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The Physiologist

INSIDE

Mentoring Through Teamwork: Lessons Learned

Jerome A. Dempsey
John Robert Sutton Professor (Emeritus) of Population Health Sciences
Univ. of Wisconsin, Madison

Jerome A. Dempsey

I am honored to represent the many mentors and alumni associated with the Univ. of Wisconsin (UW) John Rankin Laborato-ry of Pulmonary Medicine in receiving this award for mentoring and science named after Bodil Schmidt-Nielsen. I have had occasion to research the careers of Bodil's parents, August and Marie Krogh. What a fascinating family of science into which Bodil was born. I was especially impressed by the early accomplishments of her mother, Marie Krogh, whose experiments on pulmonary diffusion in 1910-13 provided critical support for August Krogh's contention of passive diffusion of oxygen in the lung—a concept that was in opposition to the prevailing active secretion theories of August's mentor, Christian Bohr and Oxford professor J. S. Haldane. Furthermore, the ingenious method she devised using carbon monoxide for measuring diffusion capacity of the lung has become—unaltered from its original concept—a routine clinical test of diffusion capacity that remains in use today throughout the world. We are grateful to Bodil and the APS for establishing this award in recognition of contributions to mentoring and science and to the Women in Physiology committee for their efforts in adjudicating the applications. I am grateful to Curt Smith and Bert Forster for their efforts in organizing the application and to the Rankin lab alumni and my colleagues who provided letters of support.

The following is my view of mentoring. I apologize up front for the highly personal nature of what is mostly an historical summary of the people who have inhabited our laboratory and those who have significantly influenced its science and educational mission over its 50-year history. I hope that this accounting may provide some guidance for those who are in the early stages of their careers in science.

My Favorite Mentors

For the first 23 years of my life in Canada I was exposed in high school and university to several important mentors, including my big brother Jim, William Traut (Central High School), Michael Yuhasz (Univ. of Western Ontario), and Max Howell

(continued on page 91)

The Physiologist

Contents

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Headquarters phone: 301-634-7118
Fax: 301-634-7241
Email: webmaster@the-aps.org
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and Brian Sproule (Univ. of Alberta). A lifelong friend Bob ("Mud") Myers was an especially important motivator to me in the early stages of my career when nothing seemed to be moving in the right direction. At UW, John Rankin, MD (1923-1981), a Glasgow born chest physician, was my mentor. He was the most selfless individual and best listener I have ever met—often to a fault. He was extremely busy both as a department and respiratory disease division chair and yet he cared deeply about the welfare of his mentees in and outside of the laboratory and always found time for us. Even at a time when Dr. Rankin was under great pressure as he defended the very existence of his new department and programs he had built, he preferred to solve our problems rather than to dwell on his own. Most importantly he allowed us to succeed or fail independently—but he always had our back! For example, his major research interest was in interstitial lung disease and he had an ongoing NIH program project grant with several study sites to serve this purpose. I was originally a part of this grant with my own project but I soon became more interested in another field of respiratory physiology at the time and wished to pursue it. Dr. Rankin did not hesitate in allowing me to pursue my interests despite the fact that it detracted from his own project. Even when I encountered substantial difficulty in my new ventures, he was unfailing in his support for me. He guided me and my colleagues in our graduate studies and as probationary faculty throughout the 18 years that we were intimately associated with him.

A second favorite mentor of mine was Charles Tipton, who, when he was at the Univ. of Iowa, pioneered the application of basic science to the study of exercise physiology. But I think his major contribution was his unique method for training graduate students in the physiology of exercise. The most lasting impression for me was his insistence on excellence in his student's research. Charlie never allowed a project to be taken on by his students simply for ease of completion. He held symposia in Iowa to which he invited leading scientists in the field not only to present their findings but to formally provide feedback to the students on their research and their presentations. I observed and participated in many of these Iowa "student symposia" as a graduate student and beginning faculty member and was greatly influenced in my later role as a mentor by Charlie's requirements and high expectations for his trainees.

My third favorite mentor was Vladimir Fencl, MD (1923-2002). During the 1960s through the 1990s Vladimir Fencl was a major player in research concerned with brain cerebrospinal fluid (CSF) acid-base regulation—a topic of great concern to the respiratory field because of the newly discovered "central chemoreceptors." Our laboratory was involved in a decade-long controversy with investigators in the Cardiovascular Research Institute at the Univ. of San Francisco concerning the precision with which pH was regulated in the brain CSF and its role in the control of breathing in many chronic conditions—primarily in chronic hypoxia. Dr. Fencl helped my first graduate student, Bert Forster, and me with valuable technical assistance. He even eventually carried out the definitive ("tie breaking") experiments. Of personal importance to me, Dr. Fencl detected in my behavior during this period that I was becoming more enamored with the competition we were involved in rather than the essence of the science. He firmly reminded me that science was really about searching for the truth rather than satisfying one's ego. I am not claiming that I immediately adopted this attitude, but I can say that these lessons stuck with me and eventually I strove to emulate these values at least in some small way. Dr. Fencl's constructive feedback also made me acutely aware of these correctable traits in our trainees.

Our laboratory has been involved in several worthwhile controversies over many years in diverse areas of respiratory physiology. Controversy helps move fields forward. I believe my students and I have benefited a great deal from our critics—they certainly pushed us indirectly to design and conduct our experiments more thoroughly than we might have otherwise. It is also exciting for students to be part of these controversies and to appreciate that they are engaging globally in worthwhile scientific endeavors as members of a group that includes some of the very best in their profession. We are especially grateful to people like John Severinghaus, Tom Hornbein, Brian Whipp, Fred Elderidge, Magdy Younges and Bengt Saltin who all pushed us to practice the best science we could. In every case these controversies led to fruitful debate and discussions with invaluable feedback leading to better experiments!

Jerome A. Dempsey was born and raised in London, Ontario, Canada. He gained his BS degree at the Univ. of Western Ontario, taught and coached briefly at the high school level in Hamilton, Ontario and then continued onto graduate schools at the Univ. of Alberta (MS) and the Univ. of Wisconsin (PhD). His entire faculty career has been at the Univ. of Wisconsin-Madison (1968-2008). He continues his research as the John Robert Sutton Professor (Emeritus) of Population Health Sciences and director of the John Rankin Laboratory of Pulmonary Medicine. Sabbatical leaves included Sahlgrenska Univ. (Goteberg, Sweden) and McGill Univ. (Montreal, Canada). Research in the Rankin Lab has focused on mechanisms underlying the physiology and pathophysiology of the respiratory system and cardiorespiratory interactions during wakefulness, sleep and exercise, in acute and chronic hypoxia and in trained athletes as well as COPD, asthma, CHF and sleep apnea. Both humans and chronically instrumented animal models are used. His research has been supported since 1972 by NHLBI, AHA, DOD and the UW. Dempsey has published 340 original research articles and book chapters, has an honorary degree from Waterloo Univ. and several awards and named lectureships for scientific contributions and mentoring from the APS, ACSM, British Physiologic Society, Canadian Thoracic Society and Canadian Society for Exercise Physiology and has several undergraduate and medical school teaching awards. Dempsey and his colleagues in the Rankin Lab have supervised the research training of 68 pre- and postdoctoral fellows in physiology, medicine, kinesiology, biomedical engineering and zoology and veterinary science. About 80-90 undergraduates also underwent research training in his laboratory.

Rankin Lab and UW:
A Village of Mentors

I have found the inclusion of other faculty being essential to a worthwhile learning experience for most mentees. I am not suggesting that collaborations be sought simply for the sake of collaboration. They take much time and effort and they will not be worthwhile unless the participants care deeply about the goals to be pursued. My most valuable co-mentor was James Skatrud, MD (1949-2006). I taught Jim when he was a medical student and I was a beginning assistant professor. When he returned after his residency to the UW as a fellow, he obtained his research training in our laboratory. Thereafter, we collaborated for 30 years primarily on research in sleep apnea—its causes and consequences. As a clinician Jim taught me the translational side of our research—but he was also invaluable as a co-mentor, not only for the several respiratory physicians who trained with us but also to almost every trainee in the Rankin lab who studied the regulation of breathing. Jim provided an ideal model for young scientists—impeccable integrity, excellent listener and team player with a strong Midwestern work ethic.

Within the Rankin laboratory Bill Reddan, Burt Olson and Ed Vidruk all provided valuable, hands-on assistance to our trainees on a daily basis. The UW Veterinary School provided unique resources for trainees. Jerry Bisgard introduced the chronically instrumented awake animal model to our lab and gave unselfishly of his time and considerable skills in assisting many of our trainees with their projects. Gordon Mitchell, who was originally a postdoctoral fellow in our lab, has spent his entire academic career at the UW Vet School and has provided a wonderful model of unique, important, risk-taking research for our trainees. Starting about 20 years ago we ventured into research problems associated with cardiorespiratory interactions. This research depended critically on Barb Morgan's expertise in autonomic control of the circulation. Co-mentoring with her was a lesson in selfless cooperation and unmatched patience, aimed squarely at benefiting the trainee. Over the past decade plus Ailiang Xie has passed on her considerable expertise in the sleep medicine field to many trainees and beginning faculty. More recently, Marlow Eldridge and his trainees have begun a whole new independent research chapter for the Rankin Lab. Input from many others has added to our multifaceted research environment with major contributions from anesthesiology, immunology, biostatistics and cardiology that were invaluable to the progress and enrichment of our trainees.

In the 1960s Dr. Rankin and I often discussed the future of our laboratory with emphasis on scientific diversity that would encompass independent research and training in most aspects of pulmonary pathophysiology. In many ways, I think this goal was achieved, but clearly this depended on a wide range of expertise and dedication from a lot of terrific people. For me, much of the excitement of research derives from accomplishments as a team. The teamwork approach has also paid off in a highly practical sense in the form of joint funding for such long-standing projects as a specialized center of research and a graduate training grant.

"The teamwork approach has also paid off in a highly practical sense in the form of joint funding for such long-standing projects as a specialized center of research and a graduate training grant."

Continuity of Technical Expertise —Key Ingredients

We have had uninterrupted dedication to our laboratory's goals for a very long period from four very talented people, namely David Pegelow, (electrical engineer, 38 years), Kathy Henderson, (animal lab technician, 37 years), Curtis Smith, (physiologist and animal surgeon, 35 years) and Anthony Jacques (information technologist, 24 years). All of our trainees have benefitted greatly from this continuity of expertise that guaranteed minimal delay, lots of innovation and informed guidance in implementing their projects. Of course the employ of even one of these talented, dedicated people requires extra funding and extra grant writing, but this burden may be eased considerably by sharing such key personnel among several laboratories.

Training is enriched by including differing scientific perspectives. We have had over 20 clinical investigators involved with our research—they have provided the opportunity for trainees to gain insight into the translational aspects of their research. Biomedical engineering graduate students have been a part of our laboratory for 40 years, adding uniquely to the mix. Their perspective on biological problems, especially the modeling of biological systems, added importantly to our experimental approach. Finally, we have also benefited greatly from the inclusion of epidemiologists and biostatisticians in our laboratory's activities. Several of our trainees became involved in population research, thereby, adding an important infusion of physiology into epidemiologic research.

Undergrads

Another key ingredient in our laboratory's operations and especially in the training of graduate students and postdocs was the inclusion of undergraduate trainees. Dr. Rankin always stressed that the medical school faculty should be an integral part of the entire campus and so I became involved very early with teaching undergraduate science courses. This was a terrific source of curious, capable undergraduates who were seeking research experiences. In turn, this created the ideal opportunity for pre- and postdoctoral fellows in our laboratory to engage in in-depth one-on-one mentoring themselves, through their interactions with these bright, dedicated students. We also had a program with an Irish university that sent undergraduates to us for a year of research experience. Several of our undergraduate trainees completed an honors thesis under the direction of our pre- and post-docs and in several cases continued on to receive MD and/or PhD degrees.

