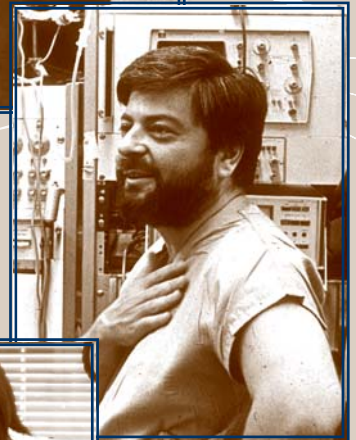
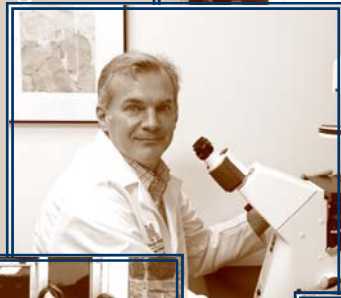
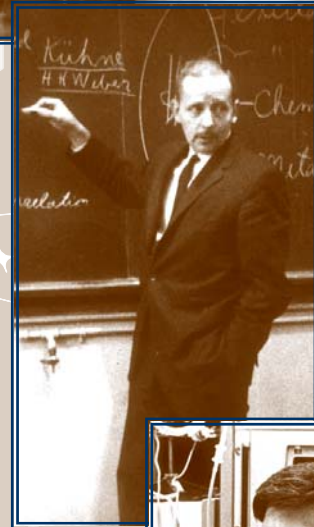
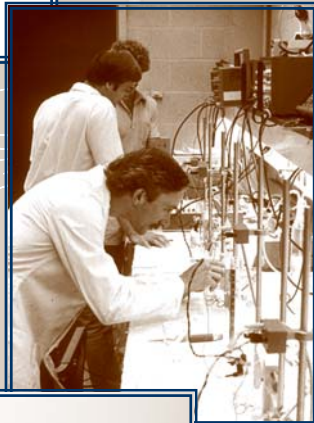


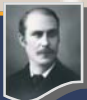
MOLECULAR & INTEGRATIVE

# PHYSIOLOGY

*Celebrating 130 Years of Excellence!*



University of Michigan  
Physiology Established



Henry Sewall, Ph.D.  
First Chair of Physiology  
(1882-1889)



William H. Howell, Ph.D.  
Second Chair of Physiology  
(1889-1892)



Warren P. Lombard, Ph.D.  
Third Chair of Physiology  
(1892-1923)

1882

1889

1892

## A Message From Our Chair



Dear Friends: The legacy of our Physiology Department continues with 130 years and counting. We celebrated our 130<sup>th</sup> anniversary during a dinner gala held at Greenfield Village on October 5, 2012 as part of celebrating a visit by friends at Trinity College, Dublin, who we hosted for the third joint research symposium. Special thanks go to Dr. Ed Stuenkel who worked closely with Sarah Lawson to organize a highly successful symposium that included, in

addition to outstanding research presentations, “Data Blitzes” given by 27 energetic PhD students from Physiology, Pharmacology and Neuroscience at the University of Michigan as well as the four visiting students from Trinity College. We anticipate that several productive collaborations will be forthcoming as a consequence of Ed’s efforts coupled with those of Professor John Gormley who led the delegation from Trinity.

Writing this annual column gives me the opportunity to reflect on recruitment, educational and celebratory activities and milestones that have taken place during the past year. In terms of recruitment, we are very fortunate to be able to recruit Drs. William Rainey and Carol Elias. Bill joined us from Georgia Health Sciences University as professor of physiology and medicine and will play an essential role in the adrenal oncology program at the University of Michigan. Bill, affectionately called *Mr. Adrenal*, will become the inaugural Jerome Conn Professor and Director of Endocrine Neoplasia Basic Research and is an internationally recognized expert in the area of adrenal biology and adrenal tumor formation. He has published more than 160 original peer-reviewed manuscripts, and is currently serving as the Managing Editor of the Americas for the journal *Molecular and Cellular Endocrinology*. Carol is joining us from the University of Texas Southwestern as associate professor with tenure. She will play an integral role in the reproductive sciences program at the University of Michigan. She is an authority in the area of systems neuroscience and neuroendocrinology, particularly as related to brain pathways linking metabolism and reproduction, with more than 55 original peer-reviewed publications. We also welcome Dr. Hector Valdivia, Professor of Internal Medicine who holds a joint appointment with us and will work closely with Drs. David Pinsky and Jose (Pepe) Jalife and other leaders in the Cardiovascular Center. Hector is the Frank N. Wilson Professor of Internal Medicine and, together with Pepe, co-directs the Center for Arrhythmia Research. In addition, Dr. Tim Houchin will join us as a new Lecturer. Tim recently completed his PhD at Michigan State University and will be assisting Drs. Beth Rust and Mike Ferrari in teaching the MS classes and in new course development. The MS program began its second year this September, with a class size of 25 MS students, after kicking off a very successful first year class of 17 students, thanks to the hard work by Beth and Mike who are supported by Angie Tucker.

Aside from our PhD and MS programs, our undergraduate summer programs that are overseen by Ormond MacDougald, Santiago Schnell, Jimo Borjigin and Dan Michele continue to flourish. We are fortunate that our summer program is supported by two NIH R25 grants, one

from NHLBI that is overseen by Jimo to support training of underrepresented minority students, and the second from NIDDK that is overseen by Santiago to support training of students with computational and engineering backgrounds.

