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Integrating the Life Sciences from Molecule to Organism

The Physiologist

INSIDE

84th President of APS
Joey P. Granger

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I would like to first thank the membership of the APS for the honor and privilege of serving as the 84th President of the APS. I would also like to thank all of the individuals who have influenced and shaped my career as a physiologist. APS has played a central role in nurturing my career for over 30 years through its meetings, publications, and educational programs and committee service opportunities.

I became interested in physiology at a young age. I was very fortunate to have two older brothers, Harris and Neil Granger who entered the exciting field of physiology. Harris, Chair of the Department of Systems Biology and Molecular Medicine at Texas A&M School of Medicine, and Neil, 77th President of APS and Chair of the Department of Molecular and Cellular Physiology at Louisiana State University Health Sciences Center, both had the fortunate opportunity to train in Arthur Guyton's (47th President of APS) physiology department in Jackson, MS. My first exposure to physiological research was a one week experience in Harris's laboratory during the summer prior to entering 7th grade. I recall witnessing some very exciting experiments in cardiovascular and renal physiology during that short period of time and also meeting a young assistant professor, Gabriel "Gabby" Navar (71st President of APS), who shared a laboratory with Harris. Harris was working on a project examining physiological mechanisms of whole body blood flow autoregulation and Gabby was working on a new technique to monitor renal interstitial hydrostatic pressure in dogs. I never thought at that time that years later I would be involved in studies examining mechanism of renal blood flow autoregulation and investigating the role of renal interstitial hydrostatic pressure in renal pressure natriuresis!

I also had the privilege of working one summer as an undergraduate student in the laboratory of Aubrey Taylor (61st President of APS), where Neil was training as a graduate student. That summer experience led to two co-authored scientific publications, one on the effects of phospholipases on selected renal enzymes and the other on mathematical simulation of intestinal volume and protein regulation in the small intestine. I vividly remember the excitement of seeing my name as a co-author on those scientific publications.

In 1979, I joined the physiology graduate program at the Univ. of Mississippi Medical Center where Allen C. Cowley (70th President of APS) served as the graduate program

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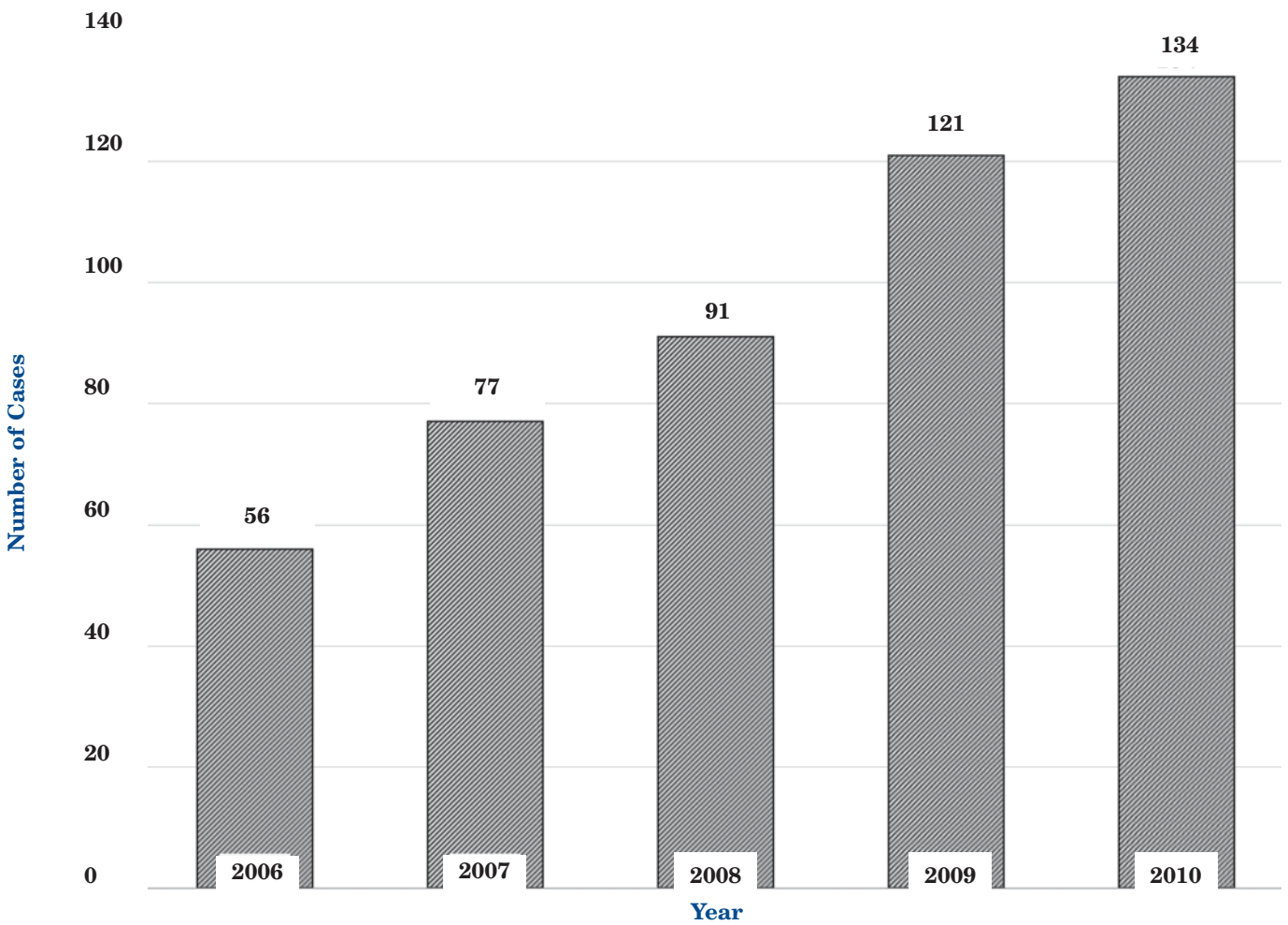
We Must Do Better!

January 3rd was the first day of work for Christina Bennett as the Society's first Publications Ethics Manager. She joined the APS after receiving her PhD in Molecular and Integrative Physiology at the Univ. of Michigan and serving as a postdoctoral fellow at the National Cancer Institute. While Christina has a passion for science, she suspected she may have a related, but different, calling. She wanted to contribute to scientific advancement in a way that will help ensure the integrity of the science published in the Society's journals. No doubt, being the Society's Publications Ethics Manager was not something she aspired to as she worked on her doctorate in Ann Arbor, just like I did not dream of being the Society's Executive Director when I was working on my PhD in Urbana, IL. However, circumstances bring opportunities to each of us. I cannot tell you what motivated Christina to apply for the job, and I will invite you to ask her when you meet her, but I am certain that her undergraduate minor in Bioethics at the Univ. of Virginia contributed to her decision. No doubt Christina recognized an opportunity to help educate each and every one of us to better understand what acceptable practice is when we assemble our research for presentation and publication for others.

One might ask, in the first place, why the Society hired a Publications Ethics Manager. It is because the Society takes its responsibilities very seriously: the Society's journal program is an integral part of the APS educational mission, designed to publish only papers that contribute to the advancement of science and that are of sound integrity. The overall process requires many volunteer scientists involved in the review and selection of manuscripts for publication, and APS staff who manage the peer review and editorial and production processes, and who engage in copyediting and rendering of artwork and design. The Society receives approximately 8,000 manuscripts per year for publication in our scientific journals and ultimately publishes about 3,500.

Over the past five years, the Society has observed an ever increasing number of ethical cases (Figure 1) that demand our attention, taking up an inordinate amount of time of our Publications Committee Chair, Kim Barrett, and Publications Director, Rita Scheman. In anticipation of the completion of Kim's term at the end of 2010 and the initiation of Hershel Raff's term as Publications Committee Chair, the Society realized that there was a need to do something different in the management of the ethical cases flooding the office. Kim graciously offered to

Figure 1. APS Ethical Cases by Year.



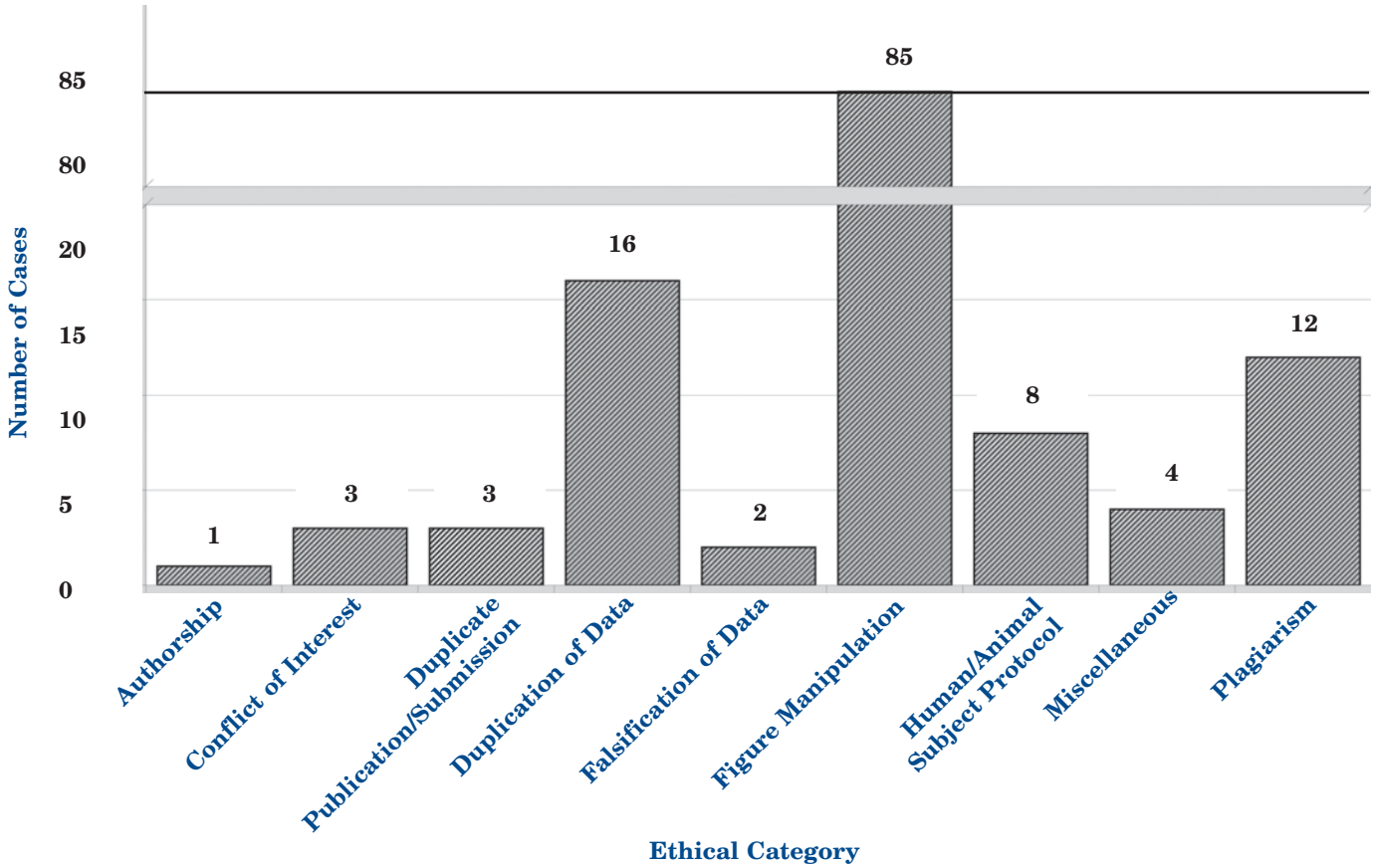
remain on the Publications Committee as the "Vice-Chair" expressly to help Hershel manage the ethical cases in his new role as Chair. The Society also created the new position of "Publications Ethics Manager," ultimately, to manage the complex and often sensitive issues arising in instances of potential publications ethics violations.

In 2010, Kim Barrett and Rita Scheman had to deal with 134 cases that warranted some intervention and communication with authors. The issues raised by these cases involved plagiarism, falsification and/or duplication of data, authorship disputes, duplicate publication/submission, conflicts of interest, human/animal subject protocols, and figure manipulation (Figure 2). Once an "ethical case" is brought to our attention, whether by a reviewer, an author, a reader or an APS publications' staff member, the corresponding author is contacted to provide clarification. Each case is handled according to prescribed guidelines (http://www.the-aps.org/publications/journals/apsethic.htm), as well as with careful allowance for the uniqueness of each situation. The author is given an opportunity to reply to each concern raised, and it is not until then that the Society decides how to proceed. Most cases are resolved following explanation and receipt of more data from the corresponding author. However, if a manuscript is found to violate APS Publications Ethical Policy, it will be rejected on ethical (as well as possibly scientific) grounds if under peer review, or retracted, if already published. It may not be withdrawn by the author once an ethical query is raised. In some cases where the scope of the problem goes beyond the APS article in question or where the violation is extreme, the authorities at the author's institution are notified.

None of us knows for sure why the APS and other scientific publishers are seeing an increasing number of ethical cases. However, many of us think the problem relates to the intensity of competition for grant funding and recognition, as well as the ease with which images can be manipulated (both for purposes of "beautification," as well as fraud) and the manipulation detected. As research teams get larger, the research leader has less time to spend with each graduate student, postdoctoral fellow, and technician. The leader might meet regularly with his/her research team to review the data, but often times it is data as prepared for publication or presentation at a meeting, not as the raw data. As a consequence, the team leader's admonition for better results or cleaner images might be too much, causing members of the team to try and give the research leader what has been requested, even if it means data manipulation.

It is for that reason "we must do better." Each of us, the Society and our members, must do a better job of mentoring our students and postdoctoral fellows so they understand the difference between right and wrong. The Society has tried to do that by providing resources on our website that can be accessed to help you understand what is acceptable. Indeed, we have created an ethical issues poster which has been translated into 10 languages and should be posted in your laboratory to serve as a reminder of what is

Figure 2. APS Ethical Cases: 2010 Cases by Ethical Category.



acceptable behavior for preparing a manuscript. The Society has also posted a PowerPoint presentation (http://www.the-aps.org/education/profskills/Figure%20Manipulation_presentation/player.html) produced by the Society's Editorial Art Manager, Eric Pesanelli, designed to help you understand the proper way to present your figures for consideration by scientific journals. These materials are available at http://www.the-aps.org/publications/journals/apsethic.htm. In addition, there are numerous other resources available at the Office of Research Integrity, DHHS, including a new interactive movie, "The Lab: Avoiding Research Misconduct (http://ori.hhs.gov/TheLab/)." With the help of Christina Bennett, the Society will be further developing its web resources and education efforts in publications ethics.

The challenge facing the Society is how best to handle the increasing number of ethical cases. We have revised our production procedures to do so and hired a Publications Ethics Manager to help. However, in the end, it is up to each of us to ensure that the science published in APS journals, indeed in all journals, is of the highest ethical standards. Otherwise, how can the public believe in what we do and provide the financial support needed to pursue our research? We must all do more to maintain an ethical framework in our research and professional endeavors and APS will do its best to help you do so. ❖

Martin Frank

84th APS President

director and as my mentor until I completed my research rotations. One of the most important choices that I made during my early training was the selection of my PhD advisor, John Hall (74th President of APS). John's outstanding mentorship provided me with a solid foundation in integrative cardiovascular and renal physiology and physiological experimentation that continues to impact my career to this day. After obtaining my PhD, I joined the laboratory of Franklyn Knox at the Mayo Clinic, who at the time was serving as the 59th President of APS. It was during this time of my training that I began my active involvement in the APS, serving as a trainee representative on the APS Long Range Planning Committee (LRPC) that was chaired by Ernest Knobil (52nd President of APS). I remember that one of the most important achievements of the LRPC was the restructuring of APS governance in a way that enhanced the vitality of APS sections. I also recall Franklyn Knox interviewing a young physiologist named Martin Frank for the Executive Secretary position at APS!

I have provided a detailed history of my early experiences as a physiologist because it highlights several important things. First of all, it provides a perfect example of how early exposure to the excitement of biomedical research can have a significant influence on young people considering a career as a physiologist. It also points out that numerous individuals have influenced and shaped my career as a physiologist and that I have gotten to where I am at today by standing on the shoulders of giants in the field of physiology.

Where are we now?
The State of APS

By all measures, the state of the Society is excellent! We have a diverse group of over 10,000 national and international members. Our members are actively involved in APS committees and programs such as publications, meetings, education, mentorship, and advocacy. APS is financially strong and our financial resources are utilized effectively and efficiently to assist the Society in planning and achieving its mission of promoting discovery, disseminating knowledge, and advancing education in physiology. Our Society's current annual budget is between $17-18 million. In addition, the Society has approximately $40 million in reserve.