The Lab Meeting/Seminar

The weekly lab meeting is an essen-

tial element of training—it is the primary forum for the trainee to acquire an "enthusiasm" for receiving critical feedback. In our lab meetings, work in progress is emphasized but all outside presentations are also given here and scrutinized in-depth—before exposure to the outside world. This is also the forum for trainees to provide appropriate constructive criticism to their peers and to learn that it is their "duty" as scientists to do so. Critical thinking and expression is the essence of progress in science. It absolutely makes my week to overhear discussions spilling over from the lab meeting into the corridors and graduate offices. Following the Tipton principle mentioned above it is important to have visiting scientists engage fully in the lab meeting experience. For over 40 years we have also held a broader-based weekly seminar series for UW respiratory scientists, i.e., the UW "Gas Club," which provides a "dress rehearsal" for trainee presentations and audience for guest speakers.

Mentors Responsibilities

While I have stressed the importance of collaboration and a "village" of mentors as being important to good training, clearly the primary mentor must have specific unique responsibilities. First, they must treat the mentoring responsibility as a major undertaking. This has certainly become my most important job and its importance to me has grown with time. They must ensure that the research problems that are being addressed by the trainees are worthwhile and exciting. Simply completing something because it is both doable and publishable is not good enough! The mentor must decide when in the course of a research project if there is a need to change direction, pull the plug, revamp the hypothesis. They're especially responsible for trainees to be self-critical and to seek outside opinions of their findings. The mentor must recognize individual styles in the trainee allowing them to pursue their own questions with independence as scientists as their major goal. All of these important traits in a mentor I think take time to develop with much trial and error (at least they did for me) but these are goals to which we as mentors must aspire.

Learning About and From Your Trainee

It took me some time to appreciate and to learn from the personal attributes of our trainees. It turns out there were some impressive life experiences in our trainee's backgrounds from health care careers, to farming exploits, military experiences and dealing with chronic illnesses. Kurt Saupe, PhD (1962-2012) earned his PhD with us and then several years later returned to the UW on our faculty. Over the past 10 years of his life I was reacquainted with Kurt, as he assumed my teaching duties and acquired his own lab and trainees at the UW. He struggled at the beginning and was criticized for the wide breadth of his research interests and for his open, seemingly "casual" style with students. However, consistent with the fierce independence he had shown years before as a graduate student, Kurt stuck to his belief in his values and over the course of a few years became a highly productive, well-funded investigator and mentor and effectively demonstrated by example that his teaching style was based on the deep respect he held for his students. Over the past five years Kurt was faced with an aggressive terminal illness—he and his family dealt with this relentless onslaught as he remained an effective scientist and caring mentor, father and husband. None of us liked the way this played out but I feel privileged to have enjoyed this special man's friendship over quite different stages of his life and to have learned from his passion for science and for people.

"The mentor must recognize individual styles in the trainee allowing them to pursue their own questions with independence as scientists as their major goal. All of these important traits in a mentor I think take time to develop with much trial and error (at least they did for me) but these are goals to which we as mentors must aspire."

Expanding Your Mentoring Horizons

If you find you enjoy mentoring, I urge you to expand this practice and lend your expertise beyond your laboratory. Certainly beginning faculty need your guidance and insight into what are and are not important ways to commit their time, in order that their scientific careers will be allowed to get off the ground. Offer to chair mentoring committees for probationary faculty and/or offer your services individually.

Your community is also in dire need of knowledgeable, caring mentors, especially for children. The choice for my wife Barbara and me was the Big Brothers/Sisters program for fatherless children, but there are many agencies and literally thousands of children that need mentoring. I can promise you that these experiences will provide you with new, often unsettling, insights into the human condition and that you will gain far more than you give.

Summary

This essay is simply a highly personal account of how one mentor has joined with a team of mentors, combined with special "permanent" employees, lively group interactions and high expectations for trainees to provide a fertile environment for the training of scientists. I also need to acknowledge the deep personal friendships that have developed and intensified with the Rankin Lab trainees and their families over the past 47 years. How fortunate we mentors are to have the opportunity to experience and learn with continuously refreshed bands of young, eager minds every year. I am eternally grateful to my mentors for providing such broad shoulders to stand on, to my colleagues for sharing their passion for teaching and science and especially to all of our trainees who chose the Rankin Lab to begin their journey in science. I am especially grateful for having my wife Barbara to share with me the joy of having been a part of this team. Good on ya Babs!

To comment on this article, go to www.the-aps.org/forum-teamwork. ❖

Ethics Education in Science and Engineering (NSF Grant) Advisory Board Meeting, La Jolla, CA

The National Science Foundation (NSF) awarded a three-year Ethics Education in Science and Engineering (EESE) grant to the APS, in collaboration with the Biomedical Engineering Society (BMES) and the Society for Biological Engineers (SBE), to develop a set of teaching modules for graduate students focused on publication ethics. On April 3, 2013, the grant's advisory board met in La Jolla, CA and spent two days developing the individual teaching modules. Members of the Advisory Board shared their expertise in student mentoring, science and engineering research, RCR education, academic publishing, and research integrity to strengthen the draft learning objectives and suggested module activities. Module topics include: authorship, plagiarism, data presentation, duplicate publication, conflict of interest, human and animal subject welfare, and data fraud and fabrication. The teaching modules will be used for the first time at the APS Professional Skills Training Course on publication ethics that is scheduled in January 2014 in Orlando, FL. ❖

Advisory Board (names listed from top): Chuck Lang, Rudy Ortiz; Tom Pressley; Mike Domach; June Wispelwey; Jerry Collins; Jason Borenstein; Jane Zimmer Daniels; Greg Florant; Gary Schoenwolf; Kim Barrett; Hannah Carey; Melinda Lowy; Annie Whitaker; Christina Bennett; Rita Scheman; not shown: Marsha Matyas.

Puerto Rico Physiological Society (PRPS) Annual Meeting Report

The Third Puerto Rico Physiological Society (PRPS) Annual Meeting took place at the Univ. of Puerto Rico (UPR) Medical Sciences Campus (MSC) in San Juan, PR on February 8, 2013. Jorge D. Miranda, from the UPR-MSC and past-President, organized the event with the support of the Ponce School of Medicine and Univ. Central del Caribe School of Medicine. The main topic of the meeting was on Mitochondrial Dysfunction and Disease, with speakers from Puerto Rico and the USA mainland.

The Third Annual Congress of Physiological Sciences gathered faculty, postdoctoral fellows, researchers, graduate and undergraduate students interested in mitochondria and the physiological sciences. Over 130 participants attended the meeting coming from the three major medical schools (UPR-MSC, Ponce School of Medicine & UCC School of Medicine), as well as from the UPR-Rio Piedras, UPR-Bayamón, UPR-Carolina Campuses, Universidad del Este, Interamerican Univ., National Univ. de Cuyo-Argentina, Children's Hospital of Philadelphia and the Veterans Hospital. The group was divided into 36 faculty and 94 postdoctoral fellows, laboratory technicians, graduate and undergraduate students.

The meeting began at 7:45am with a continental breakfast followed by a welcome message at 9:00am from Walter Silva, Associate Vice-President of Science & Technology from the Univ. of Puerto Rico, then by Pedro J. Santiago-Borrero, acting Dean of the UPR-School of Medicine and finally, some introductory remarks, by Jorge D. Miranda, President of the PRPS and Associate Dean of Biomedical Sciences, UPR-School of Medicine.

Dr. Paul S. Brookes, from the Univ. of Rochester Medical Center in NY, started the conference with a seminar entitled "Cardioprotection by Potassium Channels-Mitochondrial or Neuronal?" His seminar set the topics and themes to be covered by the speakers in the Congress.

From the Univ. of Puerto Rico Medical Sciences Campus-Physiology Department, Sabzali Javadov talked about "Mitochondrial permeability transitions: nexus of stress in cardiac cells." Then Carlos Torres from the UPR-MSC discussed his research about "Mitochondrial DNA Repair and Carcinogenesis: A New Paradigm." This talk served as an introduction to the Douglas Wallace seminar.

Wallace, from the Univ. of Pennsylvania, presented his work about "A Mitochondrial & Bioenergetic Etiology of Neurodegenerative & Metabolic Diseases" to an audience of over 140 scientists and clinicians which practically filled the amphitheater.

The poster session was after the lunch and each of the 18 students (graduate and undergraduate) presented their work which was evaluated by at least 3 judges on the overall quality of the data and presentations.

In the afternoon, Scott K. Powers, Univ. of Florida, Gainesville, talked about "Exercising Mitochondrial For Cardioprotection." A significant group

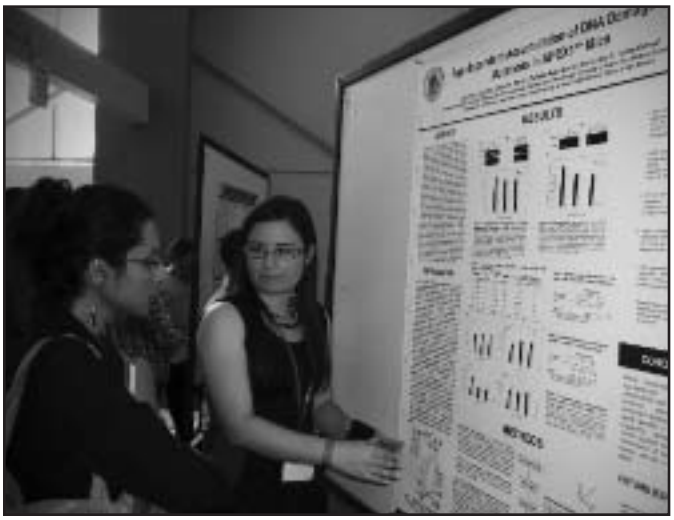
Jorge D. Miranda, President of the PRPS and Associate Dean of Biomedical Sciences, UPR-School of Medicine.

of students and faculty from the Exercise Physiology Program from the UPR-Rio Piedras Campus attended this seminar and this event served to join both programs for future activities. This seminar was followed by the President report from Jorge D. Miranda that discussed the activities performed by the Puerto Rico Physiological Society during this past year.

Miranda explained the outreach activities performed as one of the missions of the Chapter to create awareness and interest about Physiology among students and teachers in elementary, intermediate and high schools (further details at the end of this report). The main idea is to generate in these students an interest in the

PRPS Executive Committee: Nelson Escobales, Jorge Miranda, Priscila Sanabria, Sylvette Ayala, Amelia Rivera, Guido Santacana, León Ferder, Caroline Appleyard, and José Garcia.

Raisa Louncil, Ponce School of Medicine, won the Dr. Peter Lauf and Norma C. Adragna Travel Award.



Poster Session.

Poster Session.

field of Physiology and for them to consider Physiology as an important career option. Finally, Miranda recognized the participation of the speakers in the research forum and presented the winners of the poster sessions.

Raisa Louncil from Ponce School of Medicine presented her work entitled, "HIV Nef expression in rat hippocampus induces systemic inflammation and gastrointestinal pathology;" (Advisor: Dr. Rick Noel) and she won the Dr. Peter Lauf and Norma C. Adragna Travel Award with $1,000 to attend the Experimental Biology Meeting 2013.

In addition, three students received a cash award for their research projects to help present them at the EB 2013:

First place: Namyr Martínez from the UPR-School of Medicine with a research project entitled, "Caveolin-1 supports the P2Y2 receptor signaling;" (Advisor: Walter Silva);

Second place: María C. Velásquez-Martínez from the UPR-School of Medicine with her project entitled, "Alpha-1 adrenoreceptors modulate GABA release onto Ventral Tegemental Area Dopamine Neurons;" Advisor: Carlos Jiménez);

Third place: Mónica I. Quiñones from the Interamerican Univ. with her project entitled, "Sub-cellular distribution patterns of P2Y2 Nucleotide receptor and caveolin-1 using fluorescent chimeric proteins;" (Advisor: Walter Silva).

