Director of the Center for Organogenesis

Maria Dolors Sans Gili:
2009-2010 Award from National Pancreas Foundation to study the: “Role of pancreatic digestive enzymes synthesis during the development of acute pancreatitis”

Santiago Schnell:
2010-2015 Awarded an NIH five year Educational R25 grant to train summer undergraduate students.
2010-2013 Selected as a James S. McDonnell Foundation Awardee

Jessica Schwartz:
2010 Editorial Board of Endocrinology
Member of NIGMS Bt-R Study Section

Diane Simeone:
2010 Elected to the Institute of Medicine

John Williams:
2010 Horace W. Davenport Collegiate Professor of Physiology
2010 Distinguished Service Award from the Association of Chairs of Departments of Physiology
2011-2016 Associate Editor for Gastroenterology

Shawn Xu:
2009 Young Investigator Award, Chinese Biological Investigator Society

New Primary Faculty

Zhiguo Chu
“My research interests focus on the central mechanisms underlying episodic gonadotropin-releasing hormone secretion.”

Michael Lehman
“We are working at the interface of the brain, behavior and reproduction to understand basic systems that control neuroendocrine function and circadian rhythms, and their role in health and disease.”

Suzanne Moenter
“Our goal is to understand how the brain regulates fertility through the study of gonadotropin-releasing hormone neurons, their inputs and local circuits.”

New Joint Faculty

Liqua Coolen
“Our research focus is on spinal control of sexual reflexes as well as on the neural regulation of reward behaviors and how reward experience alters brain function and vulnerability for drug abuse and depression.”

David Antonetti
“Our laboratory focus is on the signaling pathways leading to the phosphorylation of the tight junction protein occludin and has provided important new insights about the role in the regulation of the blood-retinal barrier function.”

Thomas Gardner
“Our research focus is on the study of basic mechanisms which may initiate diabetic retinopathy, with particular focus on regulation of tight junction proteins.”
Ormond A. MacDougald:  
John A. Faulkner Collegiate Professor in Physiology

In 2009, John Faulkner and his wife, Margaret Faulkner, made a substantial gift of $500,000 to the University of Michigan Medical School to help establish the John A. Faulkner Collegiate Professorship in Physiology. Their gift, and additional generous donations from faculty, former trainees and friends of the Faulkners, within and outside the Department of Physiology, will also help to establish the John and Margaret Faulkner Lectureship and Educational Fund. Both funds honor an ageless man with a diverse career as athlete, coach, war hero, teacher and scientist. His research has resulted in many contributions toward the understanding of the structure and function of skeletal muscles and their response to exercise and aging. John’s life is truly amazing and can easily be made into a movie or written as a best-seller book, which we are hoping John will pen. How often will one encounter a highly accomplished scientist who was also a World War II hero and fighter pilot who survived being shot down, returned to Canada at the end of the War to go to school and then coach the men and women’s Canadian Olympic swimming team. John’s amazing 50-year career at the UM started in 1960, when he was hired by the School of Education to establish an exercise physiology laboratory.

At Dr. Faulkner’s side throughout his career has been his wife, Margaret Faulkner. Passionate about music, she is a skilled classical pianist and a piano teacher trained at the Toronto Conservatory of Music. She also travels the world as an international figure skating judge and was presented with the Distinguished Official Award by the U.S. Figure Skating Association in 2009.

It is indeed fitting that the first Faulkner Collegiate Chair is now held by not only a highly accomplished scientist, Ormond MacDougald, but also a fellow Canadian to John Faulkner. Ormond is the current Chair of the Physiology Graduate Program and an internationally recognized investigator for his work on adipocyte differentiation and metabolism. Ormond’s stature in the field is evidenced by his service as a member of the Cellular Aspects of Diabetes and Obesity NIH Study Section and membership on the editorial boards of several prestigious Journals. He has received the Medical School’s Achievement in Basic Science Research Award in 2005, as well as one of the American Physiological Society’s highest honors, the Henry Pickering Bowditch Award. The Chair inaugural ceremony was hosted by Dean James Woolliscroft with a full auditorium of faculty, friends and students, and was also attended by Ormond’s family (kits and all) and the Faulkner family, with a serenade by James Ashton-Miller and Mark Palmer to John, Margaret and Ormond.

