The National Science Foundation (NSF) funds the bulk of non-medically biological sciences research in the US. Most, but not all, of this funding comes from the Directorate of Biological Sciences (BIO). This directorate is divided into four divisions: Biological Infrastructure, Environmental Biology, Molecular and Cellular Biosciences, and Integrative Organismal Systems (IOS). Each of these divisions has a division director, a deputy division director, administrative staff, and program directors (formerly called program officers). Program directors are responsible for managing the review of research proposals, making recommendations for the award or decline of funding for research proposals, monitoring the progress of awarded projects, communicating with the scientific community and individual PIs, and providing input to the NSF regarding scientific and policy issues. There are two types of program directors at the Foundation: permanent program directors and rotators; their duties are essentially the same. Permanent program directors are, as the name indicates, permanent federal employees, whereas rotators serve as program directors for a term usually of one to three years (see this website for more information: http://www.nsf.gov/about/career_opps/rotators/index.jsp). A large fraction of the program directors in the BIO are rotators (e.g., at the time this article was written 70% of the IOS program directors are rotators). The following description of the temporary program director position is based on my experience as rotator in IOS (2007-2010).

**Why does NSF employ rotators when it means that there will be a regular turnover of the scientific staff?**

Academic scientists are a hard-working, self-motivated work force that provide the NSF with a direct link to the scientific community, thus, preventing this federal agency from becoming isolated from the community it serves. As active scientists, rotators are aware of the pressures and demands made of academic scientists, and rotators can and do alert the NSF administration when suggested policies could place an undue burden on the scientific community. In addition, there are lively discussions between the program directors and the administration when it comes to how research funds should be allocated. For example, many program directors have expressed the view that NSF should continue to emphasize the practice of allowing the scientific community to drive the direction of biological research through the submission of “unsolicited proposals” in broadly conceived “core programs” (i.e., the
The Physiologist

Contents

Giving Back to the Community:

Mary E. Chamberlin
77

Working as a Temporary Program Director at the National Science Foundation

Mentoring Forum

Research Advisor’s Checklist 95

M. Harold Laughlin
79

Current Calls for Papers 99

2010 Bodil Schmidt-Nielsen Distinguished Mentor and Scientist Awardee

Science Policy

APS Leadership Visits

Capitol Hill 101

Mentoring as a Player Coach

Congress Finalizes FY 2011 Budgets 101

M. Harold Laughlin 79

People & Places

Goldberg Elected to NAS 102

New Regular Members 84

Silverthorn Named 102

New Graduate Student Members 85

Outstanding Alumnae

New Affiliate Members 86

Senior Physiologists’ News 104

Now Undergraduate Student Members 87

Positions Available 105

Recently Deceased Members 87

Chapter News

First Annual Meeting of the Indiana Physiological Society 88

Oklahoma Society of Physiologists 90

Education

Forty-six Science Teacher Fellows

Books Received 108

From Across the Nation Participate in APS Fellowship Programs 92

Meetings & Congresses 109

The Wine Wizard 108

Books Received

APS Membership Application 111

Published bimonthly and distributed by
The American Physiological Society
9650 Rockville Pike
Bethesda, Maryland 20814-3991
ISSN 0031-9376

Joey P. Granger
President
Peter D. Wagner
Past President
Susan M. Barman
President-Elect
Martin Frank
Editor and Executive Director

Councillors
Kenneth M. Baldwin,
David P. Brooks,
Dennis Brown, Patricia E. Molina,
Ida Llewellyn-Smith,
Usha Ruj, Jane F. Reckelhoff,
Curt D. Sigmund, Alan F. Sved

Ex Officio
Pamela K. Carmines,
John C. Chatham,
Thomas A. Pressley,
Hershel Raff,
Jeff M. Sands


Subscriptions: Distributed to members as part of their membership. Nonmembers in the USA (print only): individuals $85.00; institutions $135.00. Nonmembers in Canada: individuals $125.00; institutions $170.00. Nonmembers elsewhere: individuals $125.00; institutions $170.00. Single copies and back issues when available, $20.00 each; single copies and back issues of Abstracts issues when available, $30.00. Subscribers to The Physiologist also receive abstracts of the Conferences of the American Physiological Society. The online version is available free to all worldwide.

The American Physiological Society assumes no responsibility for the statements and opinions advanced by contributors to The Physiologist.

Please notify the APS Membership Department as soon as possible if you change your address or telephone number.