The Congress concluded with the election of the Executive Committee; Caroline Appleyard from Ponce School of Medicine was nominated for President of the Chapter. Guido Santacana from the UPR-Medical Sciences Campus accepted his nomination as Vice-President and Sylvette Ayala from the UPR-MSC accepted her position as Secretary/Treasurer of the PRPS. The members in the auditorium voted, accepted and supported the nominations for the new Executive Committee. The new councilors are Amelia Rivera from UCC, José Santiago from the UPR-Carolina Campus, Abigail Ruiz Graduate Student from Ponce School of Medicine and Jorge D. Miranda, past-President of PRPS.

Miranda thanked the organizing committee, sponsors and graduate students for their support in the organization and success of these activities. The meeting concluded at 4:00pm, with a formal dinner for the invited speakers and the Executive Committee.

During the last year, our chapter also focused on outreach activities in the different municipalities of Puerto Rico. This year we decided to visit several schools to impact more students around Puerto Rico, including not only those in the metropolitan area, but also in regions located in the East-side of Puerto Rico (Carolina), in the South-side (municipality of Ponce) and in the South-central side (municipality of Coamo). In addition, we were contacted by a regional supervisor of the Department of Education and performed a centralized outreach activity for schools located in the municipalities

Student Awardees.

Outreach activity presentation in Coamo.

Outreach activity hands-on presentation in Coamo.

of Guaynabo, Bayamón, Trujillo Alto, San Juan and Carolina.

In contrast to last year, we impacted students from elementary, intermediate and high school level. As a result, over 180 students and more than 15 teachers benefited from our outreach activities.

The outreach activities were mainly organized by the graduate students, under the guidance of José O. García, with each activity divided into four or five main sections:

1: general presentation by Jorge D. Miranda (President) or Caroline Appleyard (Vice-President) about what is Physiology? How to study it? Where to study Physiology?, etc.;

2: Cardiovascular Physiology activities (how to measure your pulse, how to determine your blood pressure, how an EKG works);

3: Nervous system and how the drugs work (mouse party website);

4: Respiratory Physiology activities (use of a water bottle to simulate a lung and how it will be affected by a pneumothorax); and

5: demonstrations of human hearts, lungs and brains.

These activities promoted the dissemination of Physiology as an alternative field of study and educated the new generation of students about the wonders of scientific research. We are planning to develop a short video with information about Physiology (approximately 8 minutes) and the types of research performed on the Island (1 minute capsules of Physiologists talking about their research). This information will be distributed to High Schools around Puerto Rico.

The success of these activities (Congress and outreach) were due to the following sponsors: Univ. of Puerto Rico Central Administration, Univ. of Puerto Rico Medical Sciences Campus (MSC), Ponce School of Medicine, Univ. Central y del Caribe (UCC) School of Medicine, UPR-School of Medicine, UPR-Division of Biomedical Sciences, UPR-MSC and Ponce School of Medicine-MBRS/RISE Programs, UPR-MSC and UCC-School of Medicine RCMI Programs and the American Physiological Society (APS).

Membership

At the moment we have approximately 125 members in our chapter. Included in this group are regular and associate members (15 high school students). Among the regular members, we have 36 faculty, 17 postdoctoral fellows/residents, and 58 graduate and undergraduate students from the main academic institutions of Puerto Rico. ❖

APS STEP-UP Fellowship Supports 18 Undergraduate Students to Conduct Physiology Laboratory Research

APS is pleased to announce the recipients of the APS' Short-Term Education Program for Underrepresented Persons (STEP-UP) fellowship. This program, funded by the National Institute of Digestive and Diabetes and Kidney Diseases (NIDDK; 1 R25 DK95492-01), provides hands on research experiences for underrepresented undergraduate students interested in exploring research careers. It also aims to provide exposure to the core NIDDK mission areas of diabetes, endocrinology and metabolic diseases; digestive diseases and nutrition; kidney, urologic and hematologic diseases.

Applicants must be a US Citizen, non-citizen national or legal permanent resident, in their sophomore, junior or senior year of college, have a minimum overall 3.0 GPA (on a 4.0 scale) and have personal medical/health insurance coverage throughout the duration of the program. Applicants must also meet one or more of the following criteria: come from racial and ethnic groups that have been shown by the National Science Foundation to be underrepresented in biomedical sciences on a national basis; come from a disadvantaged background as defined by annual family income and/or be the first generation in their families to graduate from a four-year college or university; or diagnosed with a disability that substantially limits one or more major life activities. Selection of participants was based upon academic merit, the quality of their personal statement, resume, and letters of recommendation. Fellows were selected, in part, by members of the APS Advisory Board and members of the Porter Physiology Development and Minority Affairs Committee.

Each fellow receives a $3,500 stipend during the 8-12 week fellowship. Research Hosts receive a $500 unrestricted grant. Fellows also will receive an additional $1,200 in travel funds to present their research at the NIDDK STEP-UP Summer Research Symposium from August 4-8, 2013 at the National Institutes of Health in Bethesda, MD. Of the 18 students in the APS cohort, 8 are working with APS Members.

During the Program, each Fellow will participate in hands-on research experience in the lab of an established investigator learning to develop a hypothesis, design and troubleshoot experiments, collect and analyze data, write and present results. They will have opportunities to network with other undergraduates interested in biomedical research, to explore the nature of research and how scientists think about their specific question, to explore career options and what it takes to be successful in those careers, and have their career questions answered by members of the grant Advisory Board and the Porter Physiology Development and Minority Affairs Committee. ❖

2013 APS/NIDDK STEP-UP Fellows and Research Hosts (*APS Member)

Name/Institution	Research Host/Institution
Theophilus Abah Univ. of Maryland-Baltimore County	**Christopher V. Plowe** Univ. of Maryland School of Medicine
Sydney Butler Harvard Univ.	**Lijie Grace Zhang** George Washington Univ.
Stephanie Cantero College of Micronesia	**Helen Turner*** Chaminade Univ. of Honolulu
Kellie Cooley Xavier Univ. of Louisiana	**Jack N. Losso** Louisiana State Univ.
Bianca Diaz Polytechnic Institute of NYU	**Diane Felsen*** Weill Medical College
Katerine Díaz Florida International Univ.	**Karen Sweazea*** Arizona State Univ.
Martha Flores Pennsylvania State Univ.	**Ana Navas-Acien** Johns Hopkins Sch. of Public Health
Allistair Galindo Concordia Univ., Irvine	**James Bassingthwaighte*** Univ. of Washington
Nicolas Govea The Univ. of Texas at Austin	**Wendy Berry Mendes** Univ. of California, San Francisco
Chelsee Holloway McDaniel College	**Carolyn A. Ecelbarger*** Georgetown Univ.
Anthony Jean-Gilles George Mason Univ.	**Joanne Allard and Dexter Lee** Howard Univ.
Wing (Angel) Lam Arizona State Univ.	**Muthuvel Jayachandran*** Mayo Clinic
Ariel Magallon Indiana Univ.	**Malcom Winkler** Indiana Univ., Bloomington
Nazary Nebeluk Pace Univ.	**Marcos Vidal Melo*** Mass. Gen. Hosp.-Harvard Med Sch.
Cameron Rousseau Univ. of Wisconsin, Madison	**William Schrage*** Univ. of Wisconsin, Madison
Rebecca Urrutia Nova Southeastern Univ.	**Idhaliz Flores** Ponce School of Medicine
Makeeva Walker Howard Univ.	**Jennifer Gooch*** Emory Univ.
Annais Zarate Univ. of Maryland	**Lijie Grace Zhang** George Washington Univ.

APS STRIDE Fellowship Supports 18 Undergraduate Students to Conduct Physiology Laboratory Research

The American Physiological Society (APS) is pleased to announce its 2013 Short-Term Research Education Program to Increase Diversity in Health-Related Research (STRIDE) Fellows. Fellowship winners spend the summer in the laboratory of an established scientist and APS member. In its first year, this program is designed to recruit undergraduate students nationwide from disadvantaged backgrounds, individuals from underrepresented racial and ethnic groups, and individuals with disabilities to work with APS member researchers in the fields of in cardiovascular, pulmonary, hematologic, and sleep disorders research. The STRIDE program is supported by the APS and a grant from the National Heart, Lung and Blood Institute of the National Institutes of Health (NHLBI; 1 R25 HL115473-01).

Selection of participants was based upon academic merit, the perceived quality of the proposed experience and the availability of appropriate faculty mentors. Each fellow receives a $4,000 stipend during the 10-week fellowship. Research Hosts receive a $500 unrestricted grant. Fellows also will receive an additional $1,200 in travel funds to present their research at the Experimental Biology 2014 meeting in San Diego, CA.

During the Program, each STRIDE Fellow will participate in hands-on research experience in the lab of an established investigator learning to develop a hypothesis, design and troubleshoot experiments, collect and analyze data, write and present results. In addition, they will have opportunities to network with other undergraduates interested in biomedical research, to explore the nature of research and how scientists think about their specific question, to explore career options and what it takes to be successful in those careers, and have their career questions answered by members of the Porter Physiology Development and Minority Affairs Committee and by members of the Advisory Board. ❖

2013 STRIDE Fellows and Research Hosts

Fellow and Institution	Research Host and Institution
Vinh Dang Michigan State Univ.	**Bruce D. Uhal** Michigan State Univ.
Teal Jenkins Univ. of Wyoming	**Bruce D. Johnson** Mayo Clinic, Rochester
Nicolette Johnson Univ. of Iowa	**Kevin Campbell** Univ. of Iowa
Benjamin Keith Univ. of North Dakota	**Linglin Xie** Univ. of North Dakota
Lauren Kenney Pennsylvania State Univ.	**Lacy Alexander** Pennsylvania State Univ.
Andranik Khachaturov Univ. of California, Riverside	**Margarita C. Curras-Collazo** Univ. of California, Riverside
Pablo López Univ. of Puerto Rico	**Sabsali Javadov** Univ. of Puerto Rico
Zacharia Mohamed LeMoyne College	**Lara Deriuisseau** LeMoyne College
Meagan Moreno Univ. of California, Merced	**Rudy Ortiz** Univ. of California, Merced
Tania Padilla Univ. of South Dakota	**Evelyn Schlenker** Univ. of South Dakota
Katherine Poinsatte Univ. of Texas, Southwestern	**Ann Stowe** Univ. of Texas Southwestern Med. Ctr.
Amanda Ross Johns Hopkins Univ.	**Jason Carter** Michigan Technological Univ.
Anthony Sainz Univ. of Utah	**Lisa Joss-Moore** Univ. of Utah
Jeremy Scott Univ. of Mississippi	**Babette LaMarca** Univ. of Mississippi Med. Ctr.
Denisha Spires Univ. of Mississippi	**Jan M. Williams** Univ. of Mississippi Med. Ctr.
Brandi Thomas Univ. of Florida	**Charles E. Woods** Univ. of Florida
Emmanuella Uzoigwe Univ. of Utah	**J. David Symons** Univ. of Utah School of Medicine
Joe Valdez Univ. of California, Riverside	**Margarita Curras-Collazo** Univ. of California, Riverside

APS IOSP Fellowship Supports 8 Undergraduate Students to Conduct Comparative Physiology Laboratory Research

The American Physiological Society (APS) is pleased to announce its 2013 Integrative Organismal Systems Physiology (IOSP) Fellows. The eight fellowship winners spend the summer in the laboratory of an established scientist and APS member. In its first year, this program is designed to recruit undergraduate students nationwide from disadvantaged backgrounds, individuals from underrepresented racial and ethnic groups, and individuals with disabilities to work with APS member researchers in the field of in comparative physiology research. The IOSP program is supported by a grant from the National Science Foundation (NSF) Integrative Organismal Systems (IOS; Award No. IOS-1238831).