The successes of our department are reflected by recognitions and honors that are received by our students, postdoctoral trainees and faculty. For example, Beverly Piggott, who completed her PhD work with Shawn Xu received the highly prestigious national award, the 2012 Harold M Weintraub Graduate Student Award. Beverly recently moved to UCSF to carry out postdoctoral training on *Drosophila* neurobiology with the HHMI lab of Dr. Yuh-Nung Jan. We are also very proud of Will Cawthorn, President of our department Postdoctoral Society and a postdoctoral fellow in Ormond MacDougald’s lab, who was awarded a Lilly Innovation Award. Furthermore, our well-deserved faculty honors, include numerous teaching awards and recognitions which are highlighted in this Newsletter. Among the faculty accolades, Ed Stuenkel was selected as the Director of the Neuroscience Graduate Program and Sue Moenter was selected to work with Gary Smith as co-Director of the Reproductive Sciences Program. Another important highlight honors Christin Carter-Su during a ceremony planned for November 26 when she will be installed as the first recipient of the Henry Sewall Professor of Physiology. These endowed chairs are an important way to recognize the outstanding performance of our current and emeritus faculty. This also enables recipients to maintain their laboratories in times of uncertain funding. Current honorees include John Williams (Horace Davenport Chair), Linda Samuelson (John Williams Chair) and Ormond MacDougald (John Faulkner Chair). To continue this legacy we are actively raising funds for the David Bohr and Fred Karsch chairs and have been making good progress because of the support and generous gifts we have been receiving from you. Among our plans for the coming year are to recruit an established cardiovascular physiologist, explore the development of an undergraduate major in physiology together with our colleagues at LS&A, enhance our student mentoring via new guidelines introduced by our PhD graduate committee and the PhD graduate program chair Scott Pletcher, continue to develop our MS program and summer undergraduate student programs, and work to enhance our research portfolio. Another new effort is to establish an Alumni Committee that includes alumni, faculty, postdoc and student representation; and start an annual alumni seminar presentation. This alumni effort was recently started by forming a committee led by Ormond MacDougald with Linda Samuelson and Dan Michele as members and additional members to be invited to join during the coming year.

To our alumni and former co-workers and colleagues, I hope you will stay in touch. Please take the time to visit us or browse our website, [www.physiology.med.umich.edu](http://www.physiology.med.umich.edu). More information pertaining to other activities as well as 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 University of Michigan.

With very best wishes,  
Bishr Omary

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William H. Howell,  
President APS (1905–1910)



Use of Lombard’s  
“muscle harp”

Warren P. Lombard,  
President APS (1919–1920)



# Christin Carter-Su: First Recipient of the Henry Sewall Professorship in Physiology



Dr. Christin Carter-Su was named as the first recipient of the *Henry Sewall Professorship in Physiology* effective June 1, 2012. The chair installment celebration will take place on November 26, 2012. Henry Sewall was the founding chair of the physiology department at Michigan (1882-1889), so it is most fitting for us to establish a chair named after our founding chair.

As most of our physiology friends know, Christy is a renowned investigator in the field of endocrinology. She has received numerous prestigious awards and honors including the UM Faculty Recognition Award (1995), the UM Sarah Goddard Power Award (1999), the Roy O. Greep Lecture Award from the Endocrine Society for outstanding contributions to research in endocrinology (2000), the Bodil Schmidt-Nielsen Distinguished Mentor and Scientist Award from American Physiological Society (2004), the Rackham Distinguished Faculty Achievement award from UM (2011), and election into the American Association for the Advancement of Science (2011).

Christy joined the UM in 1981 as an assistant professor. She received her PhD in biophysics in 1978 from the University of Rochester. She then received a Juvenile Diabetes Foundation Postdoctoral Fellowship and carried out postdoctoral training with Dr. Michael

Czech in the Division of Biology & Medicine at Brown University. At Michigan, Christy rose through the ranks to Professor of Physiology in 1992 and has served as Associate Director of the Michigan Diabetes Research and Training Center (MDRTC) since 1997. Her leadership and efforts have been critical to the continued funding and programmatic success of the MDRTC.

Christy has had an illustrious research, mentoring and teaching career. Her work focuses on studying growth hormone receptor structure and signal transduction pathways, particularly the pathways involving JAK tyrosine kinases. She has played leadership roles in several national and international venues, and is a recipient of an NIH MERIT award as further testament to her stature in the field of endocrine signal transduction. She has participated in nearly 150 PhD dissertation committees and PhD qualifying exams, and has mentored numerous undergraduate and graduate students, postdoctoral fellows and junior faculty and continues to do so. Among her numerous contributions to the department is her current role as founding chair of our department awards committee, a committee she initiated in 2009. In that role, she has been instrumental in securing local and national awards for many of our faculty. Therefore, our entire department is delighted to finally see her receive some well-deserved pay back. *Heartfelt congratulations Christy!!*



## 2012 PHYSIOLOGY FACULTY

- Front Row:** (L to R) Louis D'Alecy, Gina Poe, Dolors San Gili, Xin (Tony) Tong, Ken Inoki, Bishr Omary, Susan Brooks-Herzog, Yatrik Shah, Lei Yin
- Second Row:** Santiago Schnell, Elizabeth Rust, Chu Zhiguo, Malcolm Low, Edward Stuenkel, Larry Argetsinger, Liangyou Rui, Jessica Schwartz, Christin Carter-Su, Ao-Lin Hsu
- Third Row:** Daniel Michele, Gregory Cartee, Michael Ferrari, Richard Mortensen, Juanita Merchant, John Faulkner, John Williams, Ormond MacDougald, Linda Samuelson, Anthony DiFazio, Jun Hee Lee, Suzanne Moenter, Carey Lumeng

## WELCOME 2012 NEW FACULTY!



### Carol Elias, Ph.D.

#### Associate Professor

Molecular & Integrative Physiology, and Obstetrics/Gynecology

*"Our research is focused on the neural and molecular pathways linking metabolism and reproduction."*



### Tim Houchin, Ph.D.

#### Lecturer

Molecular & Integrative Physiology

*Tim will be working with Drs. Beth Rust and Mike Ferrari in teaching new graduate courses for the Physiology Master's Program.*



### William Rainey, Ph.D.

#### Professor

Molecular & Integrative Physiology, and Internal Medicine

*"My laboratory studies the mechanisms regulating normal adrenal gland function as well as causes of diseases associated with adrenal steroid excess or deficiency."*



### Hector Valdivia, M.D., Ph.D.

#### Professor

Internal Medicine, and Molecular & Integrative Physiology

*"My laboratory is interested in elucidating the mechanisms by which dysfunction of calcium release channels/ryanodine receptors generate ventricular tachyarrhythmias and sudden cardiac death."*