We are proud of Ormond for this well-deserved honor. We are also indebted to the overwhelming generosity of John and Margaret Faulkner, and salute John for his unmatched service to our department, the UM and the Physiology field.

Kevin McCully received his PhD from the Department of Physiology in 1985 (finally), working on ‘exercise induced muscle injury in mice’ with John Faulkner. He then did a postdoc with Britton Chance and Jack Leigh in Biochemistry and Biophysics at the University of Pennsylvania. Following a 9 year stint in Geriatric Medicine as a research assistant professor with the now defunct Allegheny University of the Health Sciences, he took a job in the Kinesiology Department at the University of Georgia in 1999. He is now a Professor with both teaching and research duties. Following in John’s footsteps, he routinely mentors 8-10 undergraduate students in his lab at any given time. His research focuses on noninvasive assessments of muscle metabolism and blood flow using 31P magnetic resonance spectroscopy, near infrared spectroscopy, and Doppler ultrasound. The picture shows a colorful Kevin happily testing out Georgia’s 3T multinuclear magnet. He has an ongoing project to evaluate the influence of electrical stimulation induced resistance training on skeletal muscle function and the onset of diabetes in individuals with spinal cord injuries. Kevin proudly wears his MIP t-shirt, and fondly remembers asking Horace Davenport for permission to make ‘HWDemon’ t-shirts for the department’s softball team.

Karen Hinkle, working under the mentorship of Linda Samuelson, obtained her Ph.D. from the Department of Physiology in 2002. Her dissertation research focused on the investigation of gastric acid secretory mechanisms using genetically-engineered mouse models. After a one year post-doctoral fellowship in Dr. Samuelson’s lab, Dr. Hinkle moved east to join the Biology faculty at Norwich University, a small primarily undergraduate college nestled in the Green Mountains of Vermont. Her courses at Norwich include Cell Biology, Modern Laboratory Procedures, and her all-time favorite, Physiology. Now an Associate Professor at Norwich, Dr. Hinkle’s research involves the investigation of DNA damage and repair mechanisms with exposure to the pesticide 3-trifluoromethyl-4-nitrophenol using S. cerevisiae as a eukaryotic model system. Dr. Hinkle has proudly mentored 18 undergraduates in her laboratory since 2003, many of whom have gone on to graduate or medical school. Dr. Hinkle is married to Ray Mikus, a real estate agent and Michigan State University alum; together with their young daughters Josephine and Willoughby they host an annual MSU vs. UM football tailgate party which is now legendary in Vermont.
Graduate Students

Thanks to the hard work of the graduate committee and coordinator, Michele Boggs, 2009-2010 was a very successful year for the graduate program. I would like to emphasize that our greatest recruiters have been our “friends” of Physiology—particularly our alumni, former faculty, and former postdoctoral fellows. Thank you for encouraging your best and brightest to consider MIP for their graduate studies. More can be learned about the exciting work, accomplishments and research interests of our graduate students by visiting our webpage: http://sitemaker.umich.edu/physgrad/home, or by visiting our social networking group on Facebook called The Phizz.

One of the major accomplishments this year was to update the curriculum to allow more flexibility for students to take electives in their research area. On a lighter note, at the Fall Picnic, the faculty (again) won the annual faculty-student softball game, this year by 14 to 2. Of the faculty, Scott Pletcher’s performance in left-center field was particularly impressive and he was unanimously voted as MVP of the faculty squad!