According to our most recent APS membership survey conducted over the last few months, our meetings, publications, educational, marketing, communications and advocacy programs are highly rated by the majority of our membership. Our publications program at APS is outstanding and is the envy of other scientific societies. The publications program is critical to our Society since it fosters one of our major societal missions—the dissemination of new scientific knowledge. In addition, income from our journals accounts for least 80% of our annual APS budget! APS produces 14 journals (seven in the *American Journal of Physiology* series, plus *Physiological Genomics*, *Journal of Applied Physiology*, *Journal of Neurophysiology*, *Physiological Reviews*, *Physiology*, *Advances in Physiology Education* and *The Physiologist*). *Physiological Reviews* was recently ranked as the number one journal in physiology and the number five of all cited journals by the annual Journal Citation Reports. APS also recently launched the online publication of the Handbook of Physiology entitled *Comprehensive Physiology*. The existing Handbook content will be fully digitized and integrated within the new content and will be published in a quarterly serial format that will enable *Comprehensive Physiology* to be eligible for inclusion in abstracting and indexing services, such as PubMed and ISI. Ongoing updating and expansion of the coverage will ensure that the content continues to grow and evolve along with the science of physiology.

Another major strength of our Society is our meetings and conferences. The scientific program for the annual Experimental Biology (EB) meeting is developed at the grass roots level by our 12 APS Sections and seven Interest Groups who request proposals for symposia and featured topics from membership. Thus, the EB meeting provides a scientific forum that reflects current state-of-the-art research that is of interest to our membership. A recent development in our EB meetings program is that APS programming will take on a "meeting-within-a-meeting" structure that provides focused attention on related topics presented on contiguous meeting days. In addition, the last day of EB has been expanded to a full day meeting to meet the needs of our sections.

The APS also provides a wide array of outstanding educational outreach programs that range from grade school to graduate school to early stage investigators. Physiology Understanding (PhUn) Week has been a very success-

ful program in promoting physiology to K-12 students and teachers. APS also provides an excellent archive of teaching resources for elementary and high school teachers, as well as undergraduate educators. Our Education Committee is also developing a series of teaching resources to enhance and promote the use of the APS Life Lines podcasts in undergraduate courses and K-12 classrooms. Our mentoring programs, such as the live and online professional skills training courses on writing and reviewing for scientific journals and courses on making scientific presentations, have been a huge success and very popular with our graduate students and postdoctoral fellows. These educational programs are essential not only to promote the discipline of physiology but also to growing

Introducing Joey P. Granger

Joey P. Granger is the Billy S. Guyton Distinguished Professor, Professor of Physiology and Medicine, Director of the Center for Excellence in Cardiovascular-Renal Research, and Dean of the School of Graduate Studies in the Health Sciences at the Univ. of Mississippi Medical Center in Jackson, MS. He earned his doctorate from Arthur C. Guyton's Physiology Department at the Univ. of Mississippi Medical Center and where John E. Hall served as his PhD mentor. He received his postdoctoral training in physiology in the laboratory of Franklyn G. Knox at the Mayo Clinic from 1983–1985. He was appointed Assistant Professor of Physiology at Mayo Medical School in 1985. In 1986, he joined the faculty of the Department of Physiology at Eastern Virginia Medical School. In 1990, he moved back to the Univ. of Mississippi Medical Center.

Granger's research has focused on the role of the kidneys in the pathogenesis of hypertension. His early research examined the importance of renal interstitial hydrostatic pressure in mediating renal pressure natriuresis. He also examined the importance of atrial natriuretic peptide (ANP) in long-term control of sodium balance and arterial pressure. He demonstrated that ANP had potent actions on the renin-angiotensin system and that chronic physiological elevations in plasma ANP produced long-term improvement in renal pressure natriuresis and reductions in arterial pressure. His later work investigated the role of the renal endothelin and nitric oxide systems in various models of salt-sensitive hypertension. His current research focuses on the role of endothelial and neurohormonal factors in mediating hypertension in animal models of pregnancy-induced hypertension or preeclampsia. Utilizing the RUPP (Reduced Uterine Perfusion Pressure) model of placental ischemia, which was developed by the Granger laboratory, they demonstrated that placental ischemia in the pregnant rat has many of the features of preeclampsia in women. They are currently using this model for the investigation of the mechanisms linking placental ischemia and cardiovascular dysfunction in preeclampsia and for identifying potential drug targets for the treatment of preeclampsia. His laboratory has been continuously funded by the National Heart, Lung and Blood Institute (NHLBI) since 1985. Granger also currently serves as the principal investigator of a NHLBI Institutional Training Grant entitled, "Hypertension and Cardiorenal Diseases Research Training Program."

Granger has authored or co-authored over 200 peer-reviewed publications, many of them in APS journals. Granger is currently an Associate Editor for *Hypertension* and serves as Co-Editor with his brother, Neil Granger, on the eBook series entitled *Integrative Systems Physiology*. He has also served as the Editor of the *Council for High Blood Pressure Newsletter* and an Associate Editor for *News in Physiological Sciences* and *American Journal of Physiology: Regulatory and Integrative Physiology.* He is serving or has served as a member of Editorial Boards of *American Journal of Hypertension, American Journal of Physiology: Renal Physiology, American Journal of Physiology: Regulatory and Integrative Physiology, Journal of Cardio-Metabolic Syndrome* and *the Journal of the American Society of Hypertension*.

Granger serves on Leadership committees of several scientific organizations including the Council for High Blood Pressure Research of the American Heart Association and the Inter-American Society of Hypertension. He also serves on numerous scientific committees of the Council for High Blood Pressure Research, Inter-American Society of Hypertension, American Society of Hypertension, and the American Physiological Society. Within the American Physiological Society he has served as a Councilor, Chair of Committee on Committees, Long-Range Planning Committee, Career Opportunities Committee, Program Committee, President of the Gulf Coast Physiological Society, Chair of the Water and Electrolyte Homeostasis Section, Section Advisory Committee, Nominating Committee, Publication Committee, Finance Committee, Strategic Planning Committee, and as a mentor for the Frontiers in Physiology program and APS/NIDDK minority fellowship program and the APS Summer Undergraduate Research program. Granger has also served on scientific study sections for the American Heart Association, National Institutes of Health, NASA, and the Veterans Administration. He recently served as chair of the Hypertension and Microcirculation NIH study section. He also served on the National Board Medical Exam Physiology Test Development Committee.

Granger has received several awards including the American Physiological Society 2008 E.H. Starling Distinguished Lecture Award, American Physiological Society 2008 Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Award, Dahl Memorial Lecture of the American Heart Association, American Society of Hypertension Young Scholar Award, the International Society of Hypertension Demuth Research Award, Inter-American Society of Hypertension Young Investigator Award, the Regulatory and Integrative Physiology Young Investigator Award of the American Physiological Society Water and Electrolyte Section, the Harold Lamport Award of the Cardiovascular Section of the American Physiological Society, the Henry Pickering Bowditch Lecture of the American Physiological Society, and the Established Investigator Award of the American Heart Association. ❖

the next generation of physiologists.

Finally, APS also has been increasingly proactive in reaching out to other national societies in the spirit of collaboration and common scientific interest. For example, APS has been working closely with the leadership of The Physiological Society (TPS) for several years to have alternate yearly meetings between the UK and the USA. The first will be in the United Kingdom this summer and in 2012 TPS will join us at EB as we celebrate our 125th birthday. In addition, we are currently discussing possible collaborations with the Brazilian Physiological Society and other Latin American colleagues about jointly organizing a 2014 Pan-American Physiology scientific meeting. This meeting would involve every Physiological Society from Canada to Argentina. Further discussions of joint meetings are ongoing with physiological societies in Africa and Europe.

While APS has a number of strengths, our Society must recognize current and future challenges and threats. A number of significant challenges exist in many of our APS programs including in membership, publications, and meetings. Additional challenges that our members face include decreased visibility of physiology in our undergraduate universities and medical schools, declining paylines for research funding, and the growing strength of the animal rights movement. While APS faces many challenges, it is important that we mobilize our members and other resources to not only meet these challenges but also transform these challenges into opportunities. This can be achieved by developing long range plans to proactively address issues that confront our Society and its members.

Where are we going?
Strategic Planning

Under the leadership of Past President Peter Wagner, APS recently set out to develop a comprehensive strategic plan to identify specific long-term goals APS should pursue over the next five years. The Society convened a two-day strategic planning meeting in January in Orlando, FL. The Strategic Planning committee was composed of a diverse group of APS members including members from Council, section and committee chairs, Trainee Advisory Committee, and APS staff. The consulting firm, AltshulerGray, not only served as a facilitator for this meeting, but also assisted in all aspects of development of the strategic plan. In preparation for the meeting, the consultants conducted and analyzed a survey of the society's membership (We had an excellent response from our membership!). In addition, an analysis of APS finances and membership demographics and trends were performed to provide a comprehensive view of the current state of APS. This analysis was presented at the start of the strategic planning meeting to guide the discussions of the Strategic Planning committee. As a result of these discussions several global strategic priorities areas emerged. These include redoubling of the efforts to increase public awareness of, and advocate for, the discipline of physiology; actively pursuing opportunities to better attract, meet the needs of, and engage key membership subgroups; strengthening the society's journals by increasing the number and quality of submissions; providing more targeted opportunities for scientific interaction and exchange; increasing the visibility of physiology in undergraduate and medical education; and increasing the role of physiology and APS in the growing interest in translational research.

"While APS faces many challenges, it is important that we mobilize our members and other resources to not only meet these challenges but also transform these challenges into opportunities."

While the initial work by the Strategic Planning committee has identified several strategic priorities areas, our work is not complete. More discussion and work will be needed on the part of the Executive Cabinet and Council, APS staff and the APS membership to determine how best to structure and implement our five-year strategic plan. Once this plan is complete, the APS will be well-positioned to tackle the many challenges we face and transform these challenges into opportunities for our membership.

Goals for the Coming Year

My overarching goal for this upcoming year goal is to ensure that APS achieves its mission of promoting discovery, disseminating knowledge, and advancing education in physiology. My specific objectives are to: *1*) refine and implement the specific goals outlined at our recent Strategic Planning retreat; *2*) enhance the recruitment and training of the next generation of physiology researchers, educators, and leaders; and *3*) promote physiology as an essential element of translational research and medicine; and *4*) enhance advocacy for funding of physiological research.

Implementation of Specific Goals Outlined in Our Recent Strategic Planning Retreat

As mentioned above, several strategic priority areas were identified at our recent Strategic planning retreat. Additional work by APS Council and staff will be required to evaluate the potential impact and feasibility of pursuing each of these priority areas. Moreover, specific goals for each priority area must be developed and refined by appropriate standing APS committees or ad hoc committees. Finally, implementation tactics for each of the specific goals must be identified in order for our strategic plan to be effective. Thus, a major goal during this upcoming year will be to work with APS Council, staff and the APS membership to determine how best to structure and implement our five-year strategic plan.

Recruitment and Training of the Next Generation of Physiology Researchers, Educators, and Leaders

Trainees represent the future of our Society. Therefore, it is critically important that we make a concerted effort to involve and engage trainees at all levels of our society, from undergraduates to early stage investigators. While APS currently has a number of outstanding educational and mentoring programs focused at the undergraduate level, APS needs to place more resources in this area to enhance current programs and develop new programs to attract undergraduates to the discipline of physiology. It is also important that APS and the discipline of physiology obtain a greater presence on undergraduate campuses through the development of undergraduate physiology curricula and on-line

courses, expansion of local physiology chapters, and a streamlined membership process for our undergraduate students and trainees.

The APS Council and Sectional Advisory committee has made a concerted effort in recent years to encourage the active participation of trainees in our Society. Opportunities for trainees to serve on APS committees have increased. For example, the APS Committee on Committees has reserved positions on most APS committees specifically for trainees and for early stage investigators. More of our journals have reserved space for trainee editorials in the journals and there is a concerted effort to leverage sections and chapters to disseminate trainee-specific information created by the Trainee Advisory Committee. There are also plans to enhance trainee and early stage investigator participation in our local and national meetings by increasing trainee-only topic sessions at EB, trainee involvement in featured topic sessions, and increasing the number of trainees and early stage investigators who co-chair symposia at our meetings. Finally, I will also propose that our Society develop an APS Leadership Institute with the purpose of exposing promising early stage investigators to APS governance, programs and operations during a two-day meeting on our campus in Washington.

Another important issue that APS Council has been discussing over the last several years is the increasing number of challenges faced by our training programs including recruitment of trainees, declining institutional financial support, inconsistent fellowship support of trainees between the institutes at the NIH, and a decline in visibility of physiology training programs. There is strong consensus within APS Council that an annual meeting of training program directors dedicated to exchanging information concerning these challenges would benefit our training programs in physiology. Indeed, a National Directors of Graduate Studies (NDOGS) in Pharmacology meeting has been held for a number of years to address issues similar to those facing our physiology programs. Thus, Council thought it would be of benefit that members of APS Council attend NDOGS to determine the utility of such a meeting for physiology training program directors. Our first joint meeting with the NDOGS took place in April 2009 in New Orleans, LA, and was hosted jointly by Tulane University School of Medicine and LSU Health Sciences Center. I, along with several other key members of APS staff and membership, plan to attend and participate in the next meeting joint national meeting for APS and ASPET Directors of Graduate Studies in Pharmacology and Physiology. The meeting will be held in East Lansing, MI, July 7-9, 2011. Meeting objectives include: *1*) the identification of core knowledge and skills trainees need to be successful; *2*) establishing a dialogue among program directors; *3*) comparison of approaches to common problems and discuss potential solutions; and *4*) collection of key information concerning pharmacology and physiology graduate programs. I encourage all directors of physiology training programs to attend this important event. One agenda item I plan to bring to APS Council is whether APS should develop its own Council of Physiology Training Program Directors to address specific issues facing graduate and postdoctoral programs in physiological research.

Promoting Physiology as an Essential Element of Translational Research

The importance of translational research within the scientific community continues to grow. This is apparent in NIH's Roadmap and also by the recent announcement of NIH to create a new institute devoted to translational research. Moreover, the "significance" section on NIH proposals has become one of the more important criterions use by NIH study sections to assess overall impact of grant proposals. Because of the growing significance of translational research within biomedical research funding agencies, it is critical that the Society promotes physiology as an essential element in translational research. Physiologists are well positioned to accomplish this goal since many breakthroughs in drug discovery are made through physiological research. Furthermore, drug development requires animal models for preclinical study and physiologists are best prepared to develop and phenotype these animal models.

The idea of promoting APS as the Society for translational research is not new. In fact, ten years ago, John Hall initiated several translational initiatives including the publication of a "Physiology in Medicine" series in the *Annals of Internal Medicine*, the development of APS conferences and symposia that bridge physiology and clinical medicine, and promoting better interaction between APS members and clinicians through our journals. While APS has made efforts in promoting physiology as an essential element in translational research, more needs to be done especially in view of the increased significance of translational research by funding agencies. Indeed, APS has recently invigorated our Translational Interest group. There is also a concerted effort by APS to increase the representation of clinician-scientists within APS's membership, journals, and meeting programs. There is also discussion of creating an APS-branded fall translational meeting. This meeting could position APS at the forefront of translational research and help the Society promote the critical links between physiology and translational medicine.

To further highlight physiology as an essential element in translational research, I plan to use the Physiology in Focus component at Experimental Biology in 2012 to devote the four symposia that make up this program to highlight how physiology plays a critical role in linking scientific discoveries at a molecular, cellular, whole organ, and integrative level to drug discovery and improved care at the patient's "bedside." The four symposia will focus on different disease states and highlight how physiological research leads to development of novel therapeutic targets and improved patient care and outcomes.

Enhance Advocacy for Funding of Physiological Research

A major concern for many of our members is the future funding of biomedical research. We are all aware that the next few years will be even more difficult than it has been over the last few years. The funding "pie" is likely to shrink further. Thus, it is critical that APS members have the best opportunity to compete for their share of the pie. APS needs to be in a position to influence decisions made by legislators on Capitol Hill and by scientists at NIH who make decisions on funding priorities. Indeed, the Executive Cabinet of APS along with Science Policy Committee Chair John Chatham

recently met with officials at the National Institutes of Health to discuss APS priorities. The APS leadership met with Dr. Sally Rockey, Director of the Office of Extramural Research, Dr. Story Landis, Director of the National Institute of Neurological Disorders and Stroke (NINDS), Dr. James Kiley, Director of the Division of Lung Diseases at the National Heart, Lung and Blood Institute (NHLBI), and Dr. Greg Germino, Deputy Director of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The Executive Cabinet of APS (President, Past-President, President-elect, and Executive Director of APS) plans to increase our interactions with leaders of funding agencies such NIH, NSF, and NASA to ensure that the research funding concerns and priorities of APS members are known. In addition to these efforts, the APS Cabinet plans to step up our efforts at influencing research funding decisions made by legislators on Capitol Hill.