Headquarters phone: 301-634-7118
Fax: 301-634-7241
Email: info@the-aps.org
http://www.the-aps.org
Printed in the USA
Mentoring as a Player Coach

M. Harold Laughlin

2010 Bodil Schmidt-Nielsen Distinguished Mentor and Scientist Awardee
Univ. of Missouri-Columbia

The Bodil Schmidt-Nielsen Distinguished Mentor and Scientist Award is given by the American Physiological Society in honor of an inspirational mentor and scientist, Dr. Bodil Schmidt-Nielsen. This award is given to honor a member of the American Physiological Society who is judged to have made outstanding contributions to physiological research and demonstrated dedication and commitment to excellence in training of young physiologists whether by mentoring, guiding and nurturing their professional and personal development, developing novel education methods/materials, promoting scientific outreach efforts, attracting individuals to the field of physiology, or by otherwise fostering an environment exceptionally conducive to education in physiology. Being selected for this award is both a blessing and a humbling experience. I am grateful to receive this recognition based on the evaluation of my scholarship and the opinions of those I have mentored.

The purpose of this brief manuscript is to summarize the talk presented at the Bodil Schmidt-Nielsen Distinguished Mentor and Scientist Award Reception at the 2010 Experimental Biology Meeting. As outlined in the materials provided to me, the presentation, and, therefore, this paper, was to be presented primarily for “...students, postdoctoral fellows, and new investigators about mentoring and being a successful mentor (or topics of a similar nature):” My preparation for this task was a challenge because there is a lot of good material available, including the previous presentations of Bodil Schmidt-Nielsen Distinguished Mentor and Scientist Awardees available at this web address (http://www.the-aps.org/awards/society/bodil-recipient.html).

There are two primary purposes with this communication. The first is to summarize the eight goals I have for those I mentor. These goals have evolved somewhat over the years; but as I look back, they have remained the same in principal. The second purpose is to summarize key factors and mentors in my life that have contributed to making me the person I am. The skills of a good mentor are the result of life experience and a commitment by the mentor to working for the good of others through disciplined focus. Because life experiences are varied I found myself wondering; from where did my mentoring skills come? As I considered this question, several important sources came into focus: family and home, teachers and coaches, faculty, graduate school experiences, and mentors in everyday life. These factors will be summarized below. Before discussing my goals for mentoring and the factors that have molded me into who I am, it seems appropriate for us to agree on a definition of a mentor.

What is a mentor?

According to Webster’s Dictionary (1992): “...a mentor is an experienced and trusted friend and advisor.” The word “mentor” can be traced back to Homer’s poem The Odyssey in which Mentor is the friend of Odysseus and the tutor of his son Telemachus. Thus, the concept of “mentor” is that of an experienced and trusted friend and advisor who also serves as a tutor. As I considered mentorship and leadership over the past few months preparing for this award, I concluded that my style of mentoring is most like that of a player coach. A player coach is one who simultaneously holds playing and coaching duties. A friend recently gave me a copy of Bill Russell’s book entitled Russell Rules. Bill Russell was a successful mentor to many basketball players as he won 11 championships in 13 seasons with the Boston Celtics and coached the team in two of those championships. He was the first African-American coach in the NBA and the first and only player/coach to win two NBA championships. He was the first to win an NCAA championship, an Olympic Gold Medal, and an NBA championship all in one year. HBO concluded that Bill Russell is the greatest player/coach and the greatest winner of the twentieth century. I have selected some quotes from Bill Russell because he is an outstanding mentor, as well as being the greatest player/coach of our time.

Bill Russell stated that “Great leaders … possess three flexible skills: toughness, tenderness, and the ability to know when is the right time to use one or the other.” (p. 73). In my view, this is true of great scientific mentors, as well as great leaders in any walk of life. There are times a mentor must be tough and times that a mentor must be tender. A major challenge is knowing when it is best to be tough and when it is best to be tender. Keeping the goals of mentoring in mind was helpful to me in deciding when to be tough and when to be tender.

Goal 1. Prepare each trainee for his/her future.

As I mentioned above, there is a large amount of literature available about mentoring. Review of this material makes it clear that there are several successful approaches to mentoring. I will not summarize them all; rather, I will outline the goals for mentoring that I have applied over the years. Only summarizing my approach and not summarizing others is not intended to suggest that my approach to mentoring is superior to the others; rather, it is how I have mentored. My primary goal for mentoring is to prepare my students/fellows for what they want to be, or in other words, what they believe their career will involve. It is not my goal to form more scientists like me or to use them as hands to accomplish my research. Some trainees are not sure what type of career they desire, so this expands the goal to include helping the trainee discover what they want to be as a scientist.

Goal 2. Encourage independent research ASAP in training programs.