*Physiology awards  
first Ph.D.*

*UM Physiology moves to East Medical Building  
(now C.C. Little Building).*

**Susan Brooks Herzog:**

**2012** Endowment for the Basic Sciences Teaching Award in Physiology

**Christin Carter-Su:**

**2011** Elected Fellow of American Association for the Advancement of Science

**2012** Appointed Henry Sewall Collegiate Professor of Physiology, University of Michigan

**2012** Co-organizer for FASEB Science Research Conference on The Growth Hormone/Prolactin Family in Biology & Disease

**Louis D'Alecy:**

**2012** Inaugural member of the Medical School League of Educational Excellence

**Thomas Gardner:**

**2012** Taubman Scholar and Associate Chair for Research in Ophthalmology and Visual Sciences

**Gary Hammer:**

**2012** Elected to the American Association of Physicians

**Lisa Larkin:**

**2012** Excellence in Research Award from the American Orthopaedic Society for Sports Medicine

**Jun Hee Lee:**

**2012** Ellison Medical Foundation New Scholar in Aging Award

**2012** American Liver Foundation Liver Scholar Award

**Malcolm Low:**

**2011** Elected Fellow of American Association for the Advancement of Science

**Ralph Lydic:**

**2012** Excellence in Research Award, American Society of Anesthesiologists

**2012** Chairman of the External Advisory Council, National Space Biomedical Research Institute

**Ormond MacDougald:**

**2012** Editorial boards for "Adipocyte" and "Molecular and Cellular Endocrinology"

**2012** Co-organizer of The 58th Benzon Symposium: Adipose Tissue in Health in Disease, Copenhagen, Denmark

**2012** Inaugural member of the Medical School League of Educational Excellence

**Suzanne Moenter:**

**2012** Sadler Lecturer, Reproductive Sciences, NIH

**2012** Co-Director, Reproductive Science Program

**Geoffrey Murphy:**

**2012** Endowment for the Basic Sciences Teaching Award in Neuroscience

**Martin Myers:**

**2012** Elected to the American Association of Physicians

**Linda Samuelson:**

**2012** Shanghai Cancer Forum Award, Gastrointestinal Cancer Symposium, Shanghai China

**2012** Faculty Mentor Award, University of Michigan

**2012** Takeda Research Award, the Gastrointestinal & Liver Physiology Section of the American Physiological Society

**Yatrik Shah:**

**2012** New Investigator Award, American Physiological Society

**Santiago Schnell:**

**2012** Elected Fellow of the Royal Society of Chemistry

**2012** Member of Modeling and Analysis Biological Systems Study Section

**2012** Inaugural member of the Medical School League of Educational Excellence

**Susan Shore**

**2012** Joseph Hawkins Jr. Collegiate Research Professor, University of Michigan

**Natasha Snider:**

**2012** Research Recognition Award, The Gastrointestinal and Liver Physiology Section of American Physiological Society

**Edward Stuenkel:**

**2011** Outstanding Faculty Service Award, Neuroscience Graduate Program

**2012** Director, Neuroscience Graduate Program

**John Williams:**

**2012** AGA Pancreatic Diseases Section Distinguished Mentor Award

**Shawn Xu:**

**2012** Bernard W. Agranoff Collegiate Professor in the Life Sciences

## UM-WSU Physiology Symposium III

The UM-WSU Physiology Symposium III was held at Wayne State University (WSU) on August 24, 2012. Dr. Jian-Ping Jin, Chair of the Department of Physiology, WSU, and Dr. Valerie M. Parisi, Dean of the WSU Medical School, opened the symposium and welcomed the nearly 170 attendees. Drs. Xuequn Chen (WSU) and Liangyou Rui (UM) chaired the symposium. Eight student and six faculty speakers presented their exciting research findings in the morning and afternoon sessions, respectively. In the noon session, trainees and faculty presented 82 posters. Eight poster award winners were selected by the UM and WSU abstract/poster committees. The winners were Sarah Kampert, Megan Greenwald-Yarnell, Elise Demitrack and Brian Holtz from UM, and Chandni Jain, Francina Gonzalez De Los Santos, Vanesa Ramseyer and Ziauddin Syed from WSU. In the closing remarks, Dr. Bishr Omary, Chair of Department of Molecular and Integrative Physiology, UM, congratulated and thanked our gracious hosts for a wonderful symposium, and highlighted the success of the symposium and how it provided an important platform to promote collaborations between the two institutions and an excellent venue for trainees to present their research.



*Robert Gesell, M.D.  
Fourth Chair of Physiology  
(1923-1954)*



## Global Engagement of Doctoral Education

The Global Engagement of Doctoral Education (GEDE) Initiative with Trinity College, Dublin took a giant step forward recently as the Departments of Molecular & Integrative Physiology, and Pharmacology hosted the Third Annual GEDE Research Symposium on October 4<sup>th</sup>, 2012 at the University of Michigan's Palmer Commons. The Symposium, which included six faculty and four graduate students from Trinity College, was initiated with greetings from John Godfrey, Assistant Dean of Rackham Graduate School, Director Global Graduate Education Initiative, and Vic DiRita, Associate Dean of Graduate and Postdoctoral Education from the Medical School. The symposium featured alternating presentations by Trinity College and Michigan Faculty whose research interests shared common themes. Two 'Data Blitz' sessions involving greater than 20 Physiology, Pharmacology and Trinity College Ph.D. graduate students formed a highlight of the symposium and promoted the outstanding research being done within the respective departments and institutions. Trinity College participants were led by Dr. John Gormley (Director of Postgraduate Teaching and Learning, Senior Lecturer), and included Dr. Kumlesh Dev (Professor of Physiology), Dr. Aine Kelly (Senior Lecturer and Head of Physiology), Dr. Jacintha O'Sullivan (Senior Lecturer in Surgery), Dr. Aideen Long (Associate Professor, Institute of Molecular Medicine) and Dr. Stephen Smith (Assistant Professor of Clinical Microbiology). Notably, the symposium was capped by a celebration held on October 5<sup>th</sup> at Greenfield Village within the Henry Ford Museum Complex. The event was significant in celebrating not only growth in our research and educational interactions with Trinity College, but also as it provided the opportunity to recognize the Department of Physiology's 130<sup>th</sup> anniversary, complete with Model-T rides around the grounds. Additionally, in recognition of these joint