Another initiative I will be promoting this year is to increase the overall participation of APS members in NIH study sections, special emphasis panels, institute working groups, and institute council committees. An interesting analysis was performed by the late Dale Benos when he served as the 79th President of APS. Dale examined the percentage of regular study section members that were housed in departments in which "physiology" appears in the name and the percentage of regular study section members that belong to the APS. Study sections were chosen to examine those most likely to review grants submitted by physiologists (e.g., cardiovascular, renal, endocrine, transport, exercise, gastrointestinal, pulmonary, and neural). Of the total number of listed regular members in these 37 study sections, 11% belong to a physiology department, and only 18% are members of the APS. These percentages are far too low for our membership to have significant influence on funding decisions and priorities. Therefore, I will be proposing to Council that a standing committee of APS be formed to provide an annual analysis of APS member participation on NIH committee activities and to identify and recommend members of APS to the appropriate NIH staff members. It is only through this proactive approach we can ensure that APS members have a voice in critical funding and research priority decisions that are made at NIH. If successful, this initiative will also be expanded to other federal funding agencies that support physiological research.

Closing Remarks

While the biomedical community faces many challenges and threats, our Society has a reputation of transforming challenges into opportunities. This reputation is due in large part to our governance structure at APS and to the active planning and participation of its membership in societal affairs. However, APS would not be in the position it is in today without the efforts of an outstanding full-time staff that work tirelessly to execute the day-to-day functions of the Society. Our APS office has an outstanding team of department directors including Rita Scheman (Publications), Linda Allen (Membership & Meetings), Alice Ra'anan (Science Policy), Donna Krupa (Communications), Marsha Matyas (Education), Sue Sabur (Marketing), James Chapman (Information Technology/Computer Support), Bob Price (Business/Administration), and last but not least, Martin Frank and Linda Dresser in the Executive department. We all appreciate Marty's management style, his active role in providing information and vision for Council and the Executive Cabinet, and his long-term commitment to our Society and its members. ❖

APS News

APS Election Results

The American Physiological Society announces the results of the election of officers for 2011. **Susan M. Barman**, Michigan State Univ. is the new President-Elect. The three newly elected Councillors taking office on April 13, 2011 are **Dennis Brown**, Massachusetts General Hospital; **Patricia Molina**, Louisiana State Univ. HSC; and **Jane Reckelhoff**, Univ. of Mississippi Medical Center. The Councillors will each serve a three year term. ❖

Susan M. Barman

Dennis Brown

Patricia Molina

Jane Reckelhoff

Puerto Rico Physiological Society Holds Inaugural Meeting in San Juan, Puerto Rico

The inaugural meeting of the Puerto Rico Physiological Society (PRPS) was held on February 4, 2011 at the Univ. of Puerto Rico (UPR), Medical Sciences Campus in San Juan, PR. Under the title, "First Congress on Physiological Sciences," the PRPS gathered faculty, researchers, and students (postdoctoral, graduate and undergraduate) interested in the physiological sciences. Attendance at the meeting totaled 104 registered individuals and 24 research posters were presented by students from the three major medical schools on the island.

The meeting began at 9:00 AM with a welcome message from Dr. Pedro Santiago-Borrero, acting Dean of the UPR-School of Medicine and introductory remarks by Nelson Escobales, President of the PRPS and Director of the Physiology Department, UPR-School of Medicine. Escobales described the mission and objectives of the recently created PRPS and its major accomplishments that include, among others, a partnership with Pfizer Pharmaceuticals to develop an outreach program for high school students. He also

Elizabeth M. McNally, Keynote Speaker presents "Genetic Mechanisms of Cardiac and Muscle Disease."

PRPS members interacting at the poster session.

PRPS honors Jesús Santos-Martínez with a Distinguished Service Award. From left to right: Norman Maldonado, Nelson Escobales, Jesús Santos-Martínez, Martin Frank, and Guido E. Santacana.

Nelson Escobales, President of PRPS

Martin Frank presents "Your Science, Your Society: APS Approaching 125 Years."

Peter Lauf presents "APS Chapters: Grass Roots of the American Physiological Society."



Dr. Escobales presented the awards for the poster completion. From left to right: M.Y. Unyushin receives the First Place award on behalf of Adriana Huertas, Iris Salgado receives the Second Place award and Giselle Barreto receives the Third Place award.

described the participation of the Department of Physiology in the PhUn Week Program of the APS since 2007. Both programs, he indicated, are essential for the Chapter's mission because they create awareness about physiology among students and teachers in high schools, stimulating potential future scientists to consider physiology as an important career area. Finally, Escobales thanked this year's sponsors for their support which includes the American Physiological Society, Pfizer Pharmaceuticals, Oriental Bank, Kent Scientific, Ponce School of Medicine, Univ. Central del Caribe and the UPR-Medical Sciences Campus.

Following Escobales' remarks, Martin Frank, Executive Director of the APS, addressed the audience on the "APS approaching 125 years." Frank's presentation was followed by Peter Lauf who talked about "APS Chapters: Grass roots of the American Physiological Society." Lauf's visit to the UPR-Department of Physiology, two years earlier, played a critical role in the development of the PRPS. He also announced a starting contribution of $1,000 to develop the "P.K. Lauf and N.C. Adragna Travel Fellowship Award" to support an outstanding student to attend the Experimental Biology Meeting.

The scientific portion of the meeting began with the research keynote address by Elizabeth McNally, Professor from the Univ. of Chicago who specializes in inherited cardiomyopathies and the cardiomyopathy that accompanies neuromuscular disease. The title of McNally's presentation was "Genetic Mechanisms of Cardiac and Muscle Disease." McNally's presentation was followed by a luncheon and the Poster Session.

During the lunchtime session, the posters and the student presenters were evaluated by three judges on the overall quality of the presentations. The best three poster presentations received a cash award. The selections were as follows:

First Place: Adriana Huertas from Univ. Central del Caribe. The title of Huertas' presentation was "Inhibition of Monoamine Uptake in Astrocytes: Role in Cocaine-induced Behavioral Effects." (Advisor: MY Unyushin).

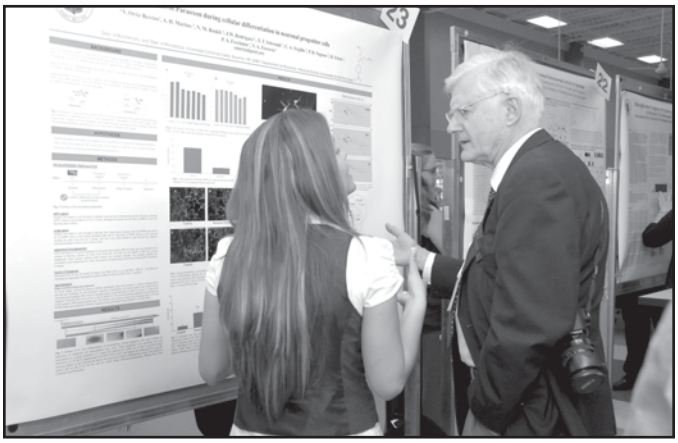
Second Place: Iris Salgado from UPR-School of Medicine. The title of Salgado's presentation was "SorLA in Glia is a Partner of the Membrane Raft Protein Caveolin-1" (Advisor: WI Silva).

Third Place: Giselle Barreto from UPR-School of Medicine. The title of Miss Barreto's presentation was: "The Role of PPARá in the Protective Effect of Metformin Against Cardiac

Alan Kopin, Special topics speaker deliver his lecture "Novel Recombinant Probes of GPCR Function: Utility in vitro and in vivo."

Alberto Nasjletti, Special topics speaker deliver his lecture "Vasoregulatory Function of Heme-Heme Oxygenases as Influenced by Redox Mechanisms."

Christian Bravo-Rivera presents his poster to Dr. Walter Frontera.

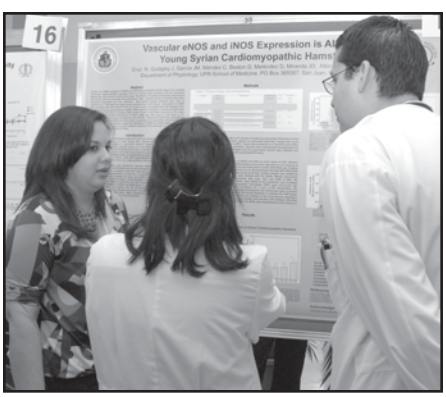


Verónica Ortiz-Berrios presents her poster to Peter Lauf.

Giselle Barreto (Porter Fellow, APS) presents her poster to Martin Frank.

Ischemia-Reperfusion in Rats" (Advisor: S Javadov).

In the afternoon, Alan Kopin from Tufts Univ. presented a talk on "Novel Recombinant Probes of GPCR Function: Utility in vitro and in vivo." He was followed by Alberto Nasjletti from New York Medical College who spoke about "Vasoregulatory Function of the Heme-Heme Oxygenase System as Influenced by Redox Mechanisms."



Nildris Cruz (left) presents her poster to meeting attendees.

Following the scientific presentations, the PRPS honored Dr. Jesús Santos-Martínez with a Distinguished Service Award for his outstanding career and contribution to medical education in Puerto Rico. Dr. Santos-Martínez was part of the initial faculty of the Department of Physiology in 1954. He conducted postdoctoral work with Ewald E. Selkurt at Indiana Univ. and was a member of the Porter Physiology Program Committee. He played a critical role in the foundation of other Medical Schools in PR and has trained numerous students throughout the years.

The congress concluded with the Business Meeting. The agenda for the meeting included the financial report by Priscila Sanabria, Secretary-Treasurer and the presentation of Leon Ferder as the incoming 2011-2012 PRPS President. President Escobales thanked the support that he received from the Executive Committee and all individuals that helped to make the meeting a success. Following Ferder's acceptance as new President of the Chapter for 2011-2012, the new President Elect was voted. The members supported the nomination of Jorge Miranda (UPR-School of Medicine) as new President-Elect of the Chapter. Amelia Rivera from Univ. Central del Caribe was elected Councilor.

2011-2012 Officers:
President: Leon Ferder
President-Elect: Jorge D. Miranda
Past President: Nelson Escobales
Secretary/Treasurer: Priscila Sanabria
Councilor: Caroline B. Appleyard
Councilor: Eugenio Longo
Councilor: Jose O. Garcia
(Postdoctoral student)
Councilor: Amelia Rivera

The meeting concluded at 5:00 PM. ❖

Nelson Escobales, PRPS

PRPS Inaugural Meeting participants. From left to right: Leon Ferder (Incoming PRPS President), Alberto Nasjletti, Nelson Escobales, Elizabeth McNally, Norma Adragna, Peter Lauf, Alan Kopin, and Martin Frank.

The Third Annual Meeting of the Arizona Physiological Society

The Department of Physiology Faculty of the Arizona College of Osteopathic Medicine of Midwestern University (MU) located in Glendale, AZ hosted the third annual meeting of the Arizona Physiological Society November 5-6, 2010. There were 84 members of the Society from five university campuses that registered for the meeting which represented 85% of the total membership. Of those in attendance, 36% were Regular Members, 36% were Graduate Student Members, 17% were Postdoctoral Trainees, and 11% were Undergraduate Student Members. Funds from the American Physiological Society, the various universities and the NIH Training Grant awarded to Dr. Janis Burt (UA-TUS) help provide the financial support necessary to support the meeting.

After extending greetings to those in attendance for the Graduate Student oral presentations and before chairing the session, Johanna Vallejo (MU) introduced the session and herself by presenting, "Insulin resistance and caveolae membrane microdomains: Is there a connection?" Subsequently, nine graduate students presented papers on a myriad of interesting topics that created considerable interest and discussion by the audience. Individuals selected for the awards and the titles of their presentations can be found in Table 1.

Following the oral presentations and in an adjacent room, the Graduate Student Poster Session was held with 18 individuals making presentations. With the aid of delicious refreshments, interesting and lively discussions were held on multiple subjects throughout the afternoon. Because of the quality of the presentations, judges had difficult decisions to make; however, they were up to the task and the names of the award winners and their poster titles are listed in Table I.

At the reception, Dr. Christos Katsanos (ASU) and Dr. James Weiss, Keynote Speaker.

During the poster session, a tour of the Arizona College of Osteopathic Medicine was led by Chad Carroll (MU) for undergraduate students in Arizona interested in a medical career. Because of faulty promotion by the Society, it was not as effective as envisioned.

Later, President Stan Lindstedt (NAU) chaired the APS Keynote Lecture which featured Professor James Weiss from the David Geffen School of Medicine at the Univ. of California at Los Angles (Figure 3). He is also Chief of the Division of Cardiology and Director, Cardiovascu-lar Research Laboratory at UCLA. After being introduced by Dr. Burt, he presented a lecture-discussion session on, "Cardiac ischemia/reperfusion injury: The good, the bad, and the ugly," which not only interested, stimulated and educated the membership, it created an extensive discussion on the issues to be resolved. Following the lecture, the members attended a nearby reception, whose food, spirits and fellowship were enjoyed by all well into the night.

Saturday morning began with a Featured Topic entitled Topics in Lung Physiology that was chaired by President Elect, Scott Boitano (UA-TUS) who spoke on "Airway Remodeling in Disease." He was followed by Ralph Fregosi (UA-TUS) whose presentation was entitled, "Understanding Apnea." Both talks were informative, well received and extensively discussed by the audience.

The morning program also featured a poster session of presentations by 14 Regular Members and Postdoctoral Trainees and seven Undergraduate Student Members. Their titles ranged from, "Does genetic variation in titin affect mouse locomotion" (C. Pace, NAU), to "Adrenal demedullation abolishes hypoxemia-induced catecholamine suppression of glucose stimulation insulin secretion in fetal sheep" (D. Yates, UA-TUS), to "Weight loss and adipokine changes in mountaineers at 5300 m" (T. Broderick, MU). Also included in Table 1 are the names and titles of the posters by undergraduate students.

A poster session at the AzPS meeting.

After the break, President Stan Lindstedt introduced Bill Dantzler (UA-TUS) for the Arizona Distinguished Lecture (Figure 5) which was entitled "Contributions of the comparative approach to the understanding of renal physiology." As expected, and verified by the evaluation forms, the presentation was interesting, informative, and a major highlight of the meeting.

The afternoon session began with a 30-minute business meeting chaired by our President that included the recognition of Layla Al-Nakkash (MU) for organizing the meeting and of Linda Baughn (UA) for her administrative efforts in making the meeting a success. He subsequently introduced the new officers [President-Elect: Scott Boitano (UA-TUS); Councillor, Postdoctoral Trainees: Ted Uyeno (NAU); Councillor, Graduate

A graduate student oral presentation by Sarah Kuzmiak (ASU).

At the reception Taben Hale Christos Katsanos, Rayna Gonzales and Tom Broderick.

Award winners: Stoyan Angelov, Cara Sherwood, Krysta Powers, John Kanady, Sarah Kuzmiak, Mateja Lekic, Lauren Biwer, and Devin O'Connor.

Recognition of the Arizona Distinguished Lecturer, Bill Dantzler and President Stan Lindstedt.

Student Members: Nathaniel Hart (UA-TUS)]; announced that the title Councillor had replaced the term, representative, within the Bylaws concerning the composition of the Executive Committee. He then had judges present awards to undergraduate and graduate students (Table 1). A discussion then ensued concerning the hosting and location of the 2011 meeting which was not resolved.

The closing session of the meeting was chaired by Michael Quinlan (MU) which consisted of nine integrated oral presentations by Regular Members and Postdoctoral Trainees. Select titles of their presentations were, "Is titin a winding filament" (K. Nishikawa, NAU); "Repetitive motion strain (RMS) induces human fibroblast (HF) sensitivity to nitric oxide (NO) in vitro: Potential roles of myofascial release (MFR) in wound healing" (T. Coa, UA-PHX), and "Critical role of the transient activation of p38 MAPK in the etiology of skeletal muscle insulin resistance caused by low-level in vitro oxidant stress" (M, K. Diamond-Stanic, UA). Like the previous oral presentations, the topics were interesting and stimulated much discussion points. At approximately 4:45 PM, Chairman Quinlan adjourned the meeting and reminded those in attendance to return their evaluation forms to an AzPS representative.