The graduate students continue their efforts to raise funds for their endowment entitled “Graduate Education Fund in Physiology.” Their initial goal is to raise $100,000 in three years, which will then be doubled by a match from the Medical School. Through sponsorship for the Dexter to Ann Arbor Run, sales of departmental T-shirts, foundation and industry support, and generous faculty gifts, they have raised nearly $91,000 over the past two years. With your continued support, we expect that they will achieve their goal during 2011. At that point, interest generated by the endowment will be disbursed to support priorities such as research grants for high impact/high risk experiments, small equipment, travel expenses for scientific meetings and stipends. Our ultimate goal is to raise a total of $500,000 and take advantage of matching funds by the medical school, which will be distributed at $100,000 intervals. The endowment will propel the future generations of physiology researchers and teachers, many of whom will study the mechanistic underpinnings of human maladies such as cancer, heart disease, diabetes, and obesity, translate these findings into bedside treatments, as well as train and educate future generations of our scientific community.

Ormond MacDougald

What was your greatest physiology moment of 2009/2010?

“My greatest personal moment in physiology was defending my preliminary proposal on May 2010. Defending my preliminary proposal allowed me to share my ideas with the department and overcome my fear of public speaking. Being a PhD candidate in Physiology thus far has been an amazing experience. The main reason I decided to join Physiology was the interdisciplinary and collaborative opportunities that were prevalent throughout the department. I am currently collaborating with Dr. Marc Hershenson, a specialist in pediatric pulmonary. Studying the anti-inflammatory properties of carbon monoxide in a neonatal model of Bronchopulmonary Dysplasia.”

Anuli Anyanwu

“I have to say that my best physiology moment of the past year was my thesis defense day in April. It was uplifting to get so much positive feedback and support from my “physiology family” as well as my actual family after the weeks of isolation and writing! Also, getting to keep all the extra Potbelly oatmeal chocolate chip cookies that were served at my public defense certainly contributed to the good feelings.”

Kelli VanDussen

Back row: Halina Chkoourko, Bryan Holtz, Jon Mowers, Adam Bree, Mark Bolinger, Jacob Merterms, Jim MacKrell, Matthew Campbell, Donel Soqua, Jordan Wright, Joel McDade, Michael Doche, Marean UhM Middle row: Kasey Hoey, Katherine Overmyer, Jun Young Hong, Beverly Piggott, Jessica Gumerson, Abbie Renoux, Alexis Carulli Front row: Amy Sutton, Kristen Ruka, Corinne Weisheit, Ann Marie Macara, Asma Al Menhali

Whirly Ball outing

“The Phizz” Volleyball Team
2009-2010 Student Awards & Honors

Anuli Anyanwu (Pinsky Lab):
Systems and Integrative Biology Training Grant; Rackham Graduate School Research Grant

Amy Baek (Pinsky Lab):
Systems and Integrative Biology Training Grant

Matthew Barnabei (Metzger Lab):
Marzolf Training Grant (University of Minnesota)

Matthew Campbell (Michele Lab):
Rackham Graduate School Travel Grant

Wei-Chung (Daniel) Chiang (Hsu Lab):
Rackham Graduate School Travel Grant

Michael Doche (Carter-Su Lab):
Winner 2010 ENDO Presidential Poster Competition; Rackham Graduate School Travel Grant

Jessica Gumerson (Michele Lab):
Rackham Graduate School Research Grant; 2010 John A. Williams Award for Outstanding Graduate Student Service

James MacKrell (Cartee Lab):
Rackham Graduate School Research Grant; Rackham Graduate School Travel Grant

Joel McDade (Michele Lab):
Systems and Integrative Biology Training Grant; Rackham Graduate School Research Grant; 2010 Arthur J. Vander Outstanding Graduate Student Teaching Award

Jonathon Mowers (Saltiel Lab):
American Heart Association Fellowship; NIH pre-doctoral NRSA

Ryan O’Connell (Anumonwo Lab):
Rackham Graduate School Research Grant; Rackham Graduate School Travel Grant