achievements, Dr. Howard Markel, the George E. Wantz Distinguished Professor of the History of Medicine and Director of the Center for the History of Medicine at the University of Michigan and an acclaimed medical historian, delivered reflections of his experiences with the physiology department while Chaired by Dr. Horace Davenport, followed by a thrilling account of cocaine use by Freud and his colleagues and how it shaped their contributions to the development of psychology and medical practice. Dr. Markel's presentation was based on his book: *An Anatomy of Addiction*, which was published in 2011 and was a New York Times as well as a San Francisco Chronicle Best Seller. Our Trinity Guests were treated on October 6<sup>th</sup> to pure-Michigan events including visiting the Rouge River Plant to see the assembly line production of new Ford F150 trucks and a ballet performance at the Power Center on the University of Michigan's campus. The symposium and the meetings that followed between the research groups generated considerable excitement for the establishment of new cooperative scientific interactions. These collaborations are expected to lead to graduate student exchanges between the institutions, and may also expand to medical student and other trainee exchanges.

This GEDE program is generously supported by the Rackham Graduate School, Medical School Administration, Program in Biomedical Sciences, and the Departments of Molecular & Integrative Physiology, and Pharmacology. Additional information about the program and a guide on how to initiate and participate in this Global Engagement of Graduate Education can be obtained at: [http://www.rackham.umich.edu/faculty\\_staff/awards/faculty\\_and\\_graduate\\_program\\_funding/grants\\_for\\_the\\_global\\_engagement\\_of\\_doctoral\\_education/](http://www.rackham.umich.edu/faculty_staff/awards/faculty_and_graduate_program_funding/grants_for_the_global_engagement_of_doctoral_education/)



*Carl J. Wiggers  
President APS  
(1949)*

# Ph.D. Program



After 130 years of excellence, the MIP department and its Ph.D. program continue to thrive. During this year's Fall Welcome, we introduced seven new students, six of whom are entering the umbrella Program in Biomedical Sciences (PIBS) with a primary interest in Physiology. We also officially welcomed six second-year students into the Physiology program, including those from PIBS as well as from the Medical Scientist Training Program. The academic and scientific accomplishments of our current students were on full display this year. Seven students successfully wrote and defended their Ph.D. thesis to obtain their doctorates. Ten students successfully completed their preliminary examination to achieve candidacy. Beverly Piggott, a student in the laboratory of Dr. Shawn Xu, was one of thirteen students in the nation to be awarded the prestigious Harold M. Weintraub Graduate Student Award, which recognizes outstanding achievement during graduate studies in the biological sciences. Jon Mowers was awarded the John A. Williams Service Award; Gail Gifford and Meg Allison were co-recipients of the Arthur J. Vander Teaching Award; and the John Bean Award for Academic Excellence went to Joanne Garbincius. One of our new second year students, Jonathan Gumucio, received the Savio Woo Young Researcher Award from the International Society of Ligaments and Tendons. MIP was also well represented at the national and university levels with students receiving, among others, NIH-sponsored NRSA fellowships, fellowships from the American Heart Association, and a Rackham Predoctoral Fellowship.

We made it through my first year as Director thanks to a brilliant and caring group of faculty and student members of the graduate committee and to our seemingly omniscient coordinator, Michele Boggs. An evaluation from the Rackham Graduate School reaffirmed our position among the elite physiology programs in the country, we instituted new policies that ensure better career opportunities for students and more efficient communication between students and

their mentors, and we streamlined procedures and paperwork to allow students to focus more on their research. The Global Graduate Education Program formed between the University of Michigan and Trinity College, Dublin continues to flourish. Spearheaded by Bishr Omary and Ed Stuenkel, we enjoyed our third International Research Symposium, which included talks from UM students in Physiology, Pharmacology and Neuroscience as well as from Trinity students. I am invigorated and excited about the future, as the opportunities for our students continue to grow and to provide the tools for success in a global society.

Finally, as we enter the winter recruiting season, I am reminded of the importance of all of our "Friends of Physiology"—our alumni, former faculty, and former postdoctoral fellows—whose support and encouragement are so valuable. Each year we receive applications from outstanding students across the country whom you have influenced in many ways to consider Michigan Physiology. Please keep it up. The graduate students continue their efforts to raise funds for their endowment entitled "Graduate Education Fund in Physiology." Over \$400,000 has been raised in the last three years. T-shirts and mugs, featuring a creative design by Meg Allison, were distributed for new donations. All donations will be matched 1:1 by the Dean of the Medical School, and the return on this endowment is now being used, as voted on by the students, to support presentation of their research at national and international scientific meetings.

Oh, I almost forgot. For the second year in a row, the students (combined from the Master's and Doctorate programs) won the annual faculty-student softball game during this year's Fall picnic. Afterward, I overheard some of them posing the hypothesis that their victory may represent a new, long-term reality. While only time will tell, I prefer to believe that a year from now we will all view it as merely a blip in our 130-year history. Have a safe and happy year everyone!

**Scott Pletcher**



**Front Row:** (left to right) Alexis Carulli, Gail Gifford, Xi Chen, Tami Stevenson **Second Row:** Jun Young Hong, Kris Sugg, Emmalee Adelman, Joanne Garbincius, Zachary Harvanek, Kristen Ruka, Meg Allison, Surojit Sural.  
**Third Row:** Bryan Holtz, Jordan Wright, Joel McDade, Ryan O'Connell, Jim Mackrell, Mark Bolinger, Amy Sutton, Jonathan Gumucio, Francisco Alvarado, Joe Kruempel



*Ralph W. Gerard*  
 President APS  
 (1951)



*Horace W. Davenport, Ph.D., D.Sc.*  
 Fifth Chair of Physiology  
 (1954-1977)