The majority of the questionnaires were complimentary and supportive of continuing the current format. As noted, the highlight of the meeting was Dantzler's lecture. However, many wanted future meetings in Phoenix and Flagstaff; a session Chair who keeps on schedule; an earlier ending time for the reception; no concurrent sessions; re-examination of the poster presentation format, and a change so that postdoctoral trainees could receive awards. ❖

Charles M. Tipton

Table 1. Undergraduate and Graduate Student Awardees

Oral Presentations: Graduate Students

First Prize: Jennifer Fang, Univ. of Arizona; "Connexin40-Deficient Mice Reveal Angiotensin II-Dependent and -Independent Mechanisms of Post-Ischemic Tissue Survival and Recovery"

Second Prize: John Kanady, Univ. of Arizona; Early Lymphatic Developmental Consequences in Mice Lacking Connexin 37 and Connexin 43

Third Prize: Sarah Kuzmiak, Arizona State Univ.; "Pyruvate Sparing by Fatty Acid and Glutamate in Sparrow Skeletal Muscle Mitochondria"

Poster Presentations: Undergraduate Students

First Prize: Devin O'Connor, Univ. of Arizona, Phoenix; "Endotoxin- or Hypoxic-Induced TLR4 Expression is Blunted by Dihydrotestosterone in Primary Human Vascular Smooth Muscle Cells"

Second Prize: Lauren Biwer, Univ. of Arizona, Phoenix; "Transient Ace Inhibitor Treatment is SHR Confers Protection Against L-Name Induced Diastolic Dysfunction"

Third Prize: Mateja Lekic, Arizona State Univ.; "Characterization of ACh-Mediated Vasodilation in Tibialis and Mesenteric Arteries Isolated From Mourning Doves

Poster Presentations: Graduate Students

First Prize: Stoyan Angelov, Univ. of Arizona; "Role of Cx43 and its MAPK Target Sites in Mesenchymal Cell Differentiation"

Second Prize: Cara Sherwood, Univ. of Arizona; "Arsenic Alters Barrier Properties in Human Airway Epithelial Cells"

Third Prize: Krysta Powers, Northern Arizona Univ.; "The Relative Contributions Of Titin and Collagen to Passive Tension in the Whole Mouse Soleus Muscle"

Award winners received $100 for First Prize, $50 for Second Prize, $25 for Third Prize.

New Regular Members

***transferred from student membership**

Zhibo An*
Univ. of Cincinnati, OH
Judy E. Anderson
Univ. of Manitoba, Winnipeg, Canada
Gregor Belusic
Biotech. Faculty, Ljubljana, Slovenia
Nina Boiko
Univ. of Texas HSC, San Antonio, TX
Edlira Bashari Clark
Univ. of Alabama, Birmingham
John A. Dani
Baylor College of Med., Houston, TX
Mathew Ernest Diamond
Int'l. Sch. of Adv. Studies, Trieste, Italy
Wassim EL-Jouni
Brigham and Women's Hosp., MA
Racine Emmons*
Private Company, Staten Island, NY
David Edwin Gerrard
Virginia Tech.
Ali Gharavi
Columbia Univ., NY
Rachael M. Hannah*
Univ. of Vermont, Burlington
Rebecca Nolan Harris
Pitt Comm. College, Winterville, NC
Christian John Hunter
NIH, Bethesda, MD
Bryan P. Hurley
Mass. Gen. Hosp./Harvard Univ., MA
Masahiro Ikeda
Univ. of Miyazaki, Japan
Dachuan Jin
Univ. of Texas HSC, San Antonio
Chintamani N. Joshi
East Carolina Univ., NC
Daniel Alan Kane
St. Francis Xavier Univ., Canada
Jinu Kim
Univ. of Nebraska Med. Ctr.
Adrienne Lester King
Emory Univ., Atlanta, GA
William B. Kist
Southern Arkansas Univ.
Roberta Lima
Univ. of Mississippi Med. Ctr.
Emily S. Louis*
Cleveland Clinic Lerner Res. Inst., OH
Cristiane Matsuura*
Exercito Brasileiro, Brazil
James McCormick
Oregon Health and Science Univ.
Michelle Y. Monette
Yale Univ. Sch. of Med., CT
James M. Mullin
Lankenau Inst. for Med. Res., PA
N. Nanda Nanthakumar
Harvard Med. Sch., MA
Yoshiyuki Okada
IEEM, TX Hlth Presbyterian Hosp., Dallas
Shankar Parajuli
Univ. of South Carolina, Columbia
Bongsup Park
Florida State Univ.
Sungkwon Park
Virginia Tech.
Clarissa Carlin Parker
Univ. of Chicago, IL
Sumanth Polikepahad
Baylor Coll. of Med., Houston, TX
Karen K. Porter*
Washington State Univ.
Benjamin Lee Predmore
Emory Univ., GA
Jeanine J. Prompers
Eindhoven Univ. of Tech., Netherlands
Pier Lorenzo Puri
Sanford-Burnham Med. Res. Inst., CA
Pavithran Purushothaman*
A. J. Inst. Med. Scis., Kasaragod, Kerala, India
Jeremy Roy
Massachusetts Gen. Hosp., Boston
Prajni Sadananda
Univ. of Bristol, UK
Denis Sarrouilhe
Univ. De Poitiers., France
Patricia Shamhart
Univ. of Texas HSC, San Antonio
Anita K. Sharma
Univ. of of Manitoba, Canada
Bradley P. Sutton
Univ. of Illinois, Urbana-Champaign
Joshua M. Swift*
Armed Forces Radiobiol. Res. Inst., MD
Lidia Szczupak
Univ. of Buenos Aires, Argentina
Cassandra Talerico-Kaplin*
Cleveland Clinic, OH
Hirotsugu Tsuchimochi
Nat'l. Cerebral/Cardio. Res. Ctr., Japan
Victoria Jeanne Vieira Potter
HNRCA At Tufts Univ., Quincy, MA
Junjie Wang*
Univ. of Miami, FL
Mark Edward Wylam
Mayo Clinic College of Med., MN
Bo Xu
Univ. of Nebraska Med. Ctr., Omaha
Ayesha Zafir
Univ. of Louisville, KY
Li-Ming Zhang
Univ. of Pittsburgh, PA

New Undergraduate Student Members

Sarah Kerr
Univ. of Stirling, UK
Zheng Su
Grinnell College

New Affiliate Members

Joseph Anthony Giandonato
Children's Hospital of Philadelphia, PA
Jacqueline Norma Minas
Univ. of California, Sacramento
Cory David Suski
Univ. of Illinois, Urbana-Champaign

Moving?

If you have moved or changed your phone, fax or Email address, please notify the APS Membership Office at 301-634-7171 or Fax to 301-634-7241. Your membership information can also be changed by visiting the Members Only portion of the APS Website at http://www.the-aps.org. ❖

New Graduate Student Members

Jean Marie Acevedo
Univ. of Puerto Rico Med. Sci.
Nicholas William Aguirre
California State Univ., Fullerton
Afrah Al-Najeer
Univ. of Guelph, Canada
Othman Al-Shboul
VCU Medical Ctr., VA
Lora Bailey-Downs
Oklahoma Univ. HSC
Chandra S. Bathina
Univ. of North Texas HSC
Jessica Bradley
Lousiana State Univ. HSC
Edwardo Bravo
Univ. De Santiago, Chile
Jerry Brunson
Lousiana State Univ., HSC
Yana Chen
Univ. of California, Davis
Marni Crow
Montclair St. Univ., NJ
Benjamin Dubansky
Lousisana State Univ.
Kimberly Fisher
Virginia Tech.
George Fraser
Univ. of Pittsburgh, PA
Chad Frasier
East Carolina Univ., NC
Rajesh Kumar Goit
BP Koirala Inst. for Hlth. Scis., Nepal
Juliana Guimaraes
Fed Univ. Minas Gerais, Brazil
Katrin Hollinger
Iowa State Univ.
Miguel S. Illan
Loma Linda Univ., CA
Jamie Johnson
Indiana Univ. Sch. of Med.
Steven Kasten
Virginia Tech.
Liu Dave Liu
McGill Univ., Canada
Jonathon Miner
Univ. of Oregon
Lynnette Montgomery
Ohio State Univ.
Diana Morales
Ponce Sch. of Med., Puerto Rico
Jessica Murray
Saint Louis Univ., MO
Julie Anna O'Neill
Univ. College of Cork, Ireland
Caroline Palavicino-Maggio
New Jersey Med Sch., UMDNJ
Craig Porter
Univ. of Nottingham, UK
Nabil Rashdan
Oklahoma State Univ.
J. Thales Reboucas
Univ. of Sao Paulo, Puerto Rico
Nikki Rendon
Indiana Univ., Bloomington
David Ritter
Thomas Jefferson Univ., PA
Juliane Rose
Univ. of Georgia
Sheila Rupert
California Univ. of PA
David Russell
Univ. of Auckland, New Zealand
Dhiresh Salvi
RNT Medical Sch., India
Conner Sandefur
Univ. of Michigan
Allison Savino
Johns Hopkins Univ., MD
Tracy Scheffler
Virginia Tech.
Jessica Schwartz
Georgetown Univ., DC
George Schweitzer
Univ. of Michigan
Praveen Shukla
North Dakota State Univ.
Anwar Hasan Siddiqui
Jawahar Lal Nehru Med. Coll., India
Josh Stone
East Carolina Univ., NC
Erica Taylor
Univ. of Alabama, Birmingham
Xu Teng
Louisiana State Univ., HSC
Peter Toth
New York Med. Coll.
Menizibeya Welcome
Belarusian State Med. Univ., Belarus
Kevin White
Univ. of Glasgow, UK
Lawrence Louis Wolfgang
Pennsylvania State Univ.
Esma Zeydanli
Ankara Univ., Turkey
Sasha Zheng
Medical College of Wisconsin
Fouad Zouein
Univ. of Mississippi Med. Ctr.
Marten Frans Zwart
Univ. of Cambridge, UK

Recently Deceased Members

Colin E. Bayliss
Bath, ON, Canada
James O. Davis
St. Louis, MO
Maximo Deysine
Garden City, NY
William M. Dickson
Tacoma, WA
Clement A. Finch
La Jolla, CA
Sankar N. Koyal
South Pasadena, CA
Christian J. Lambertsen
Newton Square, PA
Vincent Lopez-Majano
Chicago, IL
Peter T. Macklem
Montreal, PQ, Canada
Leon L. Miller
Rochester, NY
David Minard
Cambridge, MD
Michael R. Morissette
Morgantown, WV
Robert O. Rawson
Guilford, CT
Bruce D. Sidell
Orono, ME
Arthur M. Spanier
Rockville, MD
Franz Von Bruchhausen
Schonfeld, Germany
Talbot H. Waterman
New Haven, CT

2011 Caroline tum Suden/Frances Hellebrandt and Steven M. Horvath Professional Opportunity Awardees

The Caroline tum Suden/Frances Hellebrandt awards provide funds for junior physiologists to attend and participate fully in the Experimental Biology meeting. The tum Suden award is granted to as many as 36 male or female graduate students or postdoctoral fellows. The top two minority recipients will be designated as Steven M. Horvath Awardees.

To be considered for the award, the candidate must be the first author of an abstract submitted to APS and must be a member of APS at the time of application. To receive the award, recipients must attend EB, present a poster at the meeting, and attend the APS Business Meeting. The awardees receive $500 and complimentary registration for the Experimental Biology meeting. Awardees are selected by the Women in Physiology Committee.

For more information about these awards, visit http://www.the-aps.org/awards/student/tumSuden.htm or contact the Education Office at education@the-aps.org.

The APS congratulates the 2011 tum Suden/Hellebrandt and Horvath (*) Awardees:

Priya Balasubramanian, Michigan State Univ.
Rebecca Bruning, The Pennsylvania State Univ.
Priscila Cassaglia, Oregon Health & Sciences Univ.
Kavaljit Chhabra, LSUHSC, New Orleans
Wen-Shuo Chung, Univ. of Mississippi Medical Center
Anna D'souza, York Univ.
John Durocher, Michigan Technological Univ.
Michelle Eagle, Tulane Univ. School of Med
Di Feng, Medical College of Wisconsin
Michael Hicks, Arizona State Univ.
Lily Huang, Tulane Univ.
Kristen Jablonski, Univ. of Colorado, Boulder
Wararat Kittikulsuth, Medical College of Georgia
Kristine Kurtz, LSUHSC
Keisa Mathis, Univ. of Mississippi Med Center
Mariela Mendez, Henry Ford Hospital
Jessica Otis, Univ. of Wisconsin-Madison
Vanesa Ramseyer*, Henry Ford Hospital
John Reho, The Univ. of Akron
Stefano Rimoldi, CHUV, Lausanne
Erin Rosenbaugh, Univ. of Nebraska Medical Center
Caroline Smith, The Pennsylvania State Univ.
Jessica Snow, Univ. of New Mexico School of Medicine
Jesse Solomon, York Univ.
Alexandra Soto-Pina, Univ. of Texas HSC at San Antonio
Joshua Speed, Univ. of Mississippi Med Center
Kathryn Spitler, Medical College of Georgia
Anna Stanhewicz, The Pennsylvania State Univ.
Kristi Strey, Univ. of Wisconsin Madison
Madhan Subramanian, Michigan State Univ.
Danielle Templeton, Univ. of Colorado - Boulder
Keshari Thakali*, Univ. of Arkansas Medical Sciences
Carmen Troncoso Brindeiro, Dartmouth Medical School
Zhen Wang, Univ. of Arkansas for Medical Sciences
Crystal West, Virginia Commonwealth Univ.
Annie Whitaker, LSUHSC, New Orleans
Justin Wilson, Howard University
Huan Yang, Michigan Technological Univ. ❖

APS/NIDDK Minority Travel Fellowship Awards Program

Since its inception in 1987, the APS/NIDDK Minority Travel Fellowship Program has awarded more than 770 travel fellowships to over 534 undergraduate, graduate, and postdoctoral students and to faculty members at minority institutions. It is an effective program model that capitalizes on a critical impact point where professional societies can make a real difference -- catalyzing the development of important professional networks for undergraduate, graduate, and postdoctoral minority students in physiology and biomedical research that can increase their retention in these fields.

For more information about the APS Minority Travel Fellowship Awards, contact Brooke Bruthers, Minority Programs Coordinator, at bbruthers@the-aps.org or visit http://www.the-aps.org/education/minority_prog/stu_fellows/minority_tvl/ov_mt.htm.

The APS, on behalf of the Porter Physiology Development Committee, is pleased to congratulate the following awardees of the APS/NIDDK Minority Travel Fellowship Awards to attend Experimental Biology 2011:

Sherry Adesina, Emory Univ.
Timetria Bonds, Univ. of South Florida College of Medicine
Dee Dee Canionero, Tuskegee Univ.
Leroy L. Cooper, Brown Univ.
Marielly Cuevas, Ponce School of Medicine
Mark W. Cunningham, Univ. of Florida College of Medicine
Jussara M. do Carmo, Univ. of Mississippi Medical Center
Elise L. Donovan, Colorado State Univ.
Lincoln P. Edwards, Loma Linda Univ.
Ashley M. Fennell, Meharry Medical College
Teresa E. Foley, Univ. of Colorado
Zarine I. Garcia, Colorado State Univ.
Jose O. Garcia, Univ. of Puerto Rico, Medical Sci. Campus
Mary L. Garcia-Cazarin, Univ. of Kentucky
Fernanda R. Giachini, Medial College of Georgia
Ebony T. Gilbreath, Michigan State Univ.
Jessica Martinez Ibarra, Univ. of Texas HSC, San Antonio
Erin M. Keen-Rhinehart, Susquehanna Univ.
Annet Kirabo, Univ. of Florida College of Medicine
Santiago Lorenzo, Inst. for Exercise and Environ. Medicine, Texas Health Presbyterian, Dallas
Alain Marcelin, Eastern Illinois Univ.
Jaume Padilla, Univ. of Missouri
Kristi M. Porter, Emory Univ.
Rhonda Prisby, The Univ. of Texas at Arlington
Clintoria L. Richards Williams, Emory Univ./Atlanta VA Med. Ctr.
Flavia M. Souza, LSUHSC
Keshari M. Thakali, Univ. of Arkansas Medical Sciences
Inimary Toby, Civil Aerospace Medical Institute
Kedra Wallace, Univ. of Mississippi Medical Center
Junie P. Warrington, Univ. of Oklahoma HSC
Annie Whitaker, LSUHSC, New Orleans
Brek Wilkins, Oklahoma State Univ. Ctr. for Health Sci. ❖

APS Supports Local and Regional Science Fairs

Would you like to be a science fair judge at your local school and present an APS award?

Each year the APS sponsors awards at local and regional science fairs on a first come, first serve basis. The APS awardee receives an APS t-shirt, pin, and a Certificate of Achievement for the best physiology-related project. The student's teacher receives a copy of the APS book, *Women Life Scientists: Past, Present, and Future* and an APS teacher resource packet. Any APS member who participates as a judge in a local or regional science fair at an elementary, middle, or high school is eligible to apply and receive APS support for one award per year.