Selection of participants was based upon academic merit, the perceived quality of the proposed experience and the availability of appropriate faculty mentors. Each fellow receives a $4,000 stipend during the 10-week fellowship; in addition, each fellow receives up to $1,050 in housing subsistence. Fellows will receive an additional $750 in travel funds to present their research at the Experimental Biology 2014 meeting in San Diego from April 26-30, 2014. Research Hosts receive a $500 unrestricted grant.

During the Program, each IOSP Fellow will participate in hands-on research experience in the lab of an established investigator learning to develop a hypothesis, design and troubleshoot experiments, collect and analyze data, write and present results. In addition, they will have opportunities to network with other undergraduates interested in biomedical research, to explore the nature of research and how scientists think about their specific question, to explore career options and what it takes to be successful in those careers, and have their career questions answered by members of the Porter Physiology Development and Minority Affairs Committee and by members of the Advisory Board.

For more information, visit www.the-aps.org/iosp or email education@the-aps.org. ❖

2013 IOSP Fellows and Research Hosts

Fellow/Institution	Research Host/Institution
Fatima Camara Medical Univ. of South Carolina	**Sonya D. Coaxum** Medical Univ. of South Carolina
Precious Ezeamama Barry Univ.	**Georges E. Haddad** Howard Univ. School of Medicine
Hannah Frye East Tennessee State Univ.	**Tom W. Ecay** East Tennessee State Univ.
Walter Guillory II Louisiana State Univ. A&M	**Fernando Galvez** Louisiana State Univ.
Matthew Larkin Univ. of Alabama	**Stephen M. Secor** Univ. of Alabama, Tuscaloosa
Esteban Perez Univ. of Florida	**Keith P. Choe** Univ. of Florida
Jordan Spalding Univ. of Colorado	**Sandra L. Martin** Univ. of Colorado, Anschutz Med. Campus
Braden Tucker Brigham Young Univ.	**Benjamin T. Bikman** Brigham Young Univ.

APS UGREF Program Supports Six Experienced Undergraduate Researchers

The American Physiological Society's Undergraduate Research Excellence Fellowships (UGREF) program is sponsored by the APS Career Opportunities in Physiology Committee and funded by the APS Council beginning in 2013.

These fellowships are to support full-time undergraduate students with significant prior laboratory research experience to work for 10 weeks during the summer in the laboratory of an established APS investigator. The intent of this program is to encourage students to pursue a career as a basic research scientist. Faculty sponsors/advisors must be active members of the APS in good standing but do not have to be US residents.

During the Program, each Fellow will participate in hands-on research experience in the lab of an established investigator expanding their knowledge of conducting research. They will have opportunities to network with other undergraduates interested in biomedical research, to explore the nature of research and how scientists think about their specific question, to explore career options and what it takes to be successful in those careers, and have their career questions answered by members of the Career Opportunities in Physiology Committee. In addition, Fellows will participate in an online Writing for Scientific Journals course to assist them in preparing a manuscript on their results.

These Fellowships provide a $4,000 summer stipend to the student (10 weeks of support), a $300 grant to the faculty sponsor/advisor, and up to $1,300 to the student so that he/she may attend and present their data at the APS annual meeting, Experimental Biology 2014. ❖

2013 UGREF Awardees

Student/Institution	Research Host/Host Institution
Luke N. Belval Univ. of Connecticut	**Douglas J. Casa** Univ. of Connecticut
Michael F. Catanzaro Univ. of Pittsburgh	**Bill J. Yates** Univ. of Pittsburgh
Vidyasagar Jha Dr. M.G.R Univ., India	**Margarita C. Curras-Collazo** Univ. of California, Riverside
Zachary A. Kadow Drake Univ.	**Julia A. Moffitt** Des Moines Univ.
Lauren Redlinger Saint Louis Univ.	**Willis K. Samson** St. Louis Univ. School of Medicine
Benjamin Weidemann Univ. of Iowa	**Justin L. Grobe** Univ. of Iowa

APS UGSRF Program Supports 24 Undergraduates to Experience Laboratory Research

The American Physiological Society's Undergraduate Summer Research Fellowships (UGSRF) program is sponsored by the APS Career Opportunities in Physiology Committee and funded by the APS Council. In 2007, APS doubled the number of fellowships. In 2013, we will again be funding 24 undergraduates for the summer. The program was established in 2000, making this the 14th year of the program.

These fellowships are to support full-time undergraduate students with little or no laboratory research experience to work in the laboratory of an established investigator. The intent of this program is to excite and encourage students to pursue a career as a basic or clinical research scientist. Faculty sponsors/advisors must be active members of the APS in good standing but do not have to be US residents. Past awardees include students from Canada, South America, England, India and Israel.

During the Program, each Fellow will participate in hands-on research experience in the lab of an established investigator learning to develop a hypothesis, design and troubleshoot experiments, collect and analyze data, write up and present results. They will have opportunities to network with other undergraduates interested in biomedical research, to explore the nature of research and how scientists think about their specific question, to explore career options and what it takes to be successful in those careers, and have their career questions answered by members of the Career Opportunities in Physiology Committee.

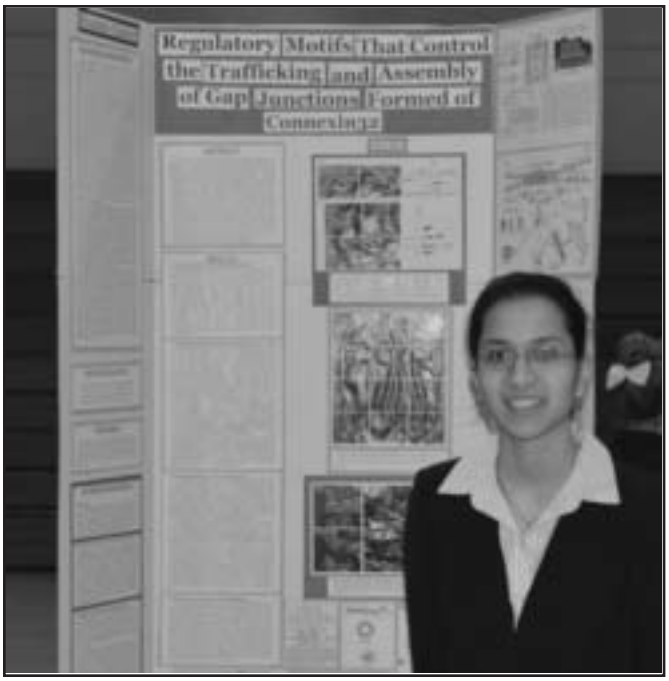
These Fellowships provide a $4,000 summer stipend to the student (10 weeks of support), a $300 grant to the faculty sponsor/advisor, and up to $1,300 to the student so that he/she may attend and present their data at the APS annual meeting, Experimental Biology 2014. ❖

2013 UGSRF Awardees

Student/Student Institution	Research Host/Host Institution
Mun Y. Aw Univ. of Arizona	**Thomas L. Pannabecker** Univ. of Arizona
Andreanne Breton-Carbonneau John Abbott College	**Matthias Nahrendorf** Massachusetts Gen. Hosp./Harvard Med. School
Matthew Calhoun Arizona State Univ.	**Karen L. Sweazea** Arizona State Univ.
Lucy Gao Johns Hopkins Univ.	**Mark Donowitz** Johns Hopkins Univ. School of Medicine
Haylee Hansvall Univ. of Saskatchewan	**Juan P. Ianowski** Univ. of Saskatchewan
Danny Herrera Montgomery College	**Andrew Wolfe** Johns Hopkins Univ. School of Medicine
Anthony Himes Univ. of New England	**Markus Frederich** Univ. of New England
Aravindakshan Jagadeesan Loyola Univ., Chicago	**Sakthivel Sadayappan** Loyola Univ., Chicago
Kyeong Ran (Rachel) Jang Univ. of Kentucky	**John C. Gensel** Univ. of Kentucky
Ellen Keenan Boston College	**Barry H. Paw** Brigham and Women's Hospital
Michael Korn Kalamazoo College	**Christopher L. Mendias** Univ. of Michigan
Debby Lee Univ. of California, Merced	**Rudy M. Ortiz** Univ. of California, Merced
Jacob Mack Univ. of California, Davis	**Barbara A. Horwitz** Univ. of California Davis
Ayako Murao California State Univ., San Marcos	**Deborah M. Kristan** California State Univ., San Marcos
Katelynn Ondek Susquehanna Univ.	**Erin M. Keen-Rhinehart** Susquehanna Univ.
Thien-Khoi N. Phung Univ. of Memphis	**Christopher M. Waters** Univ. of Tennessee Health Science Center
Rahul H. Rana Univ. of California, Irvine	**James W. Hicks** Univ. of California, Irvine
Connor J. Ratycz Univ. of Dayton	**Carissa M. Krane** Univ. of Dayton
Alice Rear Univ. of Oregon	**Jeffrey S. Gilbert** Univ. of Oregon
Ayesha Ropri Siena College	**Yong-Xiao Wang** Albany Medical College
Michael P. Skolka Messiah College	**R. Alberto Travagli** Pennsylvania State Univ. College of Med.
Audra L. Stacy Univ. of Kentucky	**Robin L. Cooper** Univ. of Kentucky
Ericka M. Tank Univ. of Iowa	**Gary L. Pierce** Univ. of Iowa
Nichole E. Zayan Univ. of Miami	**Linda C. Samuelson** Univ. of Michigan