# 2011-2012 Student Awards & Honors

**Meg Allison** (Myers Lab):

2012 Rackham Research Grant; NIH Ruth L. Kirschstein National Research Service Award

**Anuli Anyanwu** (Pinsky Lab):

2011 Rackham Merit Fellowship; Rackham International Travel Grant

**Amy Baek** (Pinsky Lab):

2012 Rackham Merit Fellowship

**Jacob Bermudez** (Larkin Lab):

2012 Rackham Merit Fellowship

**Mark Bollinger** (Antonetti Lab):

2012 Vision Research Training Grant Fellow; Rackham Research Grant

**Adam Bree** (MacDougald Lab):

2012 Rackham Research Grant

**Alexis Carulli** (Samuelson Lab):

2012 Rackham Research Grant; Rackham Travel Grant; NIH Ruth L. Kirschstein National Research Service Award

2011 Arthur J. Vander Teaching Award

**Wei-Chung (Daniel) Chiang** (Hsu Lab):

2012 Rackham Predoctoral Fellowship; Rackham International Travel Grant

**Joanne Garbincius** (Michele Lab):

2012 Systems and Integrative Biology Training Grant Fellow

**Gail Gifford** (Samuelson Lab):

2012 Systems and Integrative Biology Training Grant Fellow

**Jonathan Gumucio** (Mendias Lab):

2012 Systems and Integrative Biology Training Grant Fellow; Rackham International Travel Grant; Savio Woo Young Researchers Award from the International Society of Ligaments and Tendons

**Bryan Holtz** (Williams Lab):

2012 U of M/Wayne State Physiology Symposium Poster/Abstract Award; Rackham Travel Grant; Rackham Research Grant; Systems and Integrative Biology Training Grant Fellow

**Jun Young Hong** (Hershenson Lab):

2012 Rackham Travel Grant

**Luqia Hou** (Jalife Lab):

2012 Rackham Research Grant; Endowment for the Development of Graduate Education (EDGE) Award

**James MacKrell** (Cartee Lab):

2012 American Heart Association Fellowship

**Joel McDade** (Michele Lab):

2012 American Heart Association Fellowship

**Jacob Mertens** (Larkin Lab):

2012 Rackham Research Grant

**Jonathan Mowers** (Saltiel Lab):

2012 NIH Ruth L. Kirschstein National Research Service Award; Rackham Research Grant

**Katherine Overmyer** (Burant Lab):

2012 Rackham Travel Grant Fellow; Rackham Merit Fellowship

**Beverly Piggott** (Xu Lab):

2012 Vision Research Training Grant; Harold M. Weintraub Graduate Student Award

**Tami Stevenson** (Lawrence Lab):

2012 Systems & Integrative Biology Training Grant Fellow

**Amy Sutton** (Myers/Olson Lab):

2012 Systems & Integrative Biology Training Grant Fellow

**Abbie Renoux** (Sutton Lab):

2012 Rackham Travel Grant; Rackham Research Grant; NIH Ruth L. Kirschstein National Research Service Award

**Kristen Ruka** (Moenter Lab):

2012 Rackham Research Grant

**Jordan Wright** (Arvan Lab):

2012 NIH Ruth L. Kirschstein National Research Service Award

**Tingting Xiong** (Saltiel Lab):

2012 Rackham Research Grant



## HATS OFF TO OUR 2012 GRADUATES!

### Matthew Barnabei

Mentor: Joseph Metzger

Thesis: "The Functional Role of Dystrophin in the Heart: Implication for Inherited and Non-Inherited Heart Disease"

Currently: Senior Development Scientist at Beckman

### Halina Chkuourko

Mentors: Mario Delmar and Jeffery Martens

Thesis: "Functional Interaction Between Mechanical Junction Proteins, Connexin43 and the Voltage-Gated Sodium Channel Complex in the Heart"

Currently: Postdoctoral Fellow at Mount Sinai School of Medicine

### Jessica Gumerson

Mentor: Daniel Michele

Thesis: "Large-Mediated Glycosylation of Dystroglycan in Skeletal Muscle Function"

Currently: Postdoctoral Fellow at the University of Maryland



### Jonathan Mowers

Mentor: Alan Saltiel

Thesis: "Mechanisms by Which the Protein Kinases IKKε and TNK1 Regulate Energy Balance"

Currently: Returned to third year clinical rotation at UM



### Beverly Piggott

Mentor: Shawn Xu

Thesis: "The Neural Circuits and the Synaptic Mechanisms Underlying Motor Initiation in *Caenorhabditis Elegans*"

Currently: Postdoctoral Fellow at University of California San Francisco

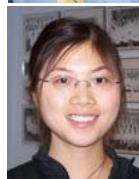


### Donel Sequea

Mentor: Gregory Cartee

Thesis: "Mechanisms for Calorie Restriction Effects on Insulin-Simulated Glucose Uptake by Rat Skeletal Muscle"

Currently: Returned to third year clinical rotations at UM



### Tingting Xiong

Mentor: Alan Saltiel

Thesis: "Cascading Small GTPases in Insulin Action"

Currently: Internal Medicine Resident at William Beaumont Hospital

Horace W. Davenport  
President of APS (1961)



John M. Brookhart  
President of APS (1965)

Physiology moves to  
Med Sci II Building  
(1969-present)

## {8} Post-Doc Program

The MIP Postdoctoral Society has continued developing throughout 2012, with our monthly meetings covering diverse topics such as time management and career planning, paper reviewing, and moving to an independent research career. Of course, we have also continued to provide a forum for our postdocs to present their own research, a key role of our monthly meetings that no doubt helps foster stronger links between our members. Our 2012 meetings began in February, with Bishr Omary discussing "Time management and career planning for postdocs". Bishr spoke enthusiastically about project planning, collaborations, devising an Independent Research Plan and gaining teaching experience. This was a highly motivating meeting, touching on many points that are all too easy to neglect when preoccupied by the daily grind of lab work!