Beverly Piggott (Xu Lab):
Vision Research Training Grant

Abbie Renoux (Sutton Lab):
Systems and Integrative Biology Training Grant; 2010 John Bean Fellow for Academic Excellence

Donel Sequa (Cartee Lab):
NIA Predoctoral Aging Research Training Grant

Kelli VanDusseren (Samuelson Lab):
University of Michigan Graduate Teacher Certificate; American Gastroenterological Association Student Abstract Prize

Eneida Villanueva (Myers Lab):
Presidential Management Fellowship Program

Jordan Wright (Arvan Lab):
Systems and Integrative Biology Training Grant

2010 MIP Summer Fellowship Program
(Directed by Santiago Schnell)

The purpose of our NIH funded R25 program “Interfacing computation and engineering with digestive and metabolic physiology” is to attract undergraduate and graduate students - who are majoring in engineering, informatics, mathematics, physics and computational disciplines - to careers in the areas of digestive disease and metabolism and their related health disorders. The program includes two components. The first is to teach the students computational applications related to NIDDK areas of research interests such diabetes, obesity and gastrointestinal cancers. This will be done through our course Physiology 520, which will be open to graduate students and upper level undergraduates in quantitative subjects. We believe that our course will attract graduate students, who have not selected a mentor, to pursue PhD projects related to digestive disease and metabolism. The second component is to provide 8 summer fellowships for engineering, mathematics, physics and computational students to gain laboratory experience in the research areas of digestive or metabolic physiology. Students will join our ongoing, successful MIP summer fellowship program. They will attend the noon lecture series that introduces them to multiple aspects of physiology-related research including the use of different model organisms, ethical issues in laboratory research, and career opportunities in biomedical sciences. The research experience will culminate in a half-day symposium that includes oral presentations given by the students summarizing their research projects. We expect our program will encourage quantitative inclined students not only to pursue a research career but also to consider the exciting opportunities related to solving health problems involving digestive diseases and metabolic disorders.

Carolyn Buller, PhD
Mentor: Frank Brosius, M.D.
Thesis: Role of GLUT1 in the Mammalian Target of Rapamycin Pathway: Mechanisms of Regulation
Current Position: Postdoc, University of Michigan, Subramaniam Pennathur Lab, Internal Medicine-Nephrology

Gwendolyn Louis, PhD
Mentor: Martin Myers, M.D., Ph.D.
Thesis: Mapping the Neural Mechanisms by Which Leptin Regulates Distinct Physiological Functions
Current Position: Postdoc, North Carolina State EPA

Deepi Nagarkar, PhD
Mentor: Marc Hershenson, M.D.
Thesis: Rhinovirus Induced Airway Inflammation in Naive and Allergic Mouse Models
Current Position: Postdoc, Northwestern University, Division of Allergy and Immunology

Kelli VanDusseren, PhD
Mentor: Linda Samuelson, Ph.D.
Thesis: Notch-Regulated Mechanisms of Epithelial Cell Fate Selection in the Intestine
Current Position: Postdoc, Washington University St. Louis

Eneida Villanueva, PhD
Mentor: Martin Myers, M.D., Ph.D.
Thesis: Unraveling Novel Leptin-Dependent Signaling Pathways in the Basomedial Hypothalamus
Current Position: Postdoc, University of Michigan, Dr. Mariana Kaplan

Qiong Wang, PhD
Mentor: Marc Hershenson, M.D.
Thesis: Role of Double-Stranded RNA Pattern Recognition Receptors in the Response to Rhinovirus Infection
Current Position: Postdoc, Rockefeller University, lab of Dr. Vincent Fischetti
Post-Doc Corner

November marks the second anniversary of the MIP Post-doctoral Society. Over 30 research fellows are currently affiliated with MIP. Under the leadership of President Kyle Sousa (MacDougald Lab) and Vice-President Antionette Williams (Stuenkel Lab), MIP post-doc meetings were coordinated and organized to provide a venue for fellows to socialize, network, and present their research to colleagues. The meeting format remained unchanged since last year and included lunch, data, and discussions. Most speakers acknowledged these presentations were positive experiences. Perhaps most importantly, these meetings provided a great opportunity for postdocs to exchange technical expertise, reagents, share professional advice, and offer constructive criticisms.