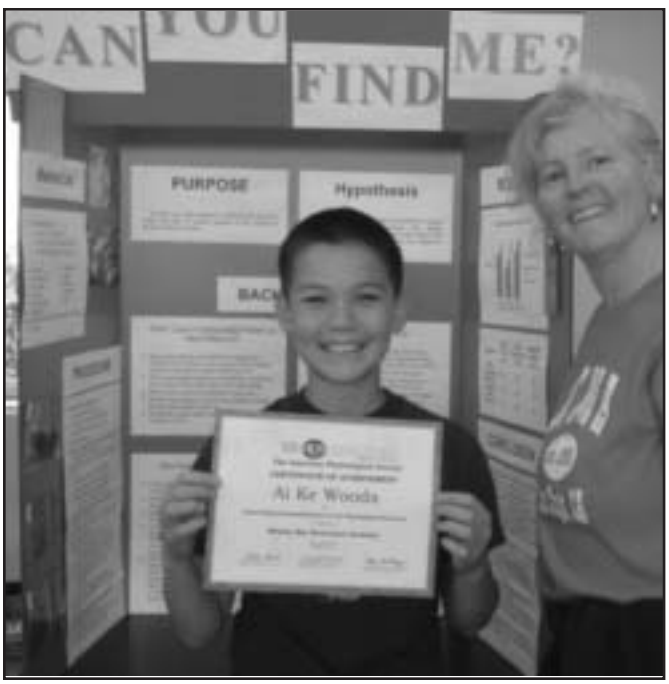
APS Science Fair Awardees

Science Fair Awardee	Title of Project	Science Fair Title	Grade Level	APS Member Judge
Nicholas Byland	How Do Plants Grow With and Without Fertilizer?	St. Benilde School Sci. Fair	7th	Lisa Harrison-Bernard
Kristin Roach	Daily Stress on the Patellar Tendon	Rio Rancho High School Sci. Fair	11th	Jessica Snow
Sophie Roh	Effect of High Glucose on Bradykinin signaling and sodium transporters in MDCK cells	Ballard High School Sci. Fair	11th	Syed Khundmiri
Christine Gonzalez	Do Atmospheric Conditions Affect Heart Rate When Running?	2013 Capital Regional Sci. and Engineering Fair	11th	P. Bryant Chase
Madeleine Sitton & Jacqueline Turner	The Correlation Between Cardiolipin and Its Function in Aerobic and Anaerobic Tissues	Salt Lake City Diocesan Sci. Fair	12th	Christopher Lowry
Sarthak Garg	Berberine: A Potential Natural Drug to Combat Oxidative Stress	2013 Corden Pharma Regional Sci. Fair Special	12th	Parimal Chowdhury
Nadine Ben Alaya	Hypoxia-induced Cerebral Angiogenesis	Central Arkansas Regional Sci. Fair	12th	Cassandra Talerico
Brittany Richards	What's the Buzz?	Northeastern Ohio Sci. and Eng. Fair	8th	Patricia Silveyra
Elena Roberts	Wrinkled Fingertips Lift More Weight	Capital Area Sci. and Engineering Fair	6th	Masako Isokawa
Karan Jani	Covalent Modification of Melphalan Increases its Anticancer Effects	Episcopal Day School Sci. Fair	12th	Michael Wyss
Max Klapow	Down the Rabbit Hole	Central Alabama Regional Sci. and Eng. Fair	8th	Michael Wyss
Desmaray Tolliver	Why Don't Older Adults Go To the Doctor?	Calumet Regional Sci. Fair	10th	Nancy Mangini
Dhanya Jose	Effect of Color on Blood Pressure	Bucks County Sci. Fair	10th	David Crandall
Ravi R Agrawal	Novel Inhibitory Effects of Quillaja Bark Saponin in Curing Hepatitis C	North Jersey Regional Sci. Fair	11th	Sue Shapses
Cierstynn Weicher	Does Hemispheric Brain Dominance Effect The Way We Interpret Images?	Eastern Iowa Sci. and Engineering Fair	Senior high	Thomas Schmidt
Nimansha Jain	Regulatory Motifs That Control the Trafficking and Assembly of Gap Junctions formed by Connexin32	Greater Nebraska Sci. and Eng. Fair	12th	Barbara Engebretsen
Krysten Fries	A Case Study: Does Grind Size Influence the Frequency of Vomiting/Reguritation in a Malayan Tiger?	Nebraska Junior Academy of Sci. Fair	12th	Carol Fassbinder-Orth
Ai Ke Woods	Can You Find Me?	Mission Bay Montessori Academy	6th grade	Alan Hargens



Nimansha Jain was presented with an APS Science Fair award for her project titled, "Regulatory Motifs That Control the Trafficking and Assembly of Gap Junctions Formed by Connexin32."

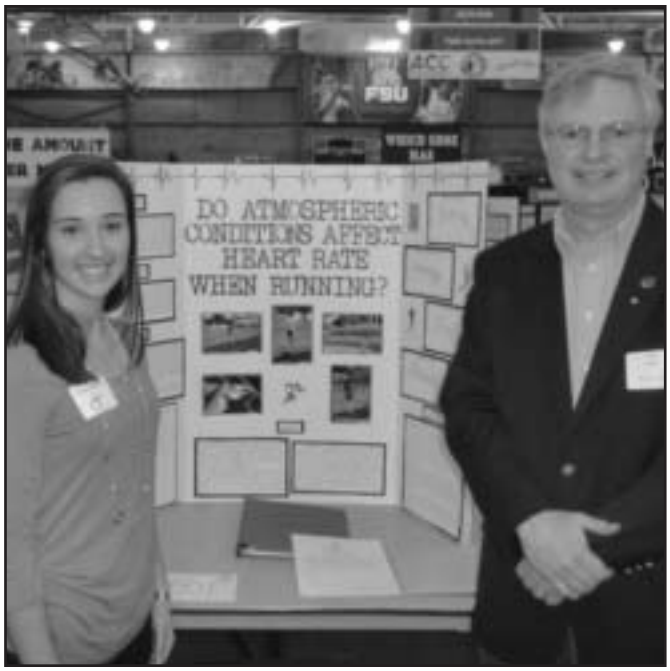
APS Member Lisa Harrison-Bernard presented Nicolas Byland with an APS Science Fair award for his project titled, "How do plants grow with and without fertilizer?"



Ai Ke Woods received an APS Science Fair award for his project titled, "Can you find me?" Ai Ke chose the camouflage report due to the camo gear that his parents wear to work; they are both Navy Doctors. He is pictured with his teacher Kristie Miller.

APS Member Daniel Malleske presented Mariah Trujillo with an APS Science Fair award for his project titled, "Why Do dogs prefer blue and yellow colored treats over red and green?"

APS Member Parimal Chowdhury presented Sarthak Garg with an APS Science Fair award for his project titled, "Beberine: A Potential Natural Drug to Combat Oxidative Stress."



APS Member P. Bryant Chase presented Christine Gonzalez with an APS Science Fair award for her project titled, "Do Atmospheric Conditions Affect Heart Rate When Running?"

Ravi Agrawal was presented with an APS Science Fair award for his project titled, "Novel Inhibitory Effects of Quillaja Bark Saponin in Curing Hepatitis C." APS member Sue Shapses presented him with the APS Science Fair award.

Desmaray Tolliver was presented with an APS Science Fair award for her project titled, "Why Don't Older Adults Go to the Doctor?"

Elena Roberts was presented with an APS Science Fair award for her project titled, "Wrinkled Fingertips Lift More Weight?" Elena is pictured with her teacher Sandra Morfitt.

APS Member Patricia Silveyra presented Brittany Richards with an APS Science Fair award for her project titled, "What's the Buzz?"

APS Member J. Michael Wyss presented Karan Jani with an APS Science Fair award for his project titled, "Covalent Modification of Melphalan Increases its Anticancer Effects."

Membership

New Affiliate Members

Susan Elizabeth Bennett
Univ. of Missouri, Kansas City

Gary Dubois
Oklahoma City, OK

Recently Deceased Members

William D. Blake
Bath, MA
Timothy A. Cudd
College Station, TX
Peter B. Dews
Jamaica Plain, MA
Dexter M. Easton
Tallahassee, FL
Desmond R.H. Gourley
Charlottesville, VA
Brian F. Hoffman
Millbrook, NY
Arthur W. Merrick
Helena, MT
Richard A. Murphy
Earlysville, VA
Loren G. Myhre
Beaverton, OR
Robert W. Phillips
Menomonie, WI
Carl M. Rovainen
Brookings, OR
Wilbur H. Sawyer
Palo Alto, CA
William C. Shoemaker
Los Angeles, CA
Nicholas Sperelakis
Cincinnati, OH
Robert E. Thurber
New Bern, NC
Josh Wallman
New York, NY

New Regular Members

***transferred from student membership**

Abdel A. Alli
Emory Univ., GA
Asma Al Menhali
United Arab Emirates Univ., UAE
Laura C. Alonso
Univ. of Massachusetts
Edward Archer
Univ. of South Carolina
Hakan Arheden
Inst. for Clinical Sci., Lund, Sweden
Andrew Bahn
Univ. Otgo, New Zealand
Yasuko K. Bando
Nagoya Univ., Japan
Michele A. Basso
Univ. of California, Los Angeles
Bavneet Benipal
Univ. of Pennsylvania
Delphine Béziau
Montreal Heart Inst., QC, Canada
Anand Bhaskar
Christian Med. College, Vellore, India
Natalia Vladimirovna Borisova
North Eastern Fed. Univ., Russian Federation
Nina Brandt
Univ. of California, Los Angeles
Tess Briones
Wayne State Univ., MI
Leticia Brotto
Univ. of Missouri, Kansas City
Kirsten A. Burgomaster*
Peterborough, ON, Canada
Laura Busse
Univ. of Tuebingen, Germany
Enrique Cadenas
Univ. of Southern California
C. George Carlson
Midwestern Univ., Glendale, AZ
Rolando Carrisoza
Icahn Sch. Med. at Mount Sinai, NY
Daniel Cattaert
CNRS, Talence, France
Scott H. Chandler
Univ. of California, Los Angeles
Steven M. Chase
Carnegie Mellon Univ., PA
Alfred K. Cheung
Univ. of Utah, Salt Lake City
Amit Kumar Chouhan
Baylor College of Medicine, TX
John Clarke
Univ. of Arizona, Tucson
Christopher Scott Colwell
Univ. of California, Los Angeles
Patrick Leon Crosswhite*
Oklahoma Med. Res. Fndn.
Dominic Paul D'Agostino
Univ. of South Florida, Tampa
Mahendra Damarla
Johns Hopkins Univ., MD
Vallabh Das
Univ. of Houston, TX
Dawn Belt Davis
Univ. of Wisconsin, Madison
Ray De Leon
California State Univ., Los Angeles
Jesse Craig Dean
Med. Univ. of South Carolina
Jared M. Dickinson*
Univ. of Texas Med. Branch, Galveston
Ian C. Dunn
Univ. of Edinburgh, UK
Abdel El Manira
Karolinska Inst., Sweden
Deborah L. Feairheller*
Univ. of California, Los Angeles
Nikolaos Frangogiannis
Albert Einstein College of Med., NY
Junko Fujita-Yoshigaki
Nihon Univ., Japan
Wei Dong Gao
Johns Hopkins Univ., MD
Christina Geithner
Gonzaga Univ., WA
Pedro M. Geraldes
Univ. of Sherbrooke, QC, Canada
Srikanth Givvimani
Univ. of Louisville, KY
Glenda Gobe
Queensland Univ., Australia
Karla K. Haack*
Univ. of Nebraska
Ricci Haines
Univ. of South Florida, Tampa
Andrew Hall
Univ. of Zurich, Switzerland
Mary Hammes
Univ. of Chicago, IL
Jing-Yan Han
Peking Univ., Beijing, China
Kim Hansen
Bryan College of Health Sci., NE
James Alan Harders
Johnson & Johnson Inc., OH
Abdallah M. Hayar
Univ. of Arkansas for Med. Scis.
Tom J. Hazell
Univ. of Lethbridge, AB, Canada
Anna Hemnes
Vanderbilt Univ., TN
Craig Henriquez
Duke Univ., NC
Ho-Shiang Huang
National Taiwan Univ. Hosp., Taiwan
Kenichi Iwasaki
Nihon Univ., Tokyo, Japan
Meshell Johnson
Univ. of California, San Francisco
Gagandeep Kaur
Western Univ. of Health Sci., CA
Gur P. Kaushal
Univ. of Arkansas for Med. Scis.
Scott A. Kelly*
Ohio Wesleyan Univ.
Derek M. Kendig
Virginia Commonwealth Univ.
Il-Young Kim
Univ. of Arkansas
Benjamin Ko
Univ. of Chicago, IL
Andrey Komissarov
Univ. of Texas Health, Northeast
Orlando Laitano*
Univ. Fed Do Vale Do São Francisco, Brazil
William E. Lawson
Vanderbilt Univ., TN
Minghong Ma
Univ. of Pennsylvania
Vaughan G. Macefield
Univ. of Western Sydney, Australia
John J. McCarthy
Univ. of Kentucky
David D. McKemy
Univ. of Southern California
Lori L. McMahon
Univ. of Alabama, Birmingham
Christina Barry McManus
Alabama College of Osteopathic Med., Dothan
Maria Merkulova
Massachusetts General Hospital
Lindsey E. Miller*
Washington State Univ., Spokane
Michael A. Model
Kent State Univ., OH
Hyo Youl Moon
Ulsan Natl. Inst. Sci. & Tech., Rep. of Korea
Scott Adam Morris
Flinders Med. Centre, Australia
Alison Morris
Univ. of Pittsburgh, PA
Victoria Ann Newton
Univ. of North Carolina, Chapel Hill
Steven Nizielski
Grand Valley State Univ., MI
Marco T. Nunez
Univ. De Chile, Santiago
Allison Okamura
Stanford Univ., CA
Jonathan Michael Oliver*
Texas Christian Univ., Fort Worth
Ahmed Kolade Oloyo*
Univ. of Lagos, Nigeria
Paul Overton
Univ. of Sheffield, UK
Jeffrey Palmer
MIT Lincoln Laboratory, MA
Gøran Paulsen
Norwegian Sch. of Sport Scis., Oslo