To request an award package, visit the APS Science Fair website or contact Scarletta Whitsett (swhitsett@the-aps.org) at the APS Education Office.

www.the-aps.org/education/sciencefair

Highlights from PhUn Week 2010

Nearly 9,000 students from kindergarten through twelfth grade met a physiologist during Physiology Understanding Week (http://www.PhUnWeek.org). As part of the APS member-based annual outreach program to local classrooms in the fall, the visits and engaging activities highlighted physiology topics ranging from exercise and health, respiration, anatomy, and thermoregulation. Sixty three events in November were coordinated by nearly 240 APS members and scientists who volunteered their expertise and time to work with close to 210 teachers and science educators across 23 states, Puerto Rico, and Canada.

Events with the lead APS members and teacher coordinators are listed below. Many more volunteers, including scientists, teachers, and even peer-tutoring students, at each event site made PhUn Week another huge success for the APS. Each local event was uniquely planned and customized by the APS member and the teacher. For example, some events had APS members visiting small classrooms, others had lab group members engaging with multiple classes in a day, while a few had large assemblies and a crew of volunteer scientists and teachers. The following are selected vignettes of PhUn Week 2010 events.

At the Boston Children's Museum in Massachusetts, a PhUn Week event site since 2007, the team led by APS member Andrea Gwosdow engaged visitors with a museum activity called "Keep the Heat," a comparative physiology activity showing how heat moves through the coats of different animals. Materials donated by VWR Education were a big hit, and included x-ray films for observation, along with slides that were used on student microscopes. For the older children, stethoscopes were used at an obstacle course so they could listen to their heart beat before and after they ran around. All of the volunteers learned about working with kids and sharing science at the appropriate level of understanding.

Also in Massachusetts, a Weymouth school event was coordinated by Diana Cost, a past Frontiers in Physiology Research Teacher, in collaboration with a team led by APS Trainee Advisory Member Bryan Helwig from the US Army Research Institute of Environmental Medicine in Natick. The team taught middle school students the effects of the environment on the body and how to avoid heat injuries, a "real world connection for…students to see how technology is used with infrared cameras and how computers analyze data" (from Weymouth High School's December newsletter).

In New York City, APS member David Spierer (Long Island Univ., Brooklyn Campus) planned his visit with teachers at a primary school (kindergarten and second grade) to highlight the importance of the heart muscle. The discussions and activities focused on the anatomy, function, and significance of the heart. The class was taught through the use of models, pictures, diagrams, coloring activities, and passive and active activities to engage the children.

At the Little Rock Central High School, APS members Perry Chowdhury and Michael Soulsby (Univ. of Arkansas for Medical Sciences) started with classroom lectures on cardiovascular and respiratory physiology concepts. The session was then followed by a live demonstration of an animal experiment showing the tail suspension of a rat by hindlimb suspension simulating a NASA-validated animal model of microgravity. The students were very impressed to see the scientists at work in a physiology experiment with non-invasive methods and also without any harm inflicted to the animal. Soulsby and Chowdhury relayed the entire procedure to the students with appropriate background information, relevance and anticipated

APS President Joey Granger visits and excites the second grade class of Heather Simmonds at Sudduth Elementary School in Starkville, MS.

outcomes of the experiment.

The 2010 APS K-12 Outreach Fellows, Jessica Ibarra (Univ. of Texas Health Science Center at San Antonio) and Annie Whitaker (Louisiana State Univ. Health Sciences Center), coordinated PhUn Week events in their respective communities. In San Antonio, Ibarra worked with Anne Joy, a past Frontiers in Physiology Research Teacher, and introduced her students to cardiovascular, muscular, and respiratory systems. The middle school students then learned how to monitor their own hearts, muscles, and lungs by measuring the air they exhale into a balloon. Ibarra worked with five other teacher leaders at different schools to impact a thousand students.

In New Orleans, Whitaker and APS Education Committee member Lisa Harrison-Bernard engaged elementary students in modeling blood flow through healthy vessels versus damaged and narrower ones. They used regular drinking straws and narrower coffee stirrer straws, and had students drink juice through them. This activity is also modified as a PhUn Week Phizzy Bear activity available at the http://www.PhUnWeek.org program website.

Coordinators received guidance in organizing and planning events from the APS Education Office. Students received free educational resources from the APS, such as physiology-related comic books, career brochures, and promotional memorabilia, such as squeezy anatomical hearts and drawstring sportpacks. The team of presenting volunteers received PhUn Week 2010 t-shirts, while APS member and lead teacher coordinators also received PhUn Week luggage tags in appreciation for their work in planning an outreach event in their community.

Plans are already underway for PhUn Week 2011 during the week of November 7-11, 2011. For more information and to start planning an event in your home town, join us at the PhUn Week training session with poster presentations on Sunday, April 10 during EB 2011 (7:00-8:30 am, Washington Convention Center, West Salon I). Bookmark the program website www.PhUnWeek.org, and share with a teacher in your neighborhood. For any questions, email: phunweek@the-aps.org. ❖

PhUn Week 2010 APS Member Coordinators and Teacher Coordinators

(PS: Primary School, ES: Elementary School, MS: Middle School, HS: High School)

Edlira Bashari Clark, Univ. of Alabama, Birmingham with Linda Cronican (PS)
Stephen Biscotte, Cave Spring High School, Roanake, VA (HS)
Steven Bloomer, Penn State Univ., Abington with Rebecca Pizzino (HS)
Erika Boesen, Medical College of Georgia with Julie Poppell (ES)
Aaron Bunker, Morningside College, Sioux City, IA with Sara Bunker (MS)
Lauri Byerley, Louisiana State Univ. with Cheryl Williams (HS) and Janiece Mistich (ES)
Helena Carvalho, Virginia Tech at the Kids Tech Fair (ES)
Parimal Chowdhury, Univ. of Arkansas with Melissa Donham (HS)
Joseph Covi, Univ. of Wisconsin, Stevens Point, WI (MS)
Jacqueline Crissey, Univ. of Missouri-Columbia with Brenda McCommis (PS/ES)
Robby Demes, USARIEM, Chardon, OH with Edward Mullaly (PS)
Lara Deruisseau, Le Moyne College, Syracuse, NY at a pre-school (PS)
Travis Doggett, Louisiana State Univ. with Chris Loewe (ES/MS)
John Edwards, New York Medical College with Samuel Washington (PS/HS)
Nelson Escobales and Jose Colon Garcia, Univ. of Puerto Rico with Noel Cuevas-Fuentes (HS)
Jeff C. Falcone, Univ. of Louisville with Fred Klausing and Margaret Shain (PS/MS)
Janet Fisher, Univ. of South Carolina with Helena Wilson (HS)
Jason Gardner, Louisiana State Univ. with Michele Pennington (MS)
Barbara Goodman, Univ. of South Dakota with Sally Stoll (MS)
D. Neil Granger, Louisiana State Univ. with Robert Manriquez (ES)
Joey Granger, Univ. of Mississippi with Heather Simmonds (PS)
Andrea Gwosdow, Gwosdow Associates Science Consultants with Alissa Daniels at the Boston Children's Museum (PS/ES/MS)
Patricia Halpin, Univ. of New Hampshire with Heather Cantagallo (ES)
Lisa M. Harrison-Bernard, Louisiana State Univ. with Ashley Bivona (ES)
Rebecca Hartley, Seattle Univ. with Judy Barrere (MS)
Lynn Hartzler, Wright State Univ. with Norma Russell (PS/MS)
Debra Hasan at Newton County Schools, Covington, GA (MS)
My Helms, Emory Univ. at a middle school
Bryan Helwig, US Army Research Inst. Environmental Medicine, Natick, MA) with Diana Cost (MS/HS)
David Holtzclaw and Sarah Clayton, Univ. of Nebraska with Nicole Schwab (MS), Shelly Avery (MS/HS), Jean Whitten (HS), and Betty Smith (PS/ES/MS)
Jessica Ibarra, Univ. of Texas HSC with Oralia Serros (PS/ES), Cynthia Ritz (HS), JoAnn Guerrero (MS), Anne Joy (MS), Teresa Castro (ES)
Kelvin Jones, Univ. of Alberta, Edmonton, with Shawn Magee (HS)
Derek Kingsley, Indiana State Univ., with Becky Bear (HS)
Jonathan Lowery, Harvard School of Dental Medicine) with Mrs. Kilgore in Jasper, AL (HS)
Steve Miller, Indiana Univ. with Norman Leonard (HS)
L. Gabriel Navar, Tulane Univ. with Charlene Byrd (MS)
Michael Ryan, Univ. of Mississippi with Angie Awad (MS) and Denise King (ES)
Jennifer Sasser, Univ. of Florida, with Michelle Wetz (PS) and Vicki Ambrose (MS)
Christine Schnackenberg. GlaxoSmithKline with Matthew Wise (ES) and Julie Lojek (PS)
Harold Shlevin, Georgia Inst. of Tech. with Christine Hippeli (MS)
Tonya Smith at St. Andrews Middle School, Columbia, SC (MS)
David Spierer, Long Island Univ., Brooklyn, NY with Christa McDonald (PS)
Jennifer Sullivan, Medical College of Georgia, with Kimberly Phillips (PS)
Nicholas Tsoukias, Florida International Univ. with Suzanne Banas (MS)
Edith Walker, Louisiana State Univ. with Misty Nicholson (PS)
Norman Weisbrodt, Univ. of Texas Medical School with Diane Small (MS)
Christopher Westerkamp, Ferris State Univ. with Andrea Cooley (ES)
Annie Whitaker, Louisiana State Univ. with Jenny Summers (ES)
J. Michael Wyss, McWane Science Center with Edlira Bashari Clark (PS/ES/MS)
Bill Yates, Univ. of Pittsburgh with Monica Erwin (HS)
Mary Zimmer, Ferris State Univ. with Jennifer Piggott (ES)

APS Presents Awards for the Best Physiology Project at Local Middle and High School Science Fairs

APS members continue to judge and present Science Fair Awards on behalf of the APS at local and regional science fairs for pre-college students across the nation. The student selected to have the best physiology-related project receives an APS t-shirt, an APS researcher pin, and a certificate. The student's teacher receives the APS Women Life Scientists book and a K-12 resource packet.

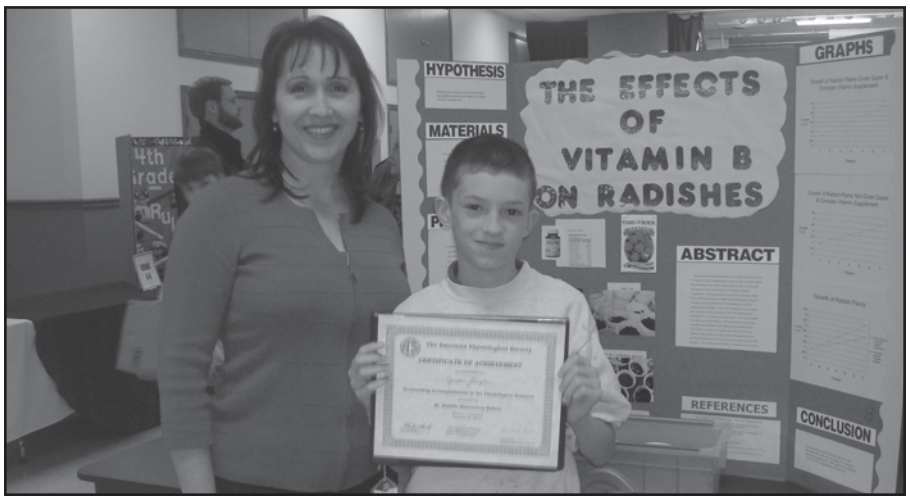
Any APS member who participates as a judge in a local or regional science fair at an elementary, middle, or high school in their community is eligible to apply and receive an APS award packet. For more information, visit: http://www.the-aps.org/education/science-fair/index.htm or contact Scarletta Whitsett (swhitsett@the-aps.org) in the APS Education Office.

Garrett Doty, a sixth grader at Howard Bishop Middle School in Gainesville, FL, received an APS award for the best physiology project at the school's science fair. APS member Deborah Scheuer of the Univ. of Florida was the judge who presented the award. Garrett's project, "Music's Effect on Heart Rate," examined the effect of different types of music on heart rate in humans. The teachers and sponsors were Mathew Lynch and Steven Doherty.

Justin Daigle, a seventh grader at St. Benilde Elementary School in Metairie, LA, received an APS award for the best physiology project at the St. Benilde School Science Fair. APS member Lisa Harrison-Bernard of Louisiana State Univ. Health Sciences Center was the judge who presented the award. Justin's project, "The effects of vitamin B on radishes," demonstrated that vitamin B enhances the growth of radishes from seeds. The teacher and sponsor is Diane McCann.

Lindsey Poole, an eighth grader at Maclay School in Tallahassee, FL received an APS award for the best physiology project at the Capital Regional Science and Engineering Fair. APS member Bryant Chase of Florida State Univ. was the judge who presented the award for Lindsey's project entitled, "Can Compression Socks Improve a Runner's Recovery?"

Husnain Khundnmiri, a tenth grader at Ballard High School in Louisville, KY received an APS award for the best physiology project at the Ballard High School Science Fair. APS member Utpal Sen and a graduate student Francesca Pribble from the Univ. of Louisville were the judges who presented the award. The title of Husnain's project is, "High Protein Concentration Phosphorylates Nrf2 in Proximal Tubule Cells." Husnain's teacher was Rhonda Fields and her mentor was Michelle T. Barati. ❖



Lisa Harrison-Bernard of Louisiana State Univ. Health Sciences Center presents Justin Daigle an APS award for the best physiology project at the St. Benilde School Science Fair.

APS Writing and Reviewing for Scientific Journals Course Deemed a Success

Since 2006, APS has supported Professional Skills Training Courses for undergraduate and graduate students, postdocs, and early career professionals. This year, 27 students met January 6-9 in Orlando, FL to continue the tradition by completing in the APS Writing and Reviewing for Scientific Journals course.

Students learned the essentials of manuscript writing and reviewing while gaining valuable opportunities for networking and collaboration. One student said of the course, "I truly had a wonderful time, and I learned so much. I am very grateful that APS offers these kinds of opportunities for students." Another student said, "I really enjoyed the whole experience and learned a lot from it. It was a great opportunity to address a lot of questions regarding writing and reviewing manuscripts."

Photos courtesy of Mark Knuepfer

Irving Zucker (right) working with students during a small group breakout session.

APS would like to thank the following members for generously offering their expertise and time as instructors for the course: Kim Barrett, Univ. of California San Diego; Barbara Horwitz, Univ. of California Davis; Mark Knuepfer, Saint Louis Univ.; Carole Liedtke, Case Western Reserve Univ.; and Irving Zucker, Univ. of Nebraska Medical Center.

The trainees who participated in the course included: Beatrice Abiero, Univ. of Arizona; John Apolzan, Medical College of Georgia; Hyehun Choi, Medical College of Georgia; Gladys Chompre, Ponce School of Medicine; Patrick Crosswhite, Univ. of Oklahoma HSC; Fernanda Giachini, Medical College of Georgia; Zhengrong Guan, Medical College of Georgia; Ganesh Halade, Univ. of Texas HSC; Artur Indzhykulian, Univ. of Kentucky; Andrew Kelleher, Pennsylvania State Univ.; Shinichiro Kira, Univ. of Washington; Wararat Kittikulsuth, Medical College of Georgia; Kai-Mosadi Monde, Graduate Center of the City Univ. of New York; Fatiha Moukdar, East Carolina Univ.; Ann Revill, Univ. of Arizona; Mohamed Saleh, Medical College of Georgia; Conner Sandefur, Univ. of Michigan; Frank Spradley, Medical College of Georgia; Ratchakrit Srikuea, Univ. of Kentucky; Jose Torres, Texas Southern Univ.; Jose Viscarra, Univ. of California, Merced; Hilary Wakefield, Univ. of Arizona; Justin Wilson, Howard Univ.; Megan Wilson, Univ. of Colorado Denver; Di Wu, East Carolina Univ.; Ding Xie, Medical College of Georgia; and Guang Yang, Medical College of Georgia.

Students enjoying an opportunity for dinner and discussion.

APS will be offering an online, six-week version of the course "Writing and Reviewing for Scientific Journals," beginning June 27, 2011. The next live version of the course "Writing and Reviewing for Scientific Journals" will be held in Orlando, FL in January 2012. For more information, e-mail education@the-aps.org. ❖

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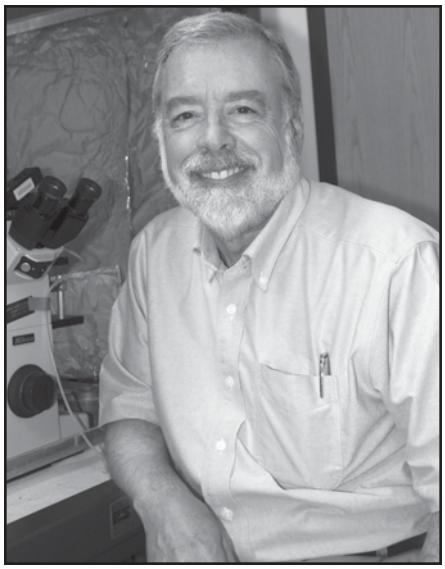
Douglas Eaton Named the Eighth Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Awardee

The APS Women in Physiology Committee is pleased to announce that Douglas Eaton, Director, Center for Cell & Molecular Signaling, and Distinguished Professor and Chair, Department of Physiology, Emory Univ. Medical School, has been selected as the eighth recipient of the Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Award. The Committee was extremely impressed with both his mentoring excellence and his outstanding contributions to physiological research.