The second major goal is to encourage
independent research as soon as possible for each mentee. It is important for the mentees to begin to do independent research as soon as possible after joining the laboratory because the most fulfilling research experience, I believe, is that which sprouts from the investigator doing the research. I encourage PhD students to incorporate into their thesis research new techniques/approaches that have not been previously developed and perfected in our laboratory. The importance of the trainees doing independent research was also of value to Schmidt-Nielsen, as reported by Dantzler. Dantzler indicated that “Dr. Schmidt-Nielsen believed that creative research was the only thing of any importance and that any other aspect of graduate education was relatively unimportant.” Schmidt-Nielsen “was an ideal mentor for the highly independent student.” Bodil Schmidt-Nielsen was an inspirational mentor. (Dantzler, W. H. Living History of Physiology: Bodil Schmidt-Nielsen. Adv Physiol Educ 30:1-4, 2006). Navar also emphasized the importance of a mentor inspiring the trainees and encouraging independent research as he stated, “A good mentor should be a shining beacon helping the mentee make decisions, but never making them for the mentee, and helping to provide the pros and cons of various avenues without directly telling them which one to take.” (L. Gabriel Navar, The Physiologist 49: 6, December 2006).

I think it is very important to help the mentees develop an area of research that can be continued when their training is completed. This is especially important for postdoctoral fellows. They need to start down the road of independence and be able to establish themselves without concern about competing with their mentor. To this end, we plan for the postdoctoral fellow to develop an independent research program during the second and third year of training and to develop at least one independent grant application by the end of year three.

Goal 3. Teach the trainee that science is a passionate pursuit of truth.

The third goal of mentoring is to teach the mentee that science is a passionate pursuit of truth, not a pursuit of glory. I believe this is the heart of bio-ethics in biomedical sciences. Given that the reason for doing research is discovery, then misconduct does not make sense, for it will slow down or prevent discovery. Also, as summarized below under goal 7, a good mentor needs to teach mentees the importance of peer review. Peer review is critical in the passionate pursuit of truth.

Goal 4. Create and maintain a rich, scholarly environment.

One of the most important things I do as mentor is to create and maintain an environment in which developing scientists can flourish. How well they do in the environment is largely determined by them and how they use what is offered. My job is to try to sustain a positive, exciting environment. Part of maintaining a powerful environment is the recruitment of students and postdoctoral fellows to the laboratory. I believe that research is more fun and productive when accomplished in collaborative groups. Quality students and fellows are attracted to a strong environment in the laboratory, in the department, and at the institution. I have been blessed by having quality students and postdoctoral fellows over the years.

Goal 5. Teach and demonstrate solid experimental design.

My fifth goal of mentoring is to teach solid experimental design. In my experience this is best accomplished through demonstrating solid experimental design in ongoing projects, developing research projects, and in the student’s thesis research. Developing scientists need to learn how to determine required control experiments and to seek peer review of experimental design at each step of experiments. Also, trainees need to learn to ask questions and experience the fact that it is more important to understand than to appear smart.

Goal 6. Invest time in each trainee.

My sixth goal of mentoring is to invest sufficient time in each trainee. Investing sufficient time in each mentee became a challenge when I was appointed as Department Chair. To help assure sufficient time, I strive to schedule a one hour meeting each week with each student and postdoctoral fellow. Sometimes we don’t spend the whole hour; sometimes we do. Mentees are also expected to attend bi-monthly lab meetings and weekly journal club. In addition mentees are expected to attend seminars in the Departments of Biomedical Sciences and Medical Pharmacology and Physiology, and as well as at the Dalton Cardiovascular Research Center at MU. Trainees are also encouraged to attend weekly cardiology grand rounds at the school of Medicine. All of these venues provide opportunity to talk about science and help the trainees fine tune their interactive skills.

Goal 7. Teach trainees to seek and appreciate peer review.

Teaching trainees the importance of peer review is another key goal of mentoring in my laboratory. Peer review should be sought by the mentees in the laboratory, among local colleagues, and outside the university. For many, being criticized is an unpleasant occurrence. Indeed, often I hate it. However, criticism can make science better. Compliments just make you feel better for a time, but they do not make the science you do better. Criticism can make your science better. Trainees need to cultivate peer review and learn to appreciate and be thankful for criticism, even when it hurts. One important component of this is for them to attend national meetings and present results at these meetings. We strive to have trainees attend an APS scientific meeting and one other national meeting each year.

Goal 8. Provide support to the trainees throughout their careers.

Ideally mentoring establishes a relationship. These relationships are a rich blessing.

Being a mentor does not end when the mentee moves on to the next stage of career development. Indeed, the relationships can be as rich after the trainee has moved on as they are while they still work in the laboratory. The mentor should provide support for as long as needed. I have found that the relationship with each mentee is unique, but one constant is that I care about them. It is fun and gratifying to watch the careers of the mentees develop. While development of a good relationship is important in mentoring, it is important to emphasize that while I am thankful for the mentoring experiences I have had over the past 25 to 30 years, it has not been easy. Mentoring is hard work and often it is necessary to be tough even if you are a “nice guy.”

What were key developmental components in my life that developed me as a mentor?