This past year marked a flurry of departmental activities where MIP postdoctoral fellows participated in large numbers. MIP postdoctoral society members participated in the 1st Wayne State-University of Michigan Joint Physiology Symposia in Detroit this past August. MIP was well represented with Drs. Antionette Williams and Kyle Sousa as selected postdoctoral speakers. Notably, research fellows Drs. Jung-Eun Lee (Pletcher Lab) and Sujith Weerasinghe (Omary Lab) were awarded top honors for their exceptional poster presentations. The Physiology department also hosted John Lowe, a Senior Director of Pathology at Genentech. Dr. Lowe’s presentation discussed industrial opportunities for Ph.D. scientists at Genentech and was heavily attended. Afterwards, MIP postdocs were privy to meeting with Dr. Lowe over a luncheon where he offered valuable advice for those fellows contemplating the industrial career path. This Fall, also marked the first International Exchange and Research Symposia between Trinity College School of Medicine and MIP. The MIP postdoctoral society is still actively negotiating its invited external speaker. Currently, we are awaiting word on whether Professor Mark Montminy (Salk Institute) can attend. Dr. Montminy’s lab first identified the cDNA clones for the cAMP response element binding protein (CREB) in 1989. His recent work has focused on the role of the CREB/TORC pathway in insulin sensitive tissues.

This month will also mark a transition period where a new MIP Postdoctoral Society President and Vice-President will be selected. This year, departmental fellows overwhelmingly nominated both Yanan Hou (Williams Lab) and Natasha Snider (Omary Lab) as leaders to represent them in the upcoming year. It is our hope that post-docs continue these important meetings and activities. Finally, the MIP post-docs would like to extend a message of thanks to Department Chair, Bishr Omary, and faculty for encouraging the continued success of our departmental post-doc society.

Kyle Sousa, President
Antionette Williams, Vice-President

First UM-WSU Physiology Symposium

The Department of Molecular & Integrative Physiology at UM and the Department of Physiology at Wayne State University (WSU) jointly organized the first UM-WSU Physiology Symposium, which was held at WSU School of Medicine Margherio Scott Hall on August 20, 2010. The symposium was organized by Drs. Javier Sala Mercado (WSU) and Liangyou Rui (UM). Dr. Jian-Ping Jin, Chair of the Department of Physiology, WSU, and Dr. Valerie Parisi, Dean of the Medical School at WSU provided the opening remarks. There were 150 researchers in attendance, which included 74 UM students, postdoctoral fellows, research associates, and faculty. UM researchers presented 30 of the 54 posters, among which eight were selected by a WSU three-judge panel to compete for the best poster awards. From the UM, Michael Williams, Ryan A. Frieler, Sujith V.W. Weerasinghe, and Jung-Eun Lee won four of the eight poster awards. UM researchers, James MacKrell (Ph.D. student), Beverly Piggott (Ph.D. student), Antionette Williams (postdoctoral fellow), Kyle Sousa (postdoctoral fellow), Daniel Michele (faculty), Lei Yin (faculty) and Yatirik Shah (faculty) presented exciting talks. A similar number of WSU researchers also gave research presentations. Drs. Christin Carter-Su, Anatoli Lopatin and Malcolm Low evaluated the abstracts/posters from WSU and selected four WSU winners of the best posters. The second UM-WSU Physiology Symposium will be held in Ann Arbor on August 26, 2011; details will be available on our website as the date approaches.
New International Exchange Program