Eaton received his PhD at the Univ. of California, San Diego. He did his postdoctoral training in the Department of Physiology at the Univ. of California, Los Angeles. In 1973, he was hired as an Assistant Professor in the Department of Physiology and Biophysics at the Univ. of Texas Medical Branch in Galveston, TX where in 1985, Eaton became a full professor and Director of that group. In 1986, Eaton moved to the Emory Univ. Medical School in Atlanta, GA as Professor in the Department of Physiology; in 2002 Distinguished Professor. In 1995 he became Director of Graduate Studies in Cell and Developmental Biology at the Emory Univ. Graduate School of Arts and Sciences. In 2005, Eaton became Director of the Fellowships in Research and Science Teaching (FIRST) program. In 2008, he became Department Chair at Emory.

Eaton is currently regarded as one of the leaders on ion transport across excitable and epithelial cell membranes; cellular signal transduction; cellular and molecular biology of membrane transport; and nanosensor methods applied to clinical samples. Eaton has more than 148 publications in peer-reviewed journals and many books/book chapters. He also collaborated on a motion picture, "The Nerve Impulse," produced by the Encyclopedia Britannica Educational Corporation. His laboratory has been continuously funded by the NIH and NSF for over 35 years.

Eaton has officially mentored more than 40 trainees, ranging from undergraduate summer students (multiple) and pre-doctoral students (11) to postdoctoral scientists (>30) at various stages of their careers. His trainees have gone on to distinguished scientific careers of their own, with one department chair, five full professors, seven associate professors, and seven assistant professors in the



Douglas Eaton

group. One former trainee, Yoshi Marunaka, is currently president of the Japanese Physiological Society. Many of Eaton's former trainees are conducting research supported by NIH, NSF, or their home country's research funding. Two of Eaton's more recent trainees, James Stockand and My Helms, have been the recipients of major APS awards. Stockand was the APS Bowditch Award recipient for an outstanding young scientist at the 2007 Experimental Biology meeting, and Helms received the 2009 S&R Foundation Ryuji Ueno Award for Ion Channels or Barrier Function Research, an award that provides $30,000 for her laboratory. In addition, Eaton is sponsoring an undergraduate student, Michael Parks, who is an APS Undergraduate Summer Research Fellow and who has also received Emory's Summer Undergraduate Research Experience and Summer International Research Experience fellowships.

There are several aspects of Eaton's mentoring that make him stand out among a large number of APS members who are outstanding mentors. First, Eaton's mentoring is not limited to his trainees. He mentors colleagues and trainees from other labs and divisions in a collegial manner rather than a competitive one. Second, Eaton has an outstanding record of supporting women and underrepresented minorities. And third, Eaton mentors his proteges as individuals and not just as future scientists who will carry on his substantial scientific legacy in epithelial transport.

One of Eaton's most remarkable achievements has been his role in developing and expanding Emory's FIRST program, Fellowships in Research and Science Teaching, supported by funding from the Division of Minority Opportunities in Research (MORE) of the NIGMS. FIRST is a three year postdoctoral program that allows trainees to combine their bench research with sound training in science education, thus preparing them for a wider variety of careers. Eaton started the program with the late Robert Gunn, then Chair of Physiology at Emory, and in 2005 Eaton took over as the program director. The FIRST program, now in its eighth year, is the oldest of the MORE postdoctoral research-teaching fellowship programs and has the most fellows. Although only about half of the FIRST fellows are minorities, their participation in the program has increased the number of minority post-docs at Emory by 30%. The FIRST program also works very closely with several historically black colleges and universities in the Atlanta area, such as Morehouse and Spelman.

Eaton holds membership in numerous scientific societies. He has served as APS President (2004-2007) and is very active in both the Cellular and Molecular and Renal Sections of APS. He has served on editorial boards for major journals in the field, including three of APS' journals, AJP: Cell Physiology, AJP: Renal, Fluid, and Electrolyte, and AJP: Heart and Circulatory Physiology. He has also served as Associate Editor for AJP: Renal, Fluid, and Electrolyte and AJP: Cell Physiology. Eaton has committed years of service on NIH study sections and advisory panels. Finally, his work has been recognized by over 120 invited lectures and has organized numerous symposia and meetings since 1986.

There will be a reception in Eaton's honor at which he will give a talk on mentoring during the 2011 Experimental Biology meeting in Washington, D.C. It will be held on Monday, April 11 at 12:00 pm at the Washington Convention Center. All trainees and mentors are invited to attend.

APS congratulates Dr. Eaton on this well-deserved honor. ❖

Transition from Academia to Private Industry.....and Back

My professional career has taken a very nontraditional path that has provided me unique research and educational experiences, in addition to many personal and professional challenges. My expectations upon obtaining my PhD in 1985 were that following postdoctoral training I would get a university tenure-track position and pursue research in an academic environment for the remainder of my career. Never did I consider the possibility of accepting a research position in the private sector. I have since learned to "never say never."

I started my career as expected, as a tenure-track Assistant Professor rising to the level of Associate Professor. Then, one day in 1995, I received a phone call from a recruiter for a biotechnology company that altered the course of my career. At first, I was resistant to the idea of leaving academia for private industry, because I feared that once I left academia for the private sector I would never be able to come back. In the end, my decision to leave academia for a position in the biotechnology industry did not restrict my career choices, and after seven years in biotechnology, I returned to academia as a Full Professor.

The career path that I have taken has been full of challenges and has required adaptability, resilience, and persistence. In the end, my career path has been extremely rewarding, and I feel fortunate that, in my career, I have had the opportunity to gain exposure to clinical medicine, to learn about the drug discovery and development process, to perform both basic and applied research, and to teach at both the undergraduate and graduate levels. The knowledge and experiences gained from working in both academia and private industry have provided me with a broad background and a unique perspective on research and science and have been instrumental in shaping me as a scientist and educator.

The lesson to be learned from my career path is that it is possible to move between academia and private industry; however, the transitions are not always easy and can lead to lost productivity.

Sue Bodine

So, what are some of the challenges involved in transitioning between academia and industry, and should one consider making the transition?

Transition from Academia to Private Industry

For me, the most important factor that influenced my decision to move from academia to industry was the research opportunities. At first I was hesitant about leaving the university environment where I was running my own research program to go to a biotechnology company. It was important to me to remain in a research environment where I could continue to publish my research findings and continue to stay connected to the research community by attending scientific meetings.

At Regeneron Pharmaceuticals, I initially found a company where I could continue to pursue my research interests in skeletal muscle biology and where discovery research and publications were expected and important. I was fortunate in that, shortly after I arrived at Regeneron, the company initiated a muscle biology program with Procter & Gamble to develop therapeutics to treat muscle atrophy conditions. I was soon promoted to a leadership position and was able to build an In Vivo Muscle Biology Program.

I learned the power of directed discovery research based on strong biology and a team-oriented approach to complex problems. The research culture at any given biotechnology or pharmaceutical company will vary and often evolves over the years as the company grows, potentially merges, and matures. Eventually priorities will change as development and clinical trials take priority over basic discovery research. It is important to find the research environment that best fits your strengths and goals.

For me, the initial transition from academia to private industry was relatively easy, because I was doing much the same in both places. One advantage of research in private industry is being able to immerse yourself in the science, with time to read the literature and keep up with the latest technologies. Another advantage is not having to write grants, so your time can be dedicated to experimental design and data collection/interpretation. That is not to say, however, that you do not worry about funding and the financial stability of the company. Nor does it mean that all of your time is available to do experiments, as there can be numerous meetings to attend, especially as you rise in rank.

The research environment can differ greatly between academia and private industry. One major difference is in academia you are the boss and in charge of your laboratory and its research direction, whereas in private industry, you have a boss who ultimately calls the shots. In academia you are expected to establish an independent research program, and while key collaborations are encouraged and may be necessary to advance your science, your ultimate success in promotion is based on the work in your laboratory. In contrast, in private industry, research projects often involve a team approach, and you as a scientist may only see or control a small part of the overall project. In general, the extent of your oversight is dependent on your position (e.g.,

Scientist, Director, Vice President) in the company. I found the team approach to science to be quite satisfying and educational, allowing me to tackle more complex problems that required multiple areas of expertise while gaining an understanding of new areas of science.

Another difference between academia and private industry is that in private industry projects can be dropped for various reasons, and thus you must be willing to change directions and sometimes fields of study to work on a new project. This can be difficult for physiologists who invest years developing an expertise in a particular system. For example, as a neurophysiologist, would you be willing to stop working on neurodegenerative diseases and begin working on cardiac diseases? Ultimately, it was my desire to continue to work on questions related to skeletal muscle biology that brought me back to academia.

Transition from Private Industry Back to Academia

I made the transition back to a tenure-track academic appointment following seven years in biotechnology. Based on my previous experience in a tenure-track position that included teaching and my promotion to Associate Professor, I was able to come back as a tenured Full Professor at the University of California, Davis. A critical factor that allowed me to move back to academic research was the quality and impact of the research I did at Regeneron Pharmaceuticals.

Transitioning back to academia was a greater challenge than originally expected. Had I not been in an academic position previously, the transition would have been even more difficult. I was fortunate I was able to come back as a tenured faculty member, thus I had some security. However, returning at a senior level was accompanied by greater expectations and the inability to take advantage of programs available to junior faculty setting up their research programs.

No matter at what level you come back, you are starting from scratch and building your laboratory and research program from ground zero. When choosing to make the transition from industry to academia, look for a department or university where you will have potential collaborators. Also, inquire about the availability of core equipment and technology resources. You may find that once in the academic environment you will have less staff support and will be required to take on a lot more responsibilities.

The demands of a tenure-track faculty member are to excel not only in research but also teaching and service. The demands of research itself can be great, and one of the biggest adjustments was getting back into grant writing after being away for seven years. Grant writing is a skill that must be acquired and practiced to be successful. It requires not only good ideas but an ability to sell your ideas, and as a skill it does get rusty if not used regularly. Finding mentors to read your grants and taking a grant-writing course are greatly advised.

Besides setting up your research program you likely will be required to teach. Your teaching load will depend greatly on the type of department, i.e., are you in a department that is responsible for undergraduate teaching or are you in a medical school? In general, your teaching load will be the highest in departments responsible for undergraduate teaching. The technology age has allowed students to have constant access to the instructors, and you must learn to set boundaries. If possible, get a firm commitment on the number and types of courses you will be expected to teach. Finally, negotiate at least one or, if possible, two years of teaching relief when you start. Do not, however, underestimate the time involved in developing lectures and begin developing your lectures during your "relief" time.

Final Thoughts

Careers in both academia and private industry can be very rewarding, each offering unique opportunities and challenges. Furthermore, the environment and culture at every company and university can differ, so assess your own strengths and weaknesses and decide the best fit. There are some key differences in academia and the biotechnology/pharmaceutical industry that should be considered when deciding to make a transition.

In closing, here are some questions to ask when making the decision to take a position in either academia or private industry.

1. What type of environment do you thrive in?
   a. Do you like to work independently or as part of a team?
   b. Do you want to run your own lab and be the decision maker or would you prefer to have a boss who directs the research?
2. Do you want to work on a particular biological system or question? If you could no longer work on this system, would you be happy?
3. Do you want to write grants?
4. How much importance do you place on publications?
5. Do you enjoy teaching and interacting with students? ❖

Sue Bodine, is a Professor at the Univ. of California, Davis and holds a joint appointment in the Departments of Neurobiology, Physiology and Behavior and Physiology and Membrane Biology. She received her PhD in Kinesiology from the Univ. of California, Los Angeles and began her academic career in 1989 as an Assistant Professor in the Department of Orthopedics at the Univ. of California, San Diego (UCSD). In 1996, she left UCSD to take a position at Regeneron Pharmaceuticals in Tarrytown, New York. At Regeneron she became Director of the Muscle In Vivo Biology Program and worked on the identification and development of targets to treat muscle atrophy. In 2003, Bodine returned to academia as part of a recruitment effort by Univ. of California, Davis to build a Muscle Biology Program. Bodine is a Neuromuscular Physiologist whose primary research interest is the identification of the cellular and molecular mechanisms regulating skeletal muscle size under growth and atrophy conditions. Currently, her lab is studying the role of MuRF1 and mTOR-mediated pathways in the regulation of muscle mass in lean adult, obese, and aging animals.

Obama Administration Releases FY 2012 Budget Proposal

On Monday, February 14, 2011, President Obama sent Congress his budget proposal for fiscal year (FY) 2012. The $3.7 trillion spending measure covers all federal programs, including those for life sciences research. Despite plans for an overall five-year freeze on non-defense domestic discretionary funding, most of the major science agencies are slated to receive modest increases. This is reflective of the goals and priorities that President Obama emphasized in his State of the Union address earlier this year.

In theory, the President's budget would be the starting point from which Congress works to determine the budgets for federal programs and agencies. However, this year the Republicans have control of the House, while the Democrats control the White House and the Senate. Moreover, at the time when the budget was released, the budget for the current FY 2011 fiscal year had not yet been finalized. Thus, there is a great deal of uncertainty in terms of how the process will play out and whether it will be possible to achieve these funding levels.

Due to the lack of an FY 2011 budget, the proposed spending levels for FY 2012 are provided in comparison with the current FY 2010 operating levels.

National Institutes of Health

The President proposes a $745 million increase for National Institutes of Health (NIH), which would bring the agency to $31.97 billion, a 2.4% increase over FY 2010. Each institute and center would receive a budget increase between 1.5 and 2.5%.

If implemented, the budget would provide funding for 36,852 total research project grants (RPGs), 43 more than in FY 2010. Funding for RPGs would total $16.9 billion, or 53% of the total NIH budget. Noncompeting and competing awards would receive up to 1% inflationary increases over the FY 2010 level. The budget calls for a 4% increase in training stipends and support for 16,831 full time training positions in FY 2012.

The budget proposal includes plans for establishing the new National Center for Advancing Translational Sciences (NCATS) which would encompass several existing programs including the Clinical and Translational Science Awards (CTSA) the Molecular Libraries Program, Therapeutics for Rare and Neglected Diseases, the NIH-FDA partnership and the newly authorized Cures Acceleration Network (CAN). Budgets for the existing programs will be transferred to NCATS, and the CAN program will be funded at a level of $100 million from the Director's budget.

More details are available in the NIH Budget Summary, available at: http://officeofbudget.od.nih.gov/pdfs/FY12/Tab%201%20Executive%20Summary.pdf.

National Science Foundation

The President's FY 2012 budget calls for the National Science Foundation (NSF) to receive $7.767 billion, an $894.49 million (13%) increase over FY 2010. Within the NSF, the Research and Related Activities account would receive a $689.62 million increase (12.4%) over FY 2010, bringing the total budget to $6.253 billion. Education and Human Resources would increase by $38.44 million (4.4%) for a total budget of $911.20 million. The proposal calls for the Directorate for Biological Sciences to increase by $79.95 million (11.2%) for a total budget of $794.49 million.

The budget calls for significant

growth in the number of research grants, with 2,000 (27.8%) more grants than in 2010 and highlights the importance of Graduate Research Fellowships and the Faculty Early Career Development Program.

More detailed information is available in the NSF budget request: http://www.nsf.gov/about/budget/fy2012/pdf/01_fy2012.pdf.

VA Medical and Prosthetic Research

The President's proposal allocates $509 million for medical and prosthetic research at the VA, a $72 million decrease (12.4%) below FY 2010. The proposed budget would support an estimated 2,118 projects. Budget reductions would affect major research programs including pain, post-deployment mental health, traumatic brain injury, prosthetics and women's health.

More information can be found in the VA budget request: http://www.va.gov/budget/docs/summary/Fy2012_Volume_II-Medical_Programs_Information_Technology.pdf.

NASA

The NASA budget proposal calls for the budget to remain flat at the FY 2010 level of $18.724 billion. The Science budget would increase by $519 million to a total of $5.01 billion (11.5%) over FY 2010.

For more information see the NASA budget proposal: http://www.nasa.gov/pdf/516674main_FY12Budget_Estimates_Overview.pdf.

Chimps on the Forefront of Discovery

Even as questions about the need for chimpanzees in biomedical research are being considered at the highest levels of government, research involving chimpanzees is producing important results. Scientists working with a chimpanzee model have made great strides in the development of a new, promising treatment for Hepatitis C. Other researchers have begun chimpanzee safety and efficacy tests on a potential vaccine for the Ebola virus, which could save the lives of both humans and wild apes.