In April we held a workshop on reviewing research papers, with MIP faculty members Gina Poe, Geoffrey Murphy and Dan Michele giving their insights into this important but often undervalued aspect of an academic research career. Dan shared his experience of the FEBS Journal editorial process while Gina and Geoff focused more on paper reviewing itself. It was interesting to hear their often-contrasting opinions and approaches, underscoring the fact that there is no single way to review a paper. Nevertheless, they each emphasized scientific quality and the need for data to support authors' conclusions as key points to address. With the current broad trend of published research increasing in quantity while decreasing in quality, I think that providing graduate students and postdocs with more rigorous training in manuscript reviewing should be a priority for the future.

A highlight of the year came in May, when we hosted a visit by Prof. Phil Clifford, Associate Dean of the Graduate School of Biomedical Sciences at the Medical College of Wisconsin. Phil had recently been awarded the National Postdoctoral Association's Distinguished Service Award, so we eagerly anticipated his visit. On Thursday May 10<sup>th</sup> Phil had dinner with MIP postdocs Amika Singla (Omary lab), Yanan Hou (Williams lab), Sebastian Parlee and Will Cawthorn (both from the MacDougald Lab), as well as Catherine Stables and Jeff Herbstman from the UM Postdoctoral Association. During the dinner, Phil instigated lively discussion about our experiences as postdocs and how we would like policies toward postdocs develop in the future. Friday centered on Phil's career planning workshop entitled 'Begin with the end in mind:

planning for a successful career in science', in which he highlighted challenges that all postdocs face but that are frequently neglected. Based on this, Phil underscored the importance of establishing an Individual Development Plan, emphasizing his points by mixing audience interaction with thought-provoking but often humorous discussion; it was encouraging that this superb workshop was so well attended by postdocs from throughout the University. Phil then had lunch with the MIP Postdocs, allowing further conversation about issues that we face as postdoctoral researchers. Throughout his visit Phil's enthusiasm as an advocate for postdoctoral researchers clearly shone through, so we are very grateful to Bishr for inviting him to visit us.

At our June meeting, Yatrik Shah spoke about moving from a postdoc to an independent research career. Sadly, I could not attend this meeting, though many of our postdocs gave very positive reviews. In July and August, Zheng Chen (Rui lab) and Yanan Hou (Williams lab) updated us on their research progress. July also saw the departure of our Vice-President, Amika Singla, who moved to Dallas for family reasons and will continue her postdoctoral research at UT Southwestern. We wish Amika well for her future career. Ian Moench (Lopatin lab) was ultimately elected to replace Amika as our Vice-President, and I must thank both Ian and Amika for doing a fantastic job in helping run the MIP Postdoctoral Society.

The remainder of 2012 will see our meetings continue to focus on our postdocs' research, and we will also be seeking a new President and Vice-President to keep things moving forward in 2013. We are extremely grateful to the MIP faculty who have contributed to our monthly meetings; to the MIP administrative staff who ensure that these meetings run smoothly; and to Bishr for his continued enthusiasm and support for postdocs within our department. During his visit, Phil Clifford noted that many universities have yet to establish postdoctoral associations; hence, the existence of a postdoctoral society within a department was, in his experience, unique. I think all of the MIP postdocs appreciate how lucky we are to have such a unique forum, and I look forward to seeing the MIP Postdoctoral Society go from strength to strength in the future.

**Will Cawthorn - President**

## 2012 Post-Doc Awards & Honors

### **William Cawthorn:**

**2012** Awarded F32 NRSA Fellowship from NIH  
**2012** Lilly Innovation Fellowship, Eli Lilly

### **Elise Demitrack:**

**2012** Poster winner at Wayne State/U of M Physiology Symposium  
**2012** Travel Award James Freston Conference on Gastrointestinal Stem Cell Biology & Pathobiology

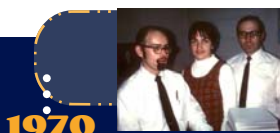
### **Sebastian Parlee:**

**2012** Dalhousie University Department of Pharmacology A.K. Reynolds Thesis Award  
**2012** University of Michigan Center for Organogenesis Non-Traditional Post-Doctoral Fellowship

## INAUGURAL JOHN & MARGARET FAULKNER LECTURESHIP OF PHYSIOLOGY



This June, we held our first John and Margaret Faulkner Lectureship of Physiology and had the great pleasure to host Dr. Sol H. Snyder as the inaugural speaker for the event. Dr. Snyder is a world-class neuroscientist and currently the Distinguished Service Professor of Neuroscience, Pharmacology, and Psychiatry at the Johns Hopkins University. The event attracted a large crowd that filled the BSRB auditorium. Sol gave a fantastic research seminar titled "Novel Neural Messengers in Life and Death", which was full of solid science and lots of humor. During his visit, Sol met with faculty from several departments to share his insights. He also had lunch with graduate students to share his career stories and to answer many questions they had. It was an honor for our faculty and students to meet with Sol. The inaugural lectureship was a great success, which we hope will continue for years to come. Everyone agreed, including the Faulkners, that there was no better way to kick off this Lectureship series. We wish to express our sincere gratitude to Dr. and Mrs. Faulkner for their generous contribution that made this precious opportunity possible.



*Manuscript of first edition of  
Vander, Sherman & Luciano's  
Human Physiology (now in 10th edition)*



*David F. Bohr  
President of APS (1978)*



# Summer Undergraduate Research in Physiology Fellowship to Broaden Participation

As of summer 2012, we have three fellowship programs that support undergraduate summer research in Physiology. (1) The Summer Undergraduate Research Fellowship (SURF) program, directed by Dr. Ormond MacDougald, is the longest running program of the three and supports students primarily from Physiology faculty member's own grants. This past summer, SURF sponsored eight students during the 12-week period. More information can be found at: <https://sites.google.com/site/surfumichedu/>. (2) The Short Term Educational Program (STEP) is funded by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and directed by Dr. Santiago Schnell. The STEP program is specifically targeted to students from mathematics, physics, engineering, computational sciences and other quantitative backgrounds and is aimed at encouraging these students to apply their expertise to research relevant to digestive and metabolic physiology and associated diseases. The STEP program is currently in its 2<sup>nd</sup> year of funding and supported twelve undergraduate students this past summer. The detailed program information and application for 2013 is available at: <http://sitemaker.umich.edu/physiology.interface>. (3) The Summer Undergraduate Research in Physiology (SURP) program is the newest addition to our summer programs, funded by the National Heart Lung and Blood Institute (NHLBI) and directed by Dr. Jimo Borjigin. Unlike the other two summer programs, the SURP program is uniquely designed to promote diversity of future scientists by attracting students from underrepresented groups. Target population of this award includes (1) students from racial and ethnic groups who are underrepre-