Salvatore Pepe
Murdoch Childrens Res. Inst., Australia
Torsten Plosch
Med. Ctr. Groningen, Netherlands
Jessica Mae Quimby
Colorado State Univ.
Andras Rab
Univ. of Alabama, Birmingham
Bradley James Rabquer
Albion College, MI
Paulo R. Ramires
Univ. of Sao Paulo, Brazil
Angelique Regnier-Golanov
Feinstein Inst., Port Washington, NY
Marc L. Reitman
NIDDK, NIH, Bethesda, MD
Moran Schiamama Sagiv
Dr. Moran Sagiv, Novato, CA
Joshua K. Salabei
Univ. of Louisville, KY
Zac Schlader
Inst. for Exercise & Environ. Med., TX
David J. Schulz
Univ. of Missouri, Columbia
Zhigang Shi
Oregon Health & Science Univ.
Matt Shipman
Univ. of Fleming Island, FL
Madhu V. Singh
Univ. of Iowa
Thomas Sodeman
Univ. of Toledo, OH
Danuta Sosnowska
Univ. of Oklahoma
Renee Diane Theiss
Governors State Univ., Univ Park., IL
Srinivas M. Tipparaju
Univ. of South Florida, Tampa
Philip C. Trackman
Boston Univ., MA
Joel Douglas Trinity
VA Med. Ctr., Salt Lake City, UT
Kyotaro Uotani
Kyorin Univ. School of Med., Japan
Brian Michael Varisco
Cincinnati Children's Hosp. Res. Fndn., OH
Hui Di Wang
Brock Univ., St. Catharines, ON, Canada
Kenneth Collins Welch
Univ. of Toronto, ON, Canada
Andrew Welchman
Univ. of Birmingham, UK
Robert William Wilson*
Northern Illinois Univ.
Brandi M. Wynne
Emory Univ. Sch. of Med., GA
Lei Yang
Weill Cornell Med. College, NY
Peixin Yang
Univ. of Maryland, Baltimore
Tatsuko Yokota
Aichi-Gakuin Univ., Japan
Byron Yu
Carnegie Mellon Univ., PA
Ji Zhang
W. L. Gore & Associates, Elkton, MD
Liping Zhang
Baylor College of Med., TX
Ming Zhang
SUNY Downstate, NY

New Graduate Student Members

Suresh Acharya
Univ. of Idaho
CarlJacob Ade
Kansas State Univ.
Erik Allman
Univ. of Rochester, NY
Ammar J. Alsheikh
Alfaisal Univ., Saudi Arabia
Gabriel Alves
UNIFESP, Brazil
Lisbeth Bonde
Aarhus Univ., Denmark
Caleb James Bostwick
Univ. of Florida
Tipwadee Bunprajun
Mahidol Univ., Thailand
Kathy Carter
Univ. of Louisville, KY
Trent Cayot
Univ. of Toledo, OH
Yen-Jui Chang
National Yang-Ming Univ., Taiwan
Tony Chao
Univ. of Texas Med. Branch
Gaspar Chiappa
Univ. Fed Rio Grande do Sul, Brazil
Geoffrey Ciarlone
Univ. of South Florida
Eric Christopher Conchola
Oklahoma State Univ.
Greggory Davis
Louisiana State Univ.
Haritha Durairaj
Michigan State Univ.
Randa Eshaq
Louisiana State Univ., Shreveport
Qiying Fan
Univ. of Houston, TX
Yasuko Fukushi
Hamamatsu Univ., Japan
Payal Ghosh
Univ. of Florida
Matthew L. Goodwin
Weill Cornell Med. Coll., NY
Kevin Gordish
Wayne State Univ., MI
Joshua A. Goreham
Dalhousie Univ., Canada
Alexander Green
York Univ., Canada
Stephanie Erin Greufe
Univ. of Northern Colorado
Anthony Herren
Univ. of California, Davis
Nathan Holland
East Carolina Univ., NC
Jeffrey Hord
Texas A&M Univ.
Mu Huang
Southern Methodist Univ., TX
Sirawaj Itthipuripat
Univ. of California, San Diego
Gege- Adebayo Iyabo
Bingham Univ., Nigeria
Daven Jackson-Humbles
Michigan State Univ.
Ranil Jayawardena
Queensland Univ., Australia
Andrew James Jezewski
Univ. of Nebraska, Omaha
Ravinder Kandi
Univ. of Hyderabad, India
Lalage Katunga
East Carolina Univ., NC
Bryan M. Krause
Univ. of Wisconsin, Madison
Kathryn Lanphere
Univ. of New Mexico
Alexander Lehners
Univ. of Hamburg, Germany
Gisele Lincevicius
Univ. Fed. De São Paulo, Brazil
Lauren Linsmayer
Univ. of California, San Diego
Joseph McCarthy
Univ. of Akron
Louis Metcalf
Univ. of Bedfordshire, UK
Nathan Morris
Univ. of Ottawa, Canada
Thanuja Shamalie Jayasundera Basnayake Mudiyanselage
Univ. of Arizona
Devika Narain
Vrije Univ., Netherlands
Cassandra Rae Nelson
Marquette Univ., WI
William Okech
Univ. of Rochester, NY
Larissa Oliveira
Fed. Univ. of Sergipe, Brazil
Jessica Olson
Medical College of Wisconsin
Benjamin Robert Pace
Univ. of Mississippi Med. Sch.
Salvador Enrique Pena
Univ. of Rochester, NY

Angela Poff
Univ. of South Florida
Kristin M. Poole
Vanderbilt Univ., TN
Meghan Ramick
Univ. of Delaware
Linda Jane Reynolds
Univ. of Gloucestershire, UK
Melisa Rito-Domingo
Univ. Nacional Autonoma Mexico
Paul I. Sarkaria
Cornell Univ., NY
Leslie Shelton
Univ. of Arizona
Keith Siew
Univ. of Cambridge, UK
Rachel Skow
Univ. of Alberta, Canada
Ben Smith
Dalhousie Univ., Canada
Malgorzata Straka
Univ. of Minnesota
Richard Sweat
Tulane Univ., LA
Stefano Tarantini
Univ. of Oklahoma HSC
Chad A. Thompson
Univ. of Minnesota
NicoleTheresa Vargas
Charles Sturt Univ., Australia
Nabofa Williams
Univ. of Ibadan, Nigeria
Matthew Wittbrodt
Georgia Inst. of Tech.
Trevor Witter
Massey Univ., New Zealand
Jian Wu
Univ. of Toledo, OH
Huimin Yan
Univ. of Illinois
Andrea Zaniboni
Univ. of Bologna, Italy
Matthew Zeglinski
Univ. of Manitoba, Canada
Xun Zhang
Univ. of South Florida

New Undergraduate Student Members

Theophilus Abah
Univ. of Maryland, Baltimore
Mun Yee Aw
Univ. of Arizona
Andréanne Breton-Carbonneau
McGill Univ., Quebec, Canada
Sydney Arielle Butler
Harvard College, MA
Matthew Calhoun
Arizona State Univ.
Fatima Camara
Med. Univ. of South Carolina
Stephanie Cantero
Chaminade Univ., HI
Kellie Cooley
Xavier Univ., LA
Andrew Craig-Jones
California St. Univ., San Marcos
Katerine E. Diaz
Arizona State Univ.
Bianca Jay Diaz
Polytechnic Inst., NY
Zahra Essa
Univ. of New Hampshire
Precious Ezeamama
Barry Univ., FL
Martha Stefania Flores
Pennsylvania State Univ.
Hannah Frye
East Tennessee State Univ.
Allistair Galindo
Concordia Univ., CA
Walter Guillory
Louisiana State Univ.
Haylee Hansvall
Univ. of Saskatchewan, Canada
Anthony Himes
Univ. of New England
Chelsee Holloway
McDaniel College, DC
Aravindakshan Jagadeesan
Loyola Univ., Chicago, IL
Kyeong Ran Jang
Spinal Cord & Brain Injury Res. Ctr., KY
Teal Katelyn Jenkins
Univ. of Wyoming
Nicolette Michele Johnson
Univ. of Iowa
Ellen Keenan
Boston College, MA
Benjamin Keith
Univ. of North Dakota
Lauren Kenney
Pennsylvania State Univ.
Andranik Khachaturov
Univ. of California, Riverside
Michael Korn
Kalamazoo College, MI
Wing Lam
Arizona State Univ.
Matthew Larkin
Univ. of Alabama
Debby Lee
Univ. of California, Merced
Roland Loh
Swansea Univ., UK
Pablo Joel Lopez
Univ. of Puerto Rico
Jacob E. Mack
Univ. of California, Davis
Ariel Magallon
Indiana Univ.
David W. McMillan
California State Univ., San Marcos
Alexandra Mikhailova
Univ. of California, Davis
Zacharia Mohamed
Le Moyne College, NY
Meagan Hilomen Moreno
Univ. of California, Merced
Ayako Murao
Califonia State Univ.
Nazary Nebeluk
Pace Univ., NY
Jonathan O'Donnell
Univ. of Newcastle-Australia
Katelynn Ondek
Susquehanna Univ., PA
Tania Eunice Padilla
Univ. of South Dakota
Esteban Perez
Univ. of Florida
Thien-Khoi Nguyen Phung
Univ. of Memphis
Rahul Rana
Univ. of California, Irvine
Connor James Ratycz
Univ. of Dayton, OH
Ayesha Ropri
Siena College, NY
Christine Schindler
Williams College, NY
Jeremy D. Scott
Univ. of Mississippi Med. Ctr.
Michael Paul Skolka
Messiah College, PA
Jordan Paul Spalding
Univ. of Colorado, Denver
Denisha Renee' Spires
Univ. of Mississippi Med. Ctr.
Audra Lee Stacy
Univ. of Kentucky
Ericka Tank
Univ. of Iowa
Brandi Linsey Thomas
Univ. of Florida
Rebecca Isabel Urrutia
Nova Southwestern Univ., FL
Emmanuella Uzoigwe
Univ. of Utah
Joe Valdez
Univ. of California, Riverside
Makeeva Tania Walker
Howard Univ., DC
Annais Xcaret Zarate
Univ. of Maryland, College Park
Nichole Elyse Zayan
Univ. of Miami, FL

DOD Report: Animals Still Needed for Trauma Training

Alternative training methods cannot yet replace the use of live animals in the training of combat medics, the Department of Defense (DOD) told Congress. The finding was part of a report mandated under the FY 2013 National Defense Authorization Act. This legislation called upon the DOD to report on its efforts to replace the use of animals in medical training with "human-based" alternatives. On April 8, 2013, DOD Undersecretary for Acquisition Frank Kendall submitted the report, Strategy to Transition to Use of Human-Based Methods for Certain Medical Training (www.tinyurl.com/DODReport), detailing where the military stands in its efforts to move towards alternatives such as simulators, task-trainers, simulated injuries, and human cadavers.