The pharmaceutical company, Santaris, has completed Phase 1 trials of miravirsen, a drug designed to treat hepatitis C and has begun Phase 2a trials. Miravirsen was the first microRNA-targeted drug to enter clinical trials and was approved only after studies in chimpanzees showed that it could safely reduce the viral load in the liver and blood of chronically infected animals. If miravirsen proves successful, Santaris hopes that similar therapies could be developed for cancer, diabetes, and heart disease.

Scientists at the New Iberia Research Center, a branch of the Univ. of Louisiana, Lafayette, are in the process of conducting safety and efficacy tests in six chimpanzees for a vaccine against Ebola. Primatologist Peter Walsh hopes that the vaccine can be used to protect wild chimpanzees and gorillas against this devastating illness. Walsh told Science that Ebola has killed about "one-third of the gorillas in the world." Vaccine developer Integrated BioTherapeutics Inc. also hopes to develop its vaccine into a product that can protect humans against biological warfare.

Meanwhile, in January the National Institutes of Health (NIH) announced that it would delay the planned move of 186 chimpanzees pending a National Academies of Science study of the scientific needs for chimpanzee research. The animals were to have been transferred from the Alamogordo Primate Facility to the Southwest Foundation for Biomedical Research, but animal rights groups argued that the animals might be used for biomedical research. More importantly, they enlisted support from elected leaders in New Mexico concerned because jobs in Alamogordo would be lost.

In recent months the Humane Society of the United States (HSUS) ran a campaign that included advertisements in the NIH-Medical Center Metro rail station condemning the use of chimpanzees in research and encouraging "whistleblowers" to come forward. HSUS is also promoting legislation that would end all biomedical research involving any species of great ape or gibbon. The Great Ape Protection Act gathered 161 cosponsors in the House of Representatives by the end of the 111th Congress. It is expected that the legislation will be reintroduced in the 112th Congress. ❖

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Twenty-First Century Neuroanatomy Handbook of Brain Microcircuits

Edited by Gordon M. Shepherd and Sten Grillner
New York, USA: Oxford Press, 2010, 536 pp, illus, index, $125
ISBN: 978-0-19-538988-3

Animals are evolutionarily successful in part because their nervous systems successfully make sense of, and engage, the world around them. What nervous systems use to do this are of course neurons (and the ever-helpful glia) equipped with appropriate channels (and similarly-helpful transporters and intracellular machinery). How they use them is to assemble and interconnect components from this available parts kit to produce computationally-enabled circuits. Different brain areas develop and tune circuits to perform their specific information processing tasks, and different organisms do the same. Common to most of these variations on the theme of neural processing is the specific, constrained, interconnected local circuit. Evolution has had eons to produce the nervous systems—mammalian and other—that cope with the 21st century, but neuroscience has been exploring this circuitry for only a little more than the last century, essentially since Cajal.

Shepherd and Grillner have assembled a beautiful, comprehensive, and informative *Handbook* detailing how far we have come toward understanding the circuits that underlie neural processing. The 52 chapters, each focusing on a specific circuit and each prepared by a really first-rate investigator or team, impress the reader with how active are the questions, how convergent the techniques and how emergent the answers. This new and needed volume no way replaces, but instead complements and extends Shepherd's classic The Synaptic Organization of the Brain (now in its fifth edition from Oxford, 2004). A greatly expanded list of contributors details more brain areas and many more preparations, including invertebrates from several phyla. At the same time, focus is sharpened to microcircuitry, with a nod to Graybiel and Grillner's Microcircuits: The Interface between Neurons and Global Brain Function (MIT Press, 2006).

The chapters are short and tight, each with one or more circuit diagrams of the specific microcircuit that aid the reader in making comparisons and contrasts among these variations. What is striking is how well the chapters complement one another. This is in spite of several competing views of cortical columnar circuitry, and indeed the leadoff chapter by DeFelipe and Jones sets a sobering tone as it lists interareal and inter-species variations in cortical microcircuitry.

The broad spread of the many mammalian and other vertebrate systems covered properly reminds us that the cortex is only one structure, and the mammalian brain only one successful nervous system. The *Handbook* fittingly features a baker's dozen of important invertebrate neural circuits, and this is a rich collection spanning Strausfeld's chapter on the fly eye, where four awesome diagrams and many text notes are needed to detail the complexity, through other insects, leeches, and mollusks, ending with a reminder from Hawkins, Bailey, and Kandel of how central and groundbreaking Aplysia was—and remains today as—a model for the cellular and circuit basis of learning.

One persistent theme throughout is prevalence, importance, and local homogeneity of principal cells—GABAergic as well as glutamatergic—and the lesser number but greater diversity of interneurons. It would have been nice to see more on the under appreciated question of cell number: what are the advantages of the size of the local circuit and the number of neurons contributing to it. Why not an order of magnitude more or fewer cells? How do the dendritic span of single neurons and neuron number relate to one another? Another recurrent theme is the role of these microcircuits in modulatory, behavioral, or functional task switching.

Can we cite favorite chapters? Not easy, as all are informative, and each contributes towards what so much of neuroscience is reaching toward, a unified theory of how neural processing leads to brain and mind. With our neurophysiologists' eyes, we looked at explicitly computational examples. We cite some of these—by no means all—as an example of how the *Handbook* explores one of our interests, but this detailed list demonstrates only one of the several ways in which this rewarding and revealing volume can inform:

- Douglas and Martin discuss several computations: computing expectation, the cortical daisy for winner-take-all selection, classical Sherringtonian algebra, the 'permitted set', and normalization.
- Georgopolis and Stefanis cite cortical column computation of spatiotemporal sharpness and contrast toward motor behaviors.
- Wang notes the computational complexity of inputs and the dendrites that receive them, as well as the reverberant connections underlying working memory, beautifully capped with a simulation of prefrontal cortex circuit function.
- Jones contrasts thalamocortical computations performed in pathways arising from X vs Y retinal neurons, then very nicely reviews computations and function of various cell and synaptic types, ending with computations underlying wake vs sleep.
- Bolam comments on how the striatum computes individual and group selection of medium spiny neuron GABAergic outputs.
- C.J. Wilson manages to fit into fewer than eight pages the computational possibilities of synapse number and fan in/out in subthalamic nucleus-globus pallidus, along with phasing due to synaptic inputs affecting spontaneous oscillations, and the relation of synchrony vs. independent firing to Parkinson's Disease.
- Lundkvist and Block show how the suprachiasmatic nucleus computes functions for length of day and more.
- Somogyi offers a wonderful operational definition to specify if two neurons belong to the same class (p.149) on the way to computing interneuronal contributions to phasic formation and activity of hippocampal cell assemblies toward integration and readout.
- Buzsaki discusses computation of successive recurrent and parallel areas of the hippocampus, as well as the complex dynamics of the theta rhythm, and Moser, Witter, and Moser cite computation informing grid cells of entorhinal cortex.
- In retina, Demb shows how computations compensating for light intensity, gradations, and mixed excitatory/inhibitory actions serve to maintain signal detection in both dim and bright environments, and linearization and directional selectivity are reviewed by Werblin and Dowling.

- Shepherd et al explicitly refer to the olfactory bulb glomerulus as a 'cortical processing unit' and Wilson and Barkai describe piriform cortex as an autoassociative network responsible for network oscillations.
- Ito's review of cerebellar circuitry includes a section explicitly on neurocomputing; Llinas explains computational tuning of underlying rhythm of motor movements and related impedance matching.
- In invertebrate sensory systems, Laughlin shows how specialized synapses and circuits maximize S/N ratio and information transmission, recognizing the statistics of natural signals.
- Lei et al discuss how lateral inhibition promotes synchrony in insect antennal lobe, contributing to the combinatorial ensemble olfactory code noted by Menzel and Rybak.
- Central oscillators and pattern generators (CPGs) feature in the invertebrate motor chapters. Katz cites and builds upon the pioneering central pattern generator computational model of Getting and usefully provides links to neuroinformatic resources for molluscan cells, models, and literature. In separate chapters, Calabrese, Kristan, and Friesen each discuss computation and control of leech systems.

Each chapter in the *Handbook of Brain Microcircuits* has its own reference list, dropping the unified bibliography that is such a useful feature of Shepherd's The Synaptic Organization of the Brain. This sharpens the focus of individual chapters, giving immediate access to specific papers, but does little to support the unified conceptual view of neural processing that should be a goal.

What does not aid the reader is a weak index, mostly organized by area or cell type, and lacking more general terms spanning across chapters. The index includes a respectable number of behavioral entries, but perhaps too few computational ones, reflecting a primary emphasis on specific cell types and their interconnectivity within nervous systems. It would have been better to have computational, dynamic, or plastic concepts as major terms, with sub-terms by circuit or area. Instead, computations referred to in traditional cellular activity rather than algebraic or algorithmic terms.

Although a progressive 21st century view of neurophysiology and neuroanatomy, it deserves a comment more suited to earlier times: it's a beautiful volume! Acid-free coated paper, and bound with sewn signatures, it should serve for many years (or at least until the iPad edition appears). A promissory note projects future expansion and invites new insights from new areas, confirming that 21st century neuroscience is an ongoing in addition to a rewarding endeavor.

Who needs this handsome and useful book? Any neurobiologist would benefit from the anatomical, developmental, and behavioral compilations and insights available from all of these highly informative structures, some of which deserve more attention than we have time to give them. It's, of course, especially important for neurophysiologists. Certainly neural modelers should use the *Handbook* as an invaluable reference and pointer to the literature, enabling the design of more selectively neuromorphic neural models.

The *Handbook* should also be an important source for comparative physiologists of any organ system, as these are some of the most developed comparative analyses of how disparate organisms have evolved solutions to the most complex systems-biological problem of all. This volume could readily serve as a second-term text for a one-year comparative physiology or biology course for advanced—or exceptionally deserving—students. ❖

Daniel Gardner
Weill Cornell Medical College
Esther P. Gardner
NYU School of Medicine

46th Annual Meeting of the Lake Cumberland Biological Transport Group

PMU Helga & Erich Kellerhals Research Laboratories for novel Therapeutics

The 46th annual meeting of the Lake Cumberland Biological Transport Group will take place Sunday, June 19 through Wednesday, June 22, 2011 at the Lake Cumberland State Resort Park in Jamestown, KY. This is an excellent, inexpensive forum for principal investigators, post-doctoral fellows and graduate students to present both published data or work in progress and receive feedback. Submission of a presentation title (ie. no abstracts) is all that is necessary. Cell biology, physiology, molecular biology, and biochemistry presentations centered around the theme of biological transport are all welcome. Presentations are made in an informal atmosphere with open discussion encouraged. The scientific sessions will be held morning and evening. Afternoons are free to enjoy swimming, fishing, golfing, riding, hiking, or just relaxing in this beautiful 3,000 acre state park. Registration fees are only $15 for students, $25 for post-docs, and $60 for established investigators. To find out more, please visit http://www.cumberlandbio.org/ or contact the Chair (Charity Nofziger, charity.nofziger@pmu.ac.at), the Vice Chair (Eleanor Lederer, e.lederer@louisville.edu), or the Chair Emeritus Stephen Kempson, skempson@iupui.edu).

David Paterson Appointed New Editor-in-Chief of *The Journal of Physiology*

APS Member David Paterson has been appointed the new Editor-in-Chief of *The Journal of Physiology*. David, who is the current Editor-in-Chief of *Experimental Physiology*, will take up his appointment on April 9, 2011. Paterson is a Professor of Physiology at Oxford University and a Fellow of Merton College, positions he's held since 2002 and 1994 respectively. He completed his doctoral studies in physiological sciences at Oxford as a scholarship winner from the University of Western Australia. He was made a Fellow of the Institute of Biology in 2003 (now the Society of Biology) and the Royal Society of Medicine in 2005. ❖

Wine Wizard

The Wine Wizard

Peter Wagner

All this month brings a problem: too many very good wines at reasonable prices. I just wish I had that problem every month.

Whites

2009 Jekel Chardonnay, Arroyo Seco, CA $8. This is quite a good wine at a very good price. It has a bright, citric nose with a bit of lees character. the palate has good tropical/apple fruit, a bit of that lees edge as well, very nice acidity, and is medium weight, and not very oaky at all.

2009 Girard Chardonnay, Russian River Valley, CA $17. I would really not want to pay this much for a Chardonnay, but many of the best are four times this cost. This wine has nice tropical fruit on the nose withadded layers of pear and stone fruit - very interesting. The palate is bright and clean, with citrus and baked apple flavors.and some vanilla oak. It is a bigger wine that the Jekel, but it is not a full-blown old-style wine. If you hanker after the massive, viscous, buttery, in your face oaky style Chardonnay, try the 2009 Rombauer, Carneros, CA $28.

2010 Camino del Inca Torrontes, Salta, Argentina $12. I have enjoyed the Torrontes grape every time I have come across it. Here is another winner. The nose will bowl you over with sweet lychee and raisins. The palate is clean, with bright acidity, the taste of raisins and lychee giving way to a long and lemony/raisiny finish.

2010 Neuvo Mundo Sauvignon Blanc, Maipo, Chile $7. At this price, a great buy. A clean, grassy nose (half way between bland Californian and herbal New Zealand). The palate has

Peter Wagner

grassy fruit characters with lime prominent, tropical notes as well. Acidity is good, not too high.

Reds

2009 Hahn GSM, central coast CA $9. GSM stands for grenache, syrah and mourvedre and their blending follows a classical Rhone approach. It contains mostly the first two grapes, and is exceptional. Great nose, forward, with vanilla, raspberry, cherry and a little green stemminess. The palate is intense yet light in weight and quite complex. There is raspberry, vanilla, cherry, stemminess, slight earth, medium tannins and bright acidity. There is good structure and the wine is very well balanced. Length is also very good. Do not let this one get away. The secret is out.

2008 Wine Men of Gotham Shiraz, South Australia $7. This is Mae West in a bottle. Very dark, it has plums, raspberry, vanilla, slight oak char and slight eucalyptus on the nose. Incredible weight on the palate, it is still almost devoid of tannins, and has medium acidity. Red fruit, vanilla, slight oak char and eucalyptus follow on the palate, but the viscosity and richness are amazing. This wine is for now: there is not enough tannin or acidity for it to age well. The price is silly.

2007 Bodegas Norton Malbec (reserva), Mendoza, Argentina $13. This is a classy version: many malbecs are tasty but simple. This one has dark berries, coffee, earth and a touch of green pepper on the nose. The palate has excellent richness with dark fruit, slight herbal notes, medium tannins and a long finish.

2008 Lamadrid Cabernet Sauvignon (reserva), Mendoza, Argentina $14. Another solid wine from down south, with dark berries and chocolate on the nose. the palate is rich and extracted, a big but tasty wine. There is some leather. Tannins are medium, and length is very good.