*SURF and STEP Program Students*

sented in health-related sciences; and (2) students with disability, or from disadvantaged backgrounds (low income or inner-city environment). Students who have finished two or three years of college and who are interested in ultimately pursuing research at the Ph.D. level are encouraged to apply. The SURP program is in its 1<sup>st</sup> year of funding and supported nine students this year. The detailed program information and application for 2013 is available at: <http://sitemaker.umich.edu/physiology.diversity>. These three programs together represent our department's commitment to encourage and foster the success of students from all backgrounds to attain advanced degrees, research careers, and positions in leadership in physiology and biomedical sciences.

## SPOTLIGHT on Alumni



Christina Bennett was a graduate student in Ormond MacDougald's lab from 1999-2005. Her dissertation research explored the role of Wnt signaling as a molecular switch between adipogenesis and osteoblastogenesis using cell culture and mouse models. In January 2006, Christina began a postdoctoral fellowship at the National Cancer Institute, NIH, Bethesda, Maryland studying mouse models of breast cancer. On the side, she taught human physiology as an Adjunct Professor in the Biology Department at American University, Washington, D.C. Juggling research and teaching was not easy, which led her to reconsider her career goals. After many visits to the NIH Career Center, she felt more confident to explore job opportunities outside of basic science research. During her job search, she was intrigued by a job description posted at the American Physiological Society for a Publications Ethics Manager. The position is responsible for analyzing and addressing the ethical concerns that arise in the 13 peer reviewed original research and review publications published by the Society. She accepted the position in late 2010 and began in January 2011. This position has definitely made her better appreciate the amazing mentorship and graduate training she received in the Molecular and Integrative Physiology Department. In particular, she now understands why Ormond would go through drafts of her manuscripts word for word, line by line, hour by hour and why he emphasized the importance of publishing solid and honest research.



*Linda Busha*

Linda Busha retired on June 1, 2012 after 28 years of service with the University of Michigan Health System. We tried to convince her otherwise, but the beaches of Florida and the Augusta golf courses won out. Linda started her career in the Department of Obstetrics and Gynecology in August 1984. She moved to the Department of Pharmacology in August 1986 for a short stint before finding her "true calling" in our Department of Physiology as the Chair's associate in September 1987. Linda worked with three chairs: Jack Kostyo until November 1987, John Williams until August 2008, and currently Bishr Omary. Linda has done an incredible job supporting the Department. She has been a key member of our Physiology family, and has completed more appointment and promotion forms than anyone else in any other basic science department. In honor of Linda's contributions, a reception was held on May 31, 2012.

We are delighted that we were able to recruit Gail Kelsey to work with Bishr Omary. In many ways, Gail's joining of MIP keeps her in the family since prior to this she worked with our joint faculty member Juanita Merchant as a research administrator for 17 years. Gail has promised to at least match Linda's time in physiology.



*Gail Kelsey*



*Jack L. Kostyo, Ph.D.  
Sixth Chair of Physiology  
(1979-1985)*



*Harvey V. Sparks  
President of APS (1987)*



*John A. Williams, M.D., Ph.D.  
Seventh Chair of Physiology  
(1987-2008)*

# Master's Program

The Master of Science in Physiology program is off to a great start with the recent graduation of the inaugural Class of 2012. The 11 coursework track students finished in June 2012 and the four research track students finished in August. Angela Tucker, the program administrator, organized a wonderful Graduation dinner held at Rackham on June 16<sup>th</sup>. In addition to the gift of good food, good drink, and very short speechifying by the Program Directors, each graduate was given a unique and personalized gift. These were well received and are now the 'official' gift and mark of a M.S. in Physiolo-



**First Row:** (Left to Right) Katherine Gasho, Tina Wu, Erica Saunders  
**Second Row:** Elizabeth Rust, Robert Matar, Alexander Roussos, Joshua Hamoud, Maria Tocco, Vasu Mahalingam  
**Third Row:** Mohamad Charara, Malav Parikh, Joshua Rivers, Alex Kramer, Peter Altshuler, Michael Ferrari

gy graduate (no, we can't tell you what it is...some of the current class might be reading this!). Of course, our ability to forward the careers of the graduates is what really matters, so recall that this program was designed to attract students planning on one of the following careers: (1) employment in a research laboratory in academia or industry or other related profession, (2) application to a doctoral degree-granting program, or (3) application to a health profession program such as medical or dental school. So how did they/we do?

In Fall 2011, 17 students matriculated into the program, and two were accepted to medical school early in that term and decided to leave the program. Six coursework track students had co-applied to our program and professional schools, and four of those were accepted and matriculated (three Medical, one Dental) by year's end. The other two students have re-applied this cycle along with the other five coursework track students submitting for the first time. We look forward to hearing about interviews and admissions for these students over the following months. We happily note that two of our four research track students are staying on in their respective labs during their gap year, and the other two research track students, who had also co-applied, were admitted and matriculated into medi-

cal school. We thus view this inaugural year as a wonderful success, and credit the important efforts of the students, staff, and instructors in making this happen. For example, the inaugural year students helped several instructors vet the first-time offerings of PHYSIOL 404, 592, 600, 605, 610 and 702.

Space precludes discussing each of the above courses, but one of them, PHYSIOL 404, a Human Physiology laboratory, has already grown considerably. This course, supported by both the Department and a CRLT grant (Drs. Rust and Schnell), was developed by Drs. Rust and Ferrari, and is open to both M.S. and undergraduate students. The interest in the course has allowed us to expand section offerings, and it became clear that running 404 was close to a full-time job! A search was initiated for a new Lecturer, and Timothy Houchin, from Dr. Kreulen's laboratory at MSU, will be joining us by the end of the Fall term. In the meantime, Dr. Matthew Wishart graciously stepped in to run the five sections of 404 for Fall 2012.