A new academic and research collaboration between the University of Michigan and Trinity College, Dublin (TCD), Ireland was signed on behalf of the University of Michigan in late 2009 by Senior Associate Dean for Education and Global Initiatives Dr. Joseph C. Kolars and former Provost Dr. Teresa A. Sullivan. This collaboration was initiated by the Department of Molecular & Integrative Physiology but also includes the umbrella graduate program at the University of Michigan, the Program in Biomedical Sciences (PIBS). It enables PhD students and post-doctoral fellows from both institutions to conduct research at the partner university as part of their training. This is an exciting development for the Department, and it is also centered on the Medical School’s rapidly evolving initiative in Global Medicine and International Multidisciplinary Research. TCD has a long tradition of excellence in scholarship and research and is an international leader in postgraduate education, with over 500 registered postgraduate students.

To inaugurate this exciting collaboration, Physiology organized a research symposium on October 7th, 2010 entitled “Molecular & Systems Physiology International Exchange and Research Symposium I: Perspectives from Trinity College Dublin and University of Michigan.” The symposium was supported by PIBS, the Endowment for the Basic Sciences and the Neurosciences Program. Attending the event from TCD were Veronica Campbell, Dean of Graduate Studies and Professor of Physiology and John Gormley, Director of Postgraduate Teaching and Learning and Senior Lecturer in Physiotherapy. Additional faculty attending from TCD included Kumlesh Dev (Associate Professor of Physiology and Director, MSc Neuroscience Program), Neil Docherty (Lecturer, Department of Physiology), Juliette Hussey (Senior Lecturer, Department of Physiotherapy), Marina Lynch (Professor of Cellular Neuroscience), Barry McMahon (Head of Department Medical Physics and Clinical Engineering), and Richard Reilly (Professor and Director of the Trinity Centre for Bioengineering). Drs. Kolars and Victor DiRita, Associate Dean for Graduate and Postdoctoral Studies, provided introductory greetings and reflected on the value of global research collaborations. The symposium included 15 research talks, alternating between UM and TCD faculty, and focused on research areas complementary to both institutions, Neuroscience, Gastrointestinal Physiology, Bioengineering, and Exercise & Muscle Mechanics. The symposium included a poster session, with over 60 research presentations from the UM and TCD. A dinner held at the Horace Rackham School of Graduate Studies capped the symposium and was highlighted by John Gormley’s visual presentation and tour of Trinity College, Dublin and the beauty of Ireland.

Capitalizing on the presence of the Trinity College faculty, October 8th was filled with Graduate curriculum discussions, meetings with graduate students and several faculty groups constituting our main research foci. The late afternoon included a brief walking tour of campus and a stop at a local microbrewery prior to dinner. Concluding their visit was attendance of the UM-Michigan State football game and tailgate festivities. The UM football loss was offset by a wonderful dinner at Bish Omary’s home and live Blues Music. Special thanks go to Ed Stuenkel, Linda Busha and Sarah Lawson for organizing the symposium and making it such a huge success.

Gastroenterology comes to Michigan

We are delighted to announce that the journal Gastroenterology, which is the premier journal in digestive disease and health related research, will be coming to the University of Michigan. The journal, with an impact factor of 12.9 in 2009, rotates its editorial team every 5 years, and a Michigan team that includes faculty from the Department of Molecular & Integrative Physiology and the Division of Gastroenterology in the Department of Medicine submitted a successful competitive application to host the journal starting July 2011 through June 2016. The Michigan team includes 9 of 16 Board of Editors (BOE) members and 11 of 15 Special Section Editors, with the remaining team of editors coming from other major institutions in the US and abroad.

The UM editors who will serve among the BOE team include faculty from the departments of Medicine, MIP and Surgery. Most of the Michigan BOE hold joint appointments in 2 of these 3 departments, and this joint effort is a reflection of the collegial and collaborative environment within the UM and among these 3 departments. The UM-based team includes Bishr Omary (Editor; MIP/Medicine); Chung Owyang (Senior Associate Editor and Chief of Gastroenterology; Medicine/MIP); John Carethers and Anna Lok who are Chair of Medicine and Director of Clinical Hepatology, respectively (Senior Associate Editors; Medicine); Malcolm Low, Linda Samuelson, and John Williams (Associate Editors; MIP/Medicine); Diane Simeone (Associate Editor; Surgery/MIP) and William Hasler (Associate Editor; Medicine). Needless to say, it is a privilege and an honor for our department to play a major role in bringing such a prestigious journal to the UM.