2009 Casa Lapostolle Carmenere, Rapel Valley, Chile $12. This inky dark wine made from the carmenere grape has a forward nose of dark fruit, earth, and chocolate. The palate is terrific with dark berries, slight green pepper, coffee, and earth. It is rich and balanced but not over-extracted, and has very good acidity and length. Tannins are medium. ❖

Postdoctoral Position

Postdoctoral Research Associate: Position is available immediately in the Department of Cell & Molecular Physiology at Loyola Univ. Medical Center to participate in a muscle physiology research project. The study involves the role of heat shock protein in the protection of muscle structure-function during frostbite injury. The successful applicant will be expected to master such techniques as immunohistochemistry and muscle contraction measurements. Prior experience with whole muscle contraction studies is desirable. Although outstanding candidates in all areas of muscle physiology will be considered, special consideration will be given to individuals who will complement our existing strengths in the study of muscle physiology. Qualified applicants should submit (preferably in PDF format): A letter describing research interests, a current curriculum vitae and the names, phone numbers and email addresses of three referees. Application should be sent by Email to: Ruben Mestril, PhD., Professor of Physiology & Medicine, Assistant Dean for Basic Science Research & Postdoctoral Affairs, Stritch School of Medicine, Loyola Univ. Chicago, 2160 South First Avenue, Maywood, IL 60153 Email: mestri@lumc.edu

Faculty Positions

Master Educator Training Program (METP): Ross University School of Medicine is pleased to announce that it is seeking applicants for a one-year Master Educator Training Program starting September 1, 2012. This program is open to individuals who graduated recently with an MD or a PhD in one of the basic sciences. Training is offered in the following departments: Anatomy, Behavioral Science, Neuroscience, Biochemistry, Clinical Medicine, Microbiology/Immunology, Pathology, Pharmacology, and Physiology. The training program affords the opportunity to receive hands-on experience in large group, small group, problem-based-learning and one-on-one teaching. In addition, trainees participate in workshops that provide skills in learner and program evaluation, curriculum design, educational theory, leadership and mentoring. Finally, trainees will be exposed to educational research either through participation in an on-going project or by the development of their own project. After successful completion of the program, trainees are awarded a certificate of achievement. Ross Univ. School of Medicine is located on the beautiful Caribbean island of Dominica overlooking Prince Rupert Bay near the city of Portsmouth. Each trainee will receive an annual stipend of US $45,000 and health care coverage. In addition there is a book and an educational meeting allowance. Transportation to and from Dominica for the trainee (and any relocating spouse or partner) at the beginning and end of the program is provided. *Qualifications:* A strong interest in medical education as part of one's career; MDs or PhDs who have graduated from an accredited US university (preference will be given to those who have graduated within the last three years); a desire to improve educational skills; excellent interpersonal and communication skills; flexibility in being able to adapt to life in a developing country. *How to apply:* Individuals interested in applying for the Master Educator Training Program should submit the following: 1. a copy of an official transcript from the school that awarded the MD or PhD degree; 2. a resume/CV plus current contact information; 3. a letter of intent (two-three pages) that outlines: why you have applied; your educational philosophy; previous teaching experience; how this training will benefit your long-term career goals; if known, a potential educational research topic; contact information (name, title, mailing address, email address, phone number) for two individuals who can speak to your interest in education. At least one of these individuals must have worked closely with you during training for your advanced degree (e.g., faculty mentor or thesis advisor). To apply, please visit our website http://www.rossu.edu; select Careers and complete our online application process. [EOE]

Assistant, Associate, or Full Professor: The Department of Cell and Molecular Physiology at Loyola Univ. Chicago, Stritch School of Medicine (http://www.stritch.luc.edu/depts/physio) seeks applicants for tenure-track positions at the Assistant, Associate or Full Professor levels. We seek colleagues that will complement strengths of the Univ. research programs in cellular and molecular aspects of cardiovascular sciences, neuroscience and aging. Faculty members are expected to establish and sustain an externally funded research program, have a strong commitment to graduate and medical education and actively contribute to our collaborative environment. Candidates must have a PhD, MD or equivalent and postdoctoral experience; senior applicants should have a strong record of research accomplishments and extramural support. Review of applications will commence immediately. Please send electronic copies of curriculum vitae, statement of research interests, and contact information for three references to physiorecruit@lumc.edu. Gregory A. Mignery, PhD, Faculty Search Committee Chair, Department of Cell and Molecular Physiology, Loyola Univ., Chicago, Stritch School of Medicine, 2160 South First Ave., Maywood, IL 60153-5500. [AA/EOE]

Faculty Position in Cardiovascular Physiology: The Penn State Heart and Vascular Institute is recruiting an outstanding scientist in any area of cardiovascular physiology to have a tenure-track appointment in the Department of Cellular and Molecular Physiology at The Pennsylvania State Univ. College of Medicine. Applications are encouraged from individuals at the Assistant, Associate, or Full Professor rank; however, applicants should have a strong commitment to research as demonstrated by a strong extramural funding and publication record. Although all aspects of cardiovascular physiology are of interest, we encourage applicants with a background in vascular biology. A strong research program in vascular biology would significantly enhance the research mission of the Heart and Vascular Institute through synergistic interactions with existing research programs in diabetes/obesity, heart failure, hypertension, and peripheral vascular disease. The intention is to recruit an exceptional scientist who will interact with the existing cardiovascular community at the College of Medicine and Heart & Vascular Institute at Hershey Medical Center. Questions regarding the position can be directed to the Chair of the Search Committee (Dr. Sean D. Stocker, sstocker@hmc.psu.edu) but applicants must submit a curriculum vitae and brief statement of research plans to: C&MPhysioSearch@hmc.psu.edu. Penn State is committed to affirmative action, equal opportunity and the diversity of its workforce. ❖

NIDDK Mouse Metabolic Phenotyping Centers Announce Annual Courses

Fourth Annual Course on Isotope Tracers in Metabolic Research: Principles and Practice of Kinetic Analysis

April 17-22, 2011
The Peabody, Little Rock, Arkansas
Information:
http://www.mmpc.org/shared/tracers.aspx

Course Directors: Robert Wolfe, and Henri Brunengraber

This is the fourth annual offering of a course that provides basic introductory and comprehensive information on performing metabolic studies using tracers labeled with radioactive or stable isotopes, in man and in animals. The course is designed for beginners as well as those with experience who wish to expand their capabilities to more sophisticated problems. The faculty is well-versed in a variety of applications and methodologies. The number of students is limited to 100.

Techniques will be presented for investigating whole body metabolism, for metabolite balance across organs, intracellular flux rates and pathway regulation. General aspects of modeling will be considered, as well as specific applications in the study of carbohydrate, fat, protein metabolism and energy balance. Theoretical and practical matters related to sample analysis by mass spectrometry and NMR will be discussed, including detailed numerical examples of calculations involved in determining isotopic enrichment and basic kinetic parameters. Advanced lectures will discuss in more detail the use of positional and mass isotopomer analysis for intracellular flux rates and various aspects of protein and amino acid metabolism. Applications in humans and animal models (particularly mouse) will be considered.

Course material will be presented in organized lectures and informal workshops. Problem sets and discussion questions will highlight each lecture. Lecture notes and problem sets will be available to registrants to be downloaded from the web at the course. In addition to organized sessions, attendees will have ample opportunities for personal interaction with faculty members to discuss issues of particular interest to them in depth.

For information, please see http://www.mmpc.org/shared/tracers.aspx or contact Maren Laughlin at maren.laughlin@nih.gov

Short Course: An Organ Systems Approach to Experimental Targeting of the Metabolic Syndrome

July 18–28, 2011
Hosted by the Vanderbilt University School of Medicine, Nashville, TN
Information: http://www.mc.vanderbilt.edu/diabetes/msshortcourse

Course Director: Owen P McGuinness

The course will be an intensive two week experience for 20 students (faculty, fellows and graduate students) interested in animal research in metabolic disease. The objective of the course is to give students the tools needed to assess whether an experimental intervention (pharmacologic, genetic, dietary, or environmental) alters macronutrient metabolism, energy balance, cardiovascular homeostasis or animal behavior. To accomplish this, we will use a combination of lectures, hands on laboratories, demonstrations and data problem sessions.

New Course: First Annual O'Brien Mouse Kidney Injury Workshop

August 8th-12th, 2011
Vanderbilt University, Nashville, TN
Information: https://www.mc.vanderbilt.edu/mkpdc/workshop/courses.php

Course Director: Mark de Caestecker
Capacity: 10 students
Hosted by: Vanderbilt O'Brien Center Mouse Kidney Physiology and Disease Center (MKPDC)
Vanderbilt Mouse Metabolic Phenotyping Core (MMPC)

Contact: Fran Tripp (Administrative) and (Faculty)

This is a hands on, practical training course that is designed to train renal fellows, post-docs, graduate students and technicians in the practice of handling, phenotyping and performing commonly used and important mouse renal kidney injury models. By completion of the course, participants will be sufficiently familiar with practical procedures to be able to set up these models in their own laboratories, if necessary with continued support from the MKPDC faculty and staff. It is also anticipated that this forum will establish clear standards of practice for some of the more demanding surgical models of kidney injury (including ischemia/reperfusion injury and 5/6 nephrectomy models).

This is a four and a half day course comprising 2-3 hours of didactic lectures followed by 4-8 hours of practical demonstrations and hands on practical training. Lectures and practical training sessions will be conducted in a fully equipped and dedicated mouse phenotyping and training facility that is coordinated through the Mouse Metabolic Phenotyping Core at Vanderbilt. A detailed course outline and itinerary is provided. Lectures and training sessions will be coordinated by Vanderbilt O'Brien Center Faculty. Technical assistance will be provided by experienced research assistants and postdoctoral fellows. Practical training videos will be available to registered trainees. ❖

May 5-8
Eurpoean Allergology Conference on Clinical Practices, Copenhagen, Denmark. *Information:* Vikki Hyman, 18 Avenue Louis-Casai, 1209 Geneva, Switzerland. Tel.: +41 22 5330 948; Fax: +41 22 5802 953; Email: vhyman@paragon-conventions.com; Interent: http://paragon-conventions.net/eaccp2011/.

May 8-11
The IL-1 Family of Cytokines: From Basic Biology to Clinical Applications, Clearwater, FL. *Information:* Secretariat, Sherwood M. Reichard, 119 Davis Road, Suite 5A, Augusta, GA 30907. Tel.: 706-228-4655; Fax: 706-228-4685; Email: sherwoodreichard@earthlink.net; Internet: http://www.clearwater2011.com/.

May 11-13
Approaching the Clinic: Nitrite and Nitrate Pathophysiology and Therapy Conference, Atlanta, GA. *Information:* Internet: http://www.nitrite2011.com.

May 12-15
Advances in Applied Physics and Materials Science Congress, Antalya, Turkey. *Information:* Scientific Secretariat, Dr. A. Yavuz Oral, Gebze Institute of Technology, Department of Materials Science and Engineering, Cayirova Campus 31300, Gebze Kocaeli Turkey. Tel.: +90 (262) 605-1309; Fax: +90 (262) 605-1337; Email: info@apmas2011.org; Internet: http://www.apmas2011.org/index.html.

May 13-18
2011 American Thoracic Society International Conference, Denver, CO. *Information:* ATS International Conference Department, 61 Broadway, New York, NY 10006. Tel.: 212-315-8658; Email: conference@thoracic.org; Internet: http://www.thoracic.org/conference/.

May 16-17
2011 NHLBI Mitochondrial Biology Symposium, Bethesda, MD. *Information:* http://www.NHLBImitochondrialsymposia.org.

May 18-21
Nicotinic Acetylcholine Receptors 2011, Cambridge, United Kingdom. *Information:* Jemma Beard. Tel.: +44 (0) 1223 495120; Email: jbeard@hinxton.wellcome.ac.uk.

May 28-31
European Human Genetics Conference 2011, Amsterdam, The Netherlands. *Information:* Internet: https://www.eshg.org/eshg2011.0.html.

June-September
FASEB Summer Research Conferences, Colorado, Vermont, Arizona, Italy and Greece. *Information:* http://www.faseb.org/Default.aspx?alias=www.faseb.org/src.

June 2-4
Organization for the Study of Sex Differences (OSSD) Fifth Annual Meeting, Oklahoma City, OK. *Information:* Internet: http://www.ossdweb.org.

June 8-10
8th Annual World Congress of IBMISPS on Brain, Spinal Cord Mapping and Image Guided Therapy, San Francisco, CA. *Information:* Internet: http://www.world-brainmapping.org/.

June 18-21
The 15th Annual IAMSE Conference "Building Healthcare Professionals in Medical Science Curriculum," St. Petersburg, FL. *Information:* IAMSE, c/o JulNet Solutions, LLC, 3473 Rt. 60 East, Huntington, WV 25705. Tel.: 301-733-1270; Fax: 304-733-6203; Email: support@iamse.org; Internet: http://www.iamseconference.org/.

June 19-22
46th Annual Meeting of the Lake Cumberland Biological Transport Group, Jamestown, KY. *Information:* Charity Nofziger, Conference Chair, or Eleanor Lederer, Conference Vice Chair. Email: charity.nofziger@pmu.ac.at or e.lederer@louisville.edu; Internet: http://www.cumberlandbio.org/.

June 27-29
Advances in the Cellular and Molecular Biology of Angiogenesis, Birmingham, UK. *Information:* Stuart Eggington, Department of Physiology, University of Birmingham, B15 2TT, UK. Email: s.egginton@bham.ac.uk; Internet: http://www.biochemistry.org/Conferences/AllConferences/tabid/379/View/Conference/Filter/40FC/MeetingNo/SA123/Default.aspx.

June 27-29
9th International Conference on Modeling in Medicine and Biology (BIOMED 2011), Riga, Latvia. *Information:* Irene Moreno, Conference Coordinator. Email: imoreno@wessex.ac.uk; Internet: http://www.wessex.ac.uk/11-conferences/biomed-2011.html.

June 27-30
3rd Cardiovascular Control Conference: Roles of Brain, Kidney, and Hormones in Normal Blood Pressure Regulation, Sonderborg, Denmark. *Information:* Internet: http://www.sdu.dk/cc3.

June 29-July 2
The International 21st Puijo Symposium, "Physical Exercise, Ageing and Disability - Current Evidence", Kuopio, Finland. *Information:* Puijo Symposium Secretariat, Kuopio Research Institute of Exercise Medicine. Email: puijo.symposium@uef.fi; Internet: http://www.uku.fi/conf/puijo/.

July 1-4
SEB Glasgow 2011, Glasgow, United Kingdom. *Information:* Talja Dempster, Conference and Communications Manger, Society for Experimental Biology, Charles Darwin house, 12 Roger Street, London, WC1N 2JU. Tel.: +44 (0) 207 6852605; Fax: +44 (0) 207 6852601; Email: t.dempster@sebiology.org; Internet: http://sebiology.org/meetings/glasgow_2011/glasgow.html.

July 6-9
Molecular Biology of Hearing and Deafness, Hinxton, Cambridge, UK. *Information:* Pam Garland, Conference & Events Organiser, Wellcome Trust Scientific Conferences, Hinxton, Cambridge, CB 10 1RQ, UK. Email: p.garland@hinxton.wellcome.ac.uk; Internet: http://www.wellcome.ac.uk/conferences.

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MEMBERSHIP APPLICATION FORM
The American Physiological Society

1. Check membership category you are applying for: ❑ Regular ❑ Affiliate ❑ Graduate Student ❑ Undergraduate Student

2. Name of Applicant: _____ / _____ / _____
Last Name or Family Name *First Name* *Middle Name*

3. Date of Birth _____ / _____ / _____ Optional: Male ❑ Female ❑
Month *Day* *Year*

4. Institution Name _____ Department _____
(Please do not abbreviate Institution Name)

5. Institution Street Address _____

6. City/State/Zip/Country _____

7. Home Address ***(Students Only)*** _____

8. Work Phone _____ Home Phone _____

9. Fax _____ E-mail _____

10. **Educational Status:** ▶ **IMPORTANT for STUDENTS: ** If you are enrolled as a graduate student for an advanced degree, or as an undergraduate student, please include the month and year you expect to receive your degree.**

Dates**	Degree	Institution	Major Field	Advisor

11. **WHAT IS YOUR SECTION AFFILIATION?** Please identify your primary sectional affiliation with a "1" and check (✓) up to two additional sections with which you would like to affiliate. **There can be only one "Primary" affiliation.**

___Cardiovascular
___Cell & Molecular Physiology
___Central Nervous System
___Comparative & Evolutionary Physiology
___Endocrinology & Metabolism
___Environmental & Exercise Physiology
___Gastrointestinal & Liver Physiology
___Neural Control & Autonomic Regulation
___Renal Physiology
___Respiration Physiology
___Teaching of Physiology
___Water & Electrolyte Homeostasis

12. **DO YOU WORK IN INDUSTRY?** ❑ YES ❑ NO

13. **SPONSORS** (Sponsors must be Regular APS Members. If you are unable to find sponsors, check the box below, and we will locate them for you.) *Undergraduate Students do not require sponsors but must supply proof of enrollment such as transcripts or letter from your advisor.*

CHECK THIS BOX IF APPLICABLE: ❑ Please locate sponsors on my behalf.

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Mailing Address _____
_____
_____
Phone _____
Fax _____
E-mail _____
Sponsor Signature* _____

#2 Sponsor Name _____
Mailing Address _____
_____
_____
Phone _____
Fax _____
E-mail _____
Sponsor Signature* _____

**signature indicates that sponsor attests applicant is qualified for membership.*

▶ **Please turn over for more questions...and mailing instructions.**

Membership Application (Continued...) **Applicant Last Name** (please print) _____

14. OCCUPATIONAL HISTORY [Check if student ❑]

Current Position:

Dates	Title	Institution	Department	Supervisor

Prior Positions:

Dates	Title	Institution	Department	Supervisor

15. LIST YOUR MOST SIGNIFICANT PUBLICATIONS, WITH EMPHASIS ON THE PAST 5 YEARS (Publications should consist of manuscripts in peer-reviewed journals. List them in the same style as sample below.)

Sample: MacLeod RJ and Hamilton JR. Volume Regulation initiated by Na^+ -nutrient contransport in isolated mammalian villus enterocytes. Am J Physiol Gastrointest Liver Physiol 280: G26-G33, 1991.

16. DOCTORAL DISSERTATION TITLE (if applicable):

_____

_____

17. POSTDOCTORAL RESEARCH TOPIC (if applicable):

_____

_____

18. WHICH FACTOR INFLUENCED YOU TO FILL OUT OUR MEMBERSHIP APPLICATION?

❑Mailer ❑Meeting (Which meeting? _____) ❑Colleague ❑Other _____

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