Outside of the classroom, all of the MIP office staff have been instrumental in building the program, and we particularly thank Sarah Lawson for supporting the program website, Dan Clark for helping the 'program' move into new offices over the summer, and Michele Boggs and Angela Tucker for updating our admissions application on Rackham's website and receiving and organizing the applicant files. This was an important task, as we received 194 applications by the application deadline of April 30<sup>th</sup>. During April and May the M.S. committee (Drs. Rust, Ferrari, D'Alecy, Larkin, Schnell) met several times to review the applications and began extending offers to qualified individuals. We are grateful for their efforts, and have started the Fall 2012 term with 25 students (17 coursework track, eight research track) - most of the students are planning on attending medical or dental school. The Class of 2013 has an average MCAT score of 30.2 and 3.4 GPA average.

This year's class began the term with an orientation meeting on August 30<sup>th</sup>, and then students had the Labor Day weekend to relax before the start of coursework. Same as last year, the students were fortunate to have a fantastic orientation package that was put together by Angie. Angie has quickly become indispensable to the program, as she shepherds the students through everything - finding housing, getting ID's and keys, handling course schedules and registration, etc. The students are lucky to have Angie as a personable and responsible point of contact for the program, and we are grateful to have had her help for the first critical year. The program will likely run even smoother this year, as the 'program' moved to new offices on the 6<sup>th</sup> floor of MS II. Angie and the Co-Directors have offices in close proximity which should facilitate communications and make it easier for the students to find us (oh, er, ...wait..).

We are grateful to Bishr Omary, Chair of MIP, for envisioning and supporting the program and to the MIP faculty for their support and participation. We are looking forward to the rest of the year and the graduation of the 2<sup>nd</sup> M.S. in Physiology Class of 2013!



**Michael Ferrari**  
Co-Director



**Elizabeth Rust**  
Co-Director



**Angie Tucker**  
Program Coordinator



*James A. Schafer*  
President of APS (1996)



# 2011-2012 Physiology Donors

09/2011-08/2012

## Bohr Collegiate Professorship

Stevo Julius  
Bishr Omary  
Joan Soileau

## Karsch Collegiate Professorship

Ann Boyd Stewart  
Rusty Brand  
Annette Cafferty  
Christin Carter-Su  
Kellie Breen Church  
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Sarah Newman  
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## Faulkner Lectureship

Melanie Bolhuis  
John Faulkner  
John Magel  
Bishr Omary

## Faulkner Collegiate Professorship

Jimo Borjigin  
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John Faulkner  
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## Williams Collegiate Professorship

Harold Williams  
John Williams

## MIP UG Summer Fellowship

Sempercor Foundation of the  
Greater Milwaukee Foundation



2012  
Departmental  
Picnic



John A. Williams  
President of APS (2003)

Physiology  
125th Anniversary Celebration

# Gift Opportunities

## **David F. Bohr Collegiate Professorship in Physiology**

This endowment was established in honor of Dr. David Bohr and his decades of enormous contributions to our department and the field of physiology at large. The Physiology Department has set aside funds to match donations to attain the \$500,000 that is needed to establish the David F. Bohr Collegiate Chair of Physiology. To date, we have raised \$110,000 (\$220,000 with matching).

## **John and Margaret Faulkner Lectureship & Education Fund**

This fund will go towards supplementing the Graduate Education Fund and to establish an annual lectureship whereby a prominent invited speaker will be selected by students and faculty in honor of John and Margaret Faulkner. Currently this fund has \$30,000 of the necessary \$100,000 needed to endow it in perpetuity.

## **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 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. Your generous gifts have allowed us to raise \$300,000 during the first three years of this effort and the Medical School has recently provided the second \$100,000 increment of matching funds to reach a total of \$400,000.

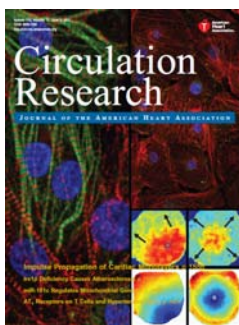
## **Fred J. Karsch Collegiate Professorship in Physiology**

Established in Summer 2011 to honor Dr. Karsch's career as a preeminent scholar, scientist, teacher and beloved mentor. The campaign effort is to raise \$250,000, which will be matched by Physiology Departmental Funds. Of note, Fred and Nora Karsch have generously committed to donate \$60,000 as a lead gift, and your generous contributions have now added another \$65,000, with a gift of \$20,000 by Dr. Bob Goodman. Therefore, the goal of the campaign is to raise an additional \$125,000.

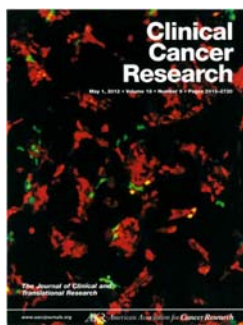
If you would like to make a contribution, please enclose a check in the envelope provided. Please make checks payable to the University of Michigan and place in the notes section which fund you would like to contribute to. If you would rather contribute by credit card, you may visit [www.physiology.med.umich.edu](http://www.physiology.med.umich.edu), 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 the Associate Director of Basic Science Development, Greg Witbeck, at [germaine@med.umich.edu](mailto:germaine@med.umich.edu) or Bishr Omary at [mbishr@umich.edu](mailto:mbishr@umich.edu). We thank you for your generous support!

*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.*

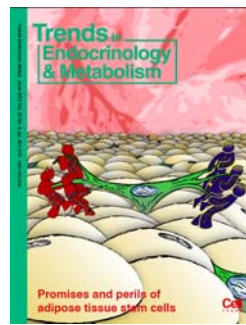
## Covering the Covers



**Todd Herron  
Group**



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Group**



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Group**



**Santiago Schnell  
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**Vasanth Padmanabhan  
Group**

University of Michigan, Molecular & Integrative Physiology  
1137 E. Catherine St., Rm. 7744, Ann Arbor, MI 48109-5622



*Bishr Omary  
Eighth Chair of Physiology  
(2008-present)*

*Physiology celebrates  
130 years!*

2008

2012