The report states that DOD intends to "reduce the use of live animals in medical training and to increase the use of validated simulation training platforms." Pointing out that improved initial care of wounded personnel "has contributed to historically high survival rates," the report notes that the training of these so-called pre-hospital providers is a "critical component" in improved survival rates. DOD's priority therefore is to ensure that front line medical personnel get training that fully prepares them for their role. According to the report, DOD has "developed a strategy to transition to the use of human-based methods for training." However, it "cannot assume the risk to transition fully to human-based methods" until it is sure that these training tools will offer the same level of "experience and confidence" as the current training.

In FY 2010, DOD initiated a 3-year, $20 million research effort to define measurable outcomes of training effectiveness and develop tools to measure the effectiveness of various training methodologies. According to the report, these metrics and assessment tools will be validated against current training and then used to assess existing simulators and inform efforts to develop better ones.

The report points out that DOD has been active in helping to develop technology-based simulations for use in medical learning environments. Moreover, since 2009 it has spent some $16 million per year on simulators that are part of combat casualty training. These simulators incorporate input from first responders who have served in combat settings over the past decade. However, while the simulators work well in hospital settings, they have been less successful in field conditions. Since this is where medics serve, some of their training must be done under field conditions. Concerns include whether the training is adequate to prepare medics for what they will face and whether the equipment itself is rugged enough to operate reliably in field conditions.

The Physicians Committee for Responsible Medicine (PCRM) and People for the Ethical Treatment of Animals (PETA) immediately criticized the report. Retired Army doctor William Morris, speaking on behalf of PCRM, told *Stars and Stripes* that the use of animals in medical training is an "anachronism." Justin Goodman of PETA told FayObserver.com that the report was "a regurgitation of baseless excuses" for harming thousands of animals.

However, the DOD report warns that without better simulators, newly-trained medics will be less effective in aiding wounded soldiers: "A premature transition to alternative methods of training, without a firm basis derived from scientific evidence, could unnecessarily lead to a decrease in the combat casualty survival rate."

APS Submits Comments on Biomedical Research Workforce

In response to a request for information (RFI) "inviting comments and suggestions on the implementation of the recommendations of the advisory committee to the NIH Director working group on the biomedical research workforce" the APS submitted comments representing the views and priorities of the Society.

The comments stressed the need for a well-trained and diverse workforce that is prepared to meet the country's need for individuals with scientific training. The APS also urged consideration of how any policy changes will impact researchers at all stages of their careers, from trainees to early-career, mid-career and senior investigators, and asked the NIH to strive for a balanced approach that takes into account the effect upon investigators at all career stages and the downstream impact on the long-term productivity of the biomedical research enterprise.

The RFI requested specific comments on a range of topics including use of individual development plans; length of support for graduate student training; benefits for postdoctoral fellows; how best to track, report and assess career outcomes for trainees; and NIH salary support for faculty. The following are excerpts from the full response, which can be viewed at http://the-aps.org/biomedicalworkforce.pdf.

Individual Development Plans (IDPs)

The APS endorses the use of IDPs as a useful tool for career planning and development for all trainees, regardless of source of support and of ultimate career goals, and pointed to the online resources available at http://myidp.sciencecareers.org/. APS also recommends that mentors commit to actively engage in the process with their trainees, and regularly revise IDPs to reflect progress and changing priorities.

Length of NIH support for graduate student training

The APS endorses the idea of encouraging timely completion of degree and agrees that in general an upper limit of six years of support is a reasonable standard. However, since some trainees may require a longer training period due to unique aspects of their research project or extenuating circumstances, there should be a process by which trainees can seek additional supported time.

Similarly the APS supports encouraging a timely transition for post-doctoral fellows to permanent positions. Many institutions already have in place policies that require regular review of post-doctoral fellowships. The APS endorses the idea of regular review to assess progress and future plans.

Postdoctoral benefits

The APS supports providing benefits to postdoctoral fellows and believes that benefits packages should be similar to what is offered to permanent employees at each institution. Benefits should at a minimum include health, dental, retirement, sick leave and parental leave. All

postdoctoral fellows at a given institution should have access to the same or comparable benefits regardless of source of support. For trainees with outside sources of funding, institutions should seek ways to provide benefit packages. Finally, information on benefits packages should be made available to fellowship applicants during the application process.

Training grant review considerations

The APS strongly believes that the health of the biomedical research enterprise depends on a diverse and well-trained group of individuals who can apply their skills and training to a broad range of careers. To the greatest extent possible, training programs should provide students with exposure to a variety of career paths, including those outside of the traditional laboratory setting.

It is increasingly clear that a system that trains individuals for a narrow career path (i.e., NIH-funded biomedical research in an academic setting) offers limited employment opportunities and is not sustainable in the long term. While the primary goal of these programs remains to train the best minds so we can advance American science and maintain our place as a world leader in scientific innovation, training should be broadened to enable students to contribute to the rapidly evolving biomedical research enterprise.

Doctoral degree holders have the skills, knowledge and critical thinking to drive and enhance the scientific enterprise in creative and innovative ways. An individual who is using his or her training and credentials to gain access to and advance in a productive professional career should be considered to have achieved a successful outcome.

NIH support of salaries

Many researchers are now expected to bring in the majority of their salary on research grants, with little to no salary support from their institution. The APS supports efforts to increase institutional support of faculty salaries, but urges that any changes be carefully considered and phased in over time to allow both institutions and investigators to adjust to a new system. Any sudden changes in NIH support for faculty salaries could lead to a down-sizing of the biomedical research workforce.

The reduction in salary support from Executive Level I to Executive Level II primarily affects senior investigators, physician scientists and their institutions. While the APS cannot comment directly on the financial impact of the policy change, we are cautious about the possible negative consequences particularly for physician scientists, who have an important role to play in translational research. In addition, sudden changes in support do not give the institutions and investigators the chance to consider ways to adjust. ❖

Positions Available

Full-Time Tenured/Tenure Track Faculty Position: The Univ. of Minnesota, College of Veterinary Medicine, Veterinary Clinical Sciences Department is looking for an individual who will develop an extramurally funded, independent research program with an emphasis in cardiology. Individuals who can develop collaborative multi-disciplinary studies in neural regulation of cardiac function, and/or cardiac stem cell biology, and/or animal models of cardiac disease including heritable and/or dystrophic cardiomyopathies, gene and/or cell-based therapies, biomedical device applications, and/or tissue engineering are of particular interest. Duties will include development and management of a research program, grant-writing, and mentoring of graduate students, post-docs, and residents (70-80% time), participation in the service and teaching missions of the Department (10-15% time) and provision of didactic and laboratory instruction of professional and graduate students, in addition to advising graduate students, postdoctoral fellows, and mentoring cardiology residents (10-15% time). Essential Qualifications: The qualified individual will have an advanced research degree (PhD), a veterinary degree (e.g., DVM, VMD), or both. For candidates with the DVM/VMD only, specialty board certification or eligibility for certification in either the American or European College of Veterinary Internal Medicine, specialty of cardiology is expected. Preferred Qualifications: Candidates possessing an advanced research degree (PhD), a veterinary degree, and board certification are referred. Additional preference will be given to individuals with demonstrated research expertise in some aspect of cardiovascular medicine, and those who can provide evidence of outstanding teaching, clinical and interpersonal skills. For a full position description and to apply, please go to https://employment.umn.edu/applicants/Central?quickFind=110579. The Univ. of Minnesota is an equal opportunity educator and employer.

Endowed Professorship: The School of Medicine at the Univ. of Missouri (MU) invites applications from clinician-scientists for an endowed Life Sciences Mission Enhancement position that provides a large start-up package and annual research funding. Applicants must have an established track record of performing original research relevant to cardiovascular health and disease and be qualified to hold the rank of Associate Professor or Professor. Candidates with interest in links between nutrition, exercise, and cardiovascular health and disease are particularly encouraged to apply. The successful candidate will lead his/her own independent research program and serve as a bridge investigator between basic, translational, and clinical research groups within the School of Medicine, the College of Veterinary Medicine, the Dalton Cardiovascular Research Center, and several other academic units on campus. The recruited individual will also hold an appointment with the MU Institute for Clinical and Translational Science (iCATS). The Univ. of Missouri is an AAU public research university and an equal opportunity, affirmative action employer. Columbia, MO is a vibrant community that consistently ranks as a top US city in which to live and work. Women and minority candidates are strongly encouraged to apply. Apply for this position online at: hrs.missouri.edu/find-a-job/academic/ or by contacting William P. Fay, MD, Director, Division of Cardiovascular Medicine (fayw@missouri.edu, 573-882-2296). ❖

Wright Elected to National Academy of Sciences


Ernest M. Wright

APS member Ernest M. Wright, Distinguished Professor of Physiology and Mellinkoff Professor in Medicine, UCLA School of Medicine, has been elected to membership in the National Academy of Sciences. Wright is known for his work to understand the structure and function of cotransporter proteins, specifically the sodium glucose cotransporters (SGLTs). Wright joins the 2,179 active members of the NAS, along with the 437 nonvoting foreign associate members.

Zucker Selected as Outstanding Mentor


Irving H. Zucker

Irving H. Zucker, professor and chairman of cellular and integrative physiology, has been selected as one of two Univ. of Nebraska Medical Center faculty members who received Outstanding Mentor of Graduate Students Awards at the Annual Faculty meeting. When asked what the greatest rewards of mentoring were, Zucker responded, "Watching students develop, grow and mature into someone that's more independent than when they started. Helping to give them confidence to promote their own ideas."

Navar Awarded Inaugural Oliver Fund Award


L. Gabriel Navar

L. Gabriel Navar has been awarded the inaugural Oliver Fund Award for Excellence in Faculty Mentoring at Tulane Univ. Navar was called the "ideal candidate" and the "quintessential faculty mentor" by his colleagues. A 25-year Tulane faculty member, Navar is professor and chair of the physiology department. The award (http://tulane.edu/provost/the-oliver-fund-award.cfm) was established this year to honor the commitment of senior faculty members to the success of junior faculty members and Tulane as a whole through mentoring. Navar (http://tulane.edu/som/departments/physiology/people/l-gabriel-navar.cfm) received the award, including a $5,000 prize, at the School of Medicine Ivy Day during Commencement Week.

Aviad Haramati, professor in the department of biochemistry and molecular & cellular biology, Georgetown University, will serve as the inaugural director of the Center for Innovation and Leadership in Education, or CENTILE. CENTILE was conceived during the GUMC-wide Strategic Planning Initiative, and will amplify faculty's efforts to create, maintain and grow educational programs across all sectors of GUMC through excellence, innovation and leadership in teaching. CENTILE will explore the development of new educational programs, provide administrative resources to support existing educational programs and monitor the impact of GUMC's educational programs on students to ensure they are of the highest quality.

Don Rockey is now Chair and Professor of the Department of Medicine at the Medical Univ. of South Carolina, Charleston, SC. Prior to this move Rockey was Adjunct Professor in the Department of Internal Medicine at Univ. of Texas Southwestern Medicine Center, Dallas.

Bernardo Rodriguez-Iturbe is now Professor and Chief in the Department of Nephrology at the Hospital Univ. de Maracaibo in Maracaibo, Venezula. Prior to this move Rodriguez-Iturbe was at MCO 3110 in Miami, FL.