Systems Biology Symposium

On Dec 1 2009, MIP had the pleasure and honor of hosting the University of Michigan Systems Biology Symposium. The symposium was co-sponsored by the Center for Computational Medicine & Bioinformatics and the Endowment for the Basic Sciences with participation by the Departments of Biomedical Engineering and Mathematics. The symposium had 165 registered participants, which included colleagues from Michigan State University, Van Andel Institute, Western Michigan University, Kalamazoo College, Eastern Michigan University and Wayne State University. In addition, we had 37 very lively posters. This event was organized by Santiago Schnell and John Williams.

We credit our success to both our extramural and intramural speakers. We were delighted to have the participation of Drs. Douglas Lauffenburger (Biomedical Engineering, MIT) and Denis Noble (Physiology, University of Oxford), who are two of the most recognizable figures in the systems biology community.

We had the opportunity to learn about the exciting Music of Life, how genetic and biochemical pathways are controlled by fuzzy logic, the interplay of electrophysiology and circadian rhythms, new systems biology approaches to discover cancer drug targets, how protein load is sensed in the endoplasmic reticulum and learn about the genomics of microbial communities.

The Symposium has led to the establishment of a Systems Biology Jounal Club, organized by Santiago Schnell. A second follow-up symposium is planned for April, 2011.


~With very mixed emotions, we congratulate Mark Opp for accepting the position of Vice Chair of Anesthesiology at the University of Washington, Seattle!

~We would like to share some photos of Dr. John Williams receiving the Horace Davenport Professorship in February, 2010. Congratulations John!

Mark your Calendars!
~ April 14, 2011 - Systems Biology Symposium
~ August 26, 2011 - UM-WSU Joint Symposium at UM

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David F. Bohr Collegiate Professorship in Physiology
This endowment was established in honor of Dr. David Bohr and the decades of enormous contributions to our department and the field of physiology at large. Physiology will match donations to reach the total of $500,000 that is needed to establish the David F. Bohr Collegiate Chair of Physiology. To date, we have raised nearly $16,000 ($32,000 with matching).

Graduate Education Endowment Fund
The Graduate Education Fund was established in the Fall of 2008. Donations will be matched at $100,000 increments by the Medical School Dean’s Office up to a total of $500,000 to allow reaching our goal of $1,000,000. The income from this endowment will be used exclusively to support graduate education in the department. We have raised nearly $91,000 during the first two years, so we are very close to reaching our goal.

John A. Williams Collegiate Professorship in Gastrointestinal Physiology
The John A. Williams Collegiate Professorship in Gastrointestinal Physiology was established in the Fall of 2008. This will honor the 21 year service that John Williams gave to the department as its chair, and his contributions to the field of pancreatic physiology. Funds raised by the department will be matched by the Medical School Dean’s Office up to $250,000 for a total endowment of $500,000. We are very excited that we are now close to our goal because of the generous contributions that have so far totaled nearly $210,000.

“If you would like to make a contribution, please enclose a check in the envelope provided. Please make checks payable to the University of Michigan and place in the notes section which fund you would like to contribute to. If you would rather contribute by credit card, you may visit www.physiology.med.umich.edu, click on the “Give Online” button in the top, right hand corner and this site will allow you to choose one of these funds to donate to. If you have any questions regarding the above funds, please contact Ann Boyd-Stewart at aboydst@med.umich.edu or contact Bishr Omary at mbishr@umich.edu.

The funds constitute a gift for endowment, and distribution from the funds will be made in accordance with the University’s then existing endowment distribution policy.