Sabine Steffens is now a Univ. Professor in the Institute of Cardiovascular Prevention at Klinikum der Univ. in Muchen, Germany. Prior to this move Steffens was a PhD Group Leader in the Department of Internal Medicine at the Cardiology Univ. Hospital in Geneva, Switzerland. ❖

Current Calls for Papers

Physiological Genomics

Mitochondrial Metabolism

NextGen Sequencing Technology-Based Dissection of Physiological Systems

Technology Development for Physiological Genomics

AJP-Gastrointestinal and Liver Physiology

Physiology and GI Cancer

Intestinal Stem Cells in GI Physiology and Disease

Innovative and Emerging Technologies in GI Physiology and Disease

Physiology and GI Cancer

AJP-Lung Cellular and Molecular Physiology

Biomarkers of Household Air Pollution
(April 1, 2014)

Bioenginering the Lung: Molecules, Materials, Matrix, Morphology, and Mechanics

Translational Research in Acute Lung Injury and Pulmonary Fibrosis
(*July 1, 2013)*

Real-time Visualization of Lung Function: From Micro to Macro
(January 1, 2014)

American Journal of Physiology—Endocrinology and Metabolism

Islet Biology
(June 30, 2013)

Novel Aspects of Adipocyte Biology
(June 30, 2013)

CNS Control of Metabolism
(June 30, 2013)

Advances in Physiology Education

Teaching and Learning of Professional Ethics

American Journal of Physiology—Heart and Circulatory Physiology

Sex and Gender Differences in Cadiovascular—to Basics

AJP-Regulatory, Integrative, and Comparative Physiology

Fetal and Neonatal Programming: Epigenetic Modification of Phenotype
(June 30, 2013)

Integrative and Translational Physiology: Inflammation and Immunity in Organ System Physiology
(June 30, 2013)

Integrative and Translational Physiology: Integrative Aspects of Energy Homeostasis and Metabolic Diseases
(June 30, 2013)

AJP-Renal Physiology

Renal Solute Co-Transporters and Exchangers
(*July 1, 2013)*

Chronic Kidney Disease and Fibrosis
(*July 1, 2013)*

Renal Acid-Base Physiology
(*July 1, 2013)*

Pathophysiology of Acute Kidney Injury
(*July 1, 2013)*

American Journal of Physiology—Cell Physiology

Cellular Mechanisms of Tissue Fibrosis
(September 30, 2013)

Cellular Circadian Rhythms
(September 30, 2013)

Stem Cell Physiology and Pathophysiology
(September 30, 2013)

Proteomic and Metabolomic Approaches to Cell Physiology and Pathophysiology
(September 30, 2013)

For a complete list of current Calls for Papers, visit *The Physiologist* website.

Letters to Margaret Anderson

Anwar Bikhazi writes: "Currently I am still a collaborative professor within our Department of Physiology, Faculty of Medicine, American University of Beirut, however, with reduced research profile. I have already mentored around 70 graduate students within my research premises, and currently going on novel findings in cancer therapy. From my background in Pharmaceutical Chemistry, from the distinguished Univ. of Michigan, Ann Arbor, USA, by remarkable multi-specialized scientists, I joined the American Univ. of Beirut. I did multivariant research within my premises and I do recommend/advise younger colleagues to go for breakthrough in research, and not to link themselves into one single research domain. Multivariant research can trigger novel findings, thus, upgrade their research potentials in the basic, applied, and clinical sciences by collaborating with colleagues of different specialties. As mentioned above, I do sincerely hope that our novel derivative of an anticancer marketed molecule, will indicate breakthroughs in targeting cancerous cells while keeping normal cells intact. Thus, allowing our younger scientists in joining our research approaches and potential breakthroughs."

Peng Li writes: "For young scientists I like to say: Human life is short.

"We should have clear purpose of our life. Decide early what we shall do; study and work hard when we were young. Learn all the science and techniques from all the countries and cultures over the world.

"To be a doctor, please look over a patient as a whole, but not a single organ, tissue or molecule. Human beings have their own regulating system to balance the body function. Doctors only have the ability to help the patient to rebalance their body. Preventing disease is better than treating disease. Integration of western and eastern medicine will be more effective to treat patients and human life."

Letter to Phil Posner

Bill Brownell writes: "The discovery of outer hair cell electromotility took place on December 3rd, 1982 in the medical school laboratories at the Univ. of Geneva. I was on Sabbatical from the Univ. of Florida working with Daniel Bertrand and Charlie Bader. Our plan was to use cell isolation and electrophysiological recording techniques they had developed on photoreceptor cells to conduct voltage clamp studies in isolated cochlear hair cells. Several months were required to optimize the primary cell culture procedures for hair cells. Outer hair cells proved easier to isolate and we began voltage clamp attempts in October. The home made optics, amplifiers and data collection programs required a team effort to pull off the experiments. We were using micropipettes to make intracellular recordings (whole-cell patch-clamp techniques were still not widely used). We settled into a routine where Charlie advanced the electrode while visualizing the cell through the microscope and Daniel was poised over the electronics looking for the tell-tale voltage shift that would indicate we were inside the cell. A common technique at the time was to "buzz" the electrode when the electrode tip was positioned on the cell membrane. The buzz was achieved by throwing the amplifier head-stage into electrical oscillation. For reasons that are still not clear the buzz often pushed the tip of the electrode through the membrane. The pivotal moment occurred when Daniel buzzed and I could see Charlie's back and shoulders jerk. While still looking though the microscope Charlie called for another buzz and his body responded with another jerk. At that point Charlie turned around and said 'We have a problem.'

"Daniel and I took a look at the outer hair cell movements as Charlie buzzed. Ion channels ceased to be of interest and the remainder of my Sabbatical was given over to OHC electromotility. Over the next few months I eliminated potential artifacts and further characterized the phenomena. It was after I knew that hyperpolarization caused the cell to elongate and depolarization caused it to shorten that I was confident OHC electromotility was real. We had no equipment for recording the conspicuous movements so we had visiting scientists sign our lab book acknowledging they saw the movements. I eventually captured the movements using video microscopy, eliminating the need for affidavits."

Hi all: The wine shops I frequent are for some reason not bringing in as many whites, so once again the column will be red-dominated.

Whites:

Here are a couple of pleasant, inexpensive "party whites"—-wines that are not great but quite drinkable at a party and free of real flaws:

2011 Hugues, Picpoul de Pinet, Caves de Pomerol $8. The picpoul grape is pretty new to me. It seems to make a clean if generic and nicely balanced wine with good citrus-based fruit, good to very good acid, and an overall pleasant balance. This one has a nice nose and palate of lemon and grapefruit plus a little baked apple. It has richness, viscosity and is clean.

2011 Coteaux du Languedoc Picpoul de Pinet $8. Not quite as rich as the above, it has lemon and a little pear on the nose and palate.

2011 Josh cellars Chardonnay $10. The nose has vanilla and ripe tropical fruit. The palate is similar with a nice lemony tart kick at the end. Good but not great. Oak is medium to light.

2012 Astrolabe Sauvignon Blanc, Marlborough, New Zealand $17. There are several NZSB's at half the price, but they are also half as intense. This wine is amazing in its fruit concentration both on the nose and palate. Full of grassy, herbal gooseberry and lime, rich and viscous, not too tart, almost sweet in its ripeness, very clean.

Red wines

2011 Josh Cellars Merlot $10. This is a light style Merlot that is quite well made, a decent party red. A little green bean in the nose (common in Merlot) and nice black cherry fruit. The palate is similar. Not tannic, not tart, but clean, varietal and with good fruit intensity.

Peter Wagner

2011 McManis Merlot $8. Ya gotta like American oak (dill, vanilla, coconut). The nose is dominated by these characters, with red/dark cherry fruit behind the oak. The palate is also very oaky, but the fruit intensity is really, really good. Very good length, not tart or tannic, just oaky. You have been warned.

2010 Route 152 Pinot Noir $9. Can't get many Pinots at this price that are actually drinkable. This one has a floral grapey nose with cola and black cherry. The palate is very similar with slight earthiness, soft tannins, balanced acid and light tannin. It is a lighter style and not too oaky (too much oak is a common fault in Pinots in my opinion).

2011 Cosentino Cabernet Franc, Lodi, $10. This has a floral, almost candied raspberry nose and palate. The fruit is ripe and almost sweet, but it has decent tannins and acid to balance this. This is a nice food wine – grilled anything.

2010 Terra D'Oro Zinfandel, Amador County $11. Amador is famous for a very hot climate in the Sierra Foothills near Sacramento. The wines are usually big, rich, ripe, and even slightly sweet, with high alcohol. This is no exception. The nose has lots of red berries, and a little earth and oak char. The palate is forward and rich, with ripe, almost sweet red raspberry fruit, some American oak (dill), but is neither tart nor tannic.

2012 Meiomi Pinot Noir $17. This is a blend made from grapes from Monterey, Sonoma and Santa Barbara counties. A little pricey, but nowhere near the now-common $30++ Pinots, this is very dark in color, and big for a Pinot. The nose has dark cherry and slight oak char. The rich palate has dark cherry fruit, cola, light oak char, with vanilla. It is intense, with great fruit/tannin/acid balance. A really nice wine.

2011 Laya Garnacha (30%)/Monastrell (70%), Almansa, Spain $7. This is a lush, somewhat simple, but very drinkable wine at a good price. Garnacha = Grenache; Monastrell = Mourvedre, so this is a Rhone blend. It has plums, light black pepper, and anise. The palate has simple, young grapey/plumy fruit with soft tannin and acid, and is easy to drink. Very good party wine.

Enjoy! ❖

August 17-18
The Gordon Research Seminar (GRS) on Neuroethology: Behavior, Evolution & Neurobiology, Mount Snow Resort, VT. *Information:* Internet: http://tinyurl.com/neuroethology.

August 30-September 3
The 14th International Conference on Systems Biology, Copenhagen, Denmark. *Information:* Internet: http://icsb2013.dk/.

September 6-9
45th European Brain and Behaviour Society Meeting, Munich, Germany. *Information:* Internet: http://ebbs2013.com/.

September 8-11
ET-13, the Thirteen International Conference on Endothelin, Tokyo, Japan. *Information:* Email: n-emoto@kobepharma-u.ac.jp or endothelin2013@congre.co.up; Internet: http://www.endothelin-2013-tokyo.com/.

September 29-October 2
Lipids in Cardiac Health and Diesease: From Toxicity to Protection the 11th Annual Meeting of the Society for Heart and Vascular Metabolism, Cambridge, MD. *Information:* Internet: http://heartmetabolism.org/2013/.

October 5-7
The 13th International Congress on Amino Acids, Peptides and Proteins (ICAPP), Galveston, TX. *Information:* Dr. Wu. Email: g-wu@tamu.edu.

October 23-26
24th International Symposiumon the Autonomic Nervous System, Kohala Coast, Bigh Island of Hawaii. *Inforamtion:* Anita Zeller, AAS Executive Secretary, American Autonomic Society, 18915 Inca Ave, Lakeville, MN 55044. Tel.: 952-469-5837; Fax: 952-469-8424; E-mail: zeller.anita@mayo.edu; Internet: http://www.americanautonomicsociety.org.

October 24-27
The 18th World Congress on Controversies in Obstetrics, Gynecology & Infertility (COGI), Vienna, Austria. *Information:* Internet: http://www.congressmed.com/cogi/.

November 16-20
22nd IUBMB and 37th FEBS Congress, Marrakech, Morocco. *Information:* Internet: http://www.iubmb-2013.org/.

December 14-18
2013 American Society for Cell Biology Annual Meeting, New Orleans, LA. *Information:* Internet: http://www.ascb.org.

2014

June 24-28
The International 22nd Puijo Symposium "Physical Exercise in Clinical Practise—Critical Appraisal of Randomized Controlled Trials," Kuopio, Finland. *Information:* Email: saila.laaksonen@uef.fi; Internet: http://www.puijosymposium.org.

August 25-29
7th World Congress for Psychotherapy, Durban, South Africa. *Information:* Janie Koeries, Paragon-Conventions, Milnerton Mall, Loxton Road, Milnerton, Cape Town, South Africa. Tel.: 021 552 8679; Email: jkoeries@paragon-conventions.com; Internet: http://www.wcp2014.com.

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Elaine Fuchs and J. Craig Venter

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