For the sake of argument, let’s accept the assumption that I am a good mentor. What were the key components in my life that developed mentoring skills? As I have thought about this question over the past few months, I concluded that I cannot over estimate...
the impact my first mentors, Mom and Dad, had on me. My father, Charles Maurice Laughlin, had severe health challenges as a child and endured years of physical therapy before he could walk. Throughout his life, he had limited use of his right leg and very limited use of his right arm and hand. Dad was an outstanding farmer committed to food animal husbandry and producing food for mankind. He encouraged me to find something to do with my life that I would enjoy so much that I would be happy to work hard at it. Dad considered hard work a virtue and desired to outwork anyone with whom he worked. In his opinion, my job was not hard work because hard work did not include reading, writing, or anything done while one is seated at a desk.

Dad consistently refused to use the phrase “I can’t.” He could not accept that he couldn’t do something he considered needed to be accomplished. He often said that “There is nothing you cannot do unless you are willing to say, ‘I can’t.’” Phil. 4:13 states: “I can do all things through Christ who strengthens me.” I think this attitude developed in my dad as he spent years in physical therapy and throughout his life as he struggled with his disabilities, but I do not know for sure. Dad sustained this attitude to a fault as age mercilessly took the strength from his arms and legs. Yet this attitude was required for success for much of Dad’s life, and I believe this attitude can be an asset in many areas of life for everyone.

My mother, Charlotte Olive (Starke) Laughlin, taught me the importance of things of faith. She is a Methodist preacher’s daughter and has lived out a wonderful relationship with God through Jesus Christ for over 92 years. My commitment to the search for truth, integrity, and relationships was formed in this context. Even today, the most important relationship I have is with Jesus Christ. Psalms 21:1 states, “The Lord is the strength of my life; of whom shall I be afraid?” My mom and dad taught me the importance of priorities: God, family, country friends and profession.

Bill Russell said, “I spent my early years around people who did not have material wealth or big names but who taught me everything I needed to know about winning. I learned that it did not matter what kind of job you had but what kind of work you did.” (p. 213). When Bill Russell says what kind of work you do, he is referring to the quality of your work. My parents had similar views about work. They believed that no matter the task you should work hard to accomplish the task and do it well. In my parents’ view, any job (profession/employment) is a good job. Dad assigned me many jobs on the farm that I did not consider good jobs at the time. However, I now realize that I learned important lessons from these jobs.

I am thankful for the rich mentoring I received as I grew up on a small Iowa farm. I remain to this day an Iowa farm boy who loves physiology. The family team work and community team work required to farm in those days were rich experiences. I believe these experiences were important in developing the enjoyment I have from, and success I have had with, collaborative research.

The great mentors I had throughout my schooling were also important in my development. My coaches: Coach Hansen (track), Coach Brocks (baseball), Coach Ward (basketball and life), and my favorite science teacher, Mr. Graves, taught me the importance of discipline, attention to details/basics, and hard work. In the sports in which I participated, I loved practice, even when all we did was conditioning. These were men of integrity who were committed to education and to helping boys and girls become good adults. I also had good mentors during my college years at Simpson College. Ms. Stockton, Dr. Watson and Dr. Meintz fueled my love of science, and the discovery and wonder of biology and chemistry.

John Diana was my thesis advisor in graduate school at the Univ. of Iowa. He taught me a love for the microcirculation of cardiac and skeletal muscle. He and the faculty in the Department of Physiology and Biophysics at Iowa prepared me well with fundamental physiology. I took every physiology course I could fit into my schedule. Also, the comprehensive exam used there was a great experience for me. I remember with fondness the experiments I did with Jack Rall using thermocouples to measure the heat produced by contracting skeletal muscle. I also remember doing experiments with cardiac glycosides on isolated rat papillary muscles for Mike Brody, as well as the other projects I was assigned for my comprehensive exam. What a great six months it was.

My postdoctoral training at the Univ. of Iowa was accomplished with Drs. Tipton and Diana. Working with Dr. Tipton taught me so much about exercise science and about running a laboratory. I also learned how to use laboratory meetings/journal clubs to teach students and fellows to think critically and communicate science rigorously as I worked as a trainee in Tipton’s laboratory. There are many memories of issues that relate to mentoring that I remember from Dr. Tipton. One example is that I credit him with telling me that one can help a good student become a good scientist, and one can slow a good student down; but if that student is interested and equipped to be a good scientist, that student will develop with or without help. He also taught me to not worry about competition in science because there is always room at the front of the line. During those years, I also learned much about the coronary circulation from Dr. Mel Marcus.

Following four years of research experience in the United States Air Force as an Aerospace Physiologist, I came back to academia. My mentors when I became a new Assistant Professor were Bob Armstrong and Fred Peterson. Fred Peterson was a key advisor, good friend, and role model of a committed teacher and research scientist. Bob Armstrong is the best example of a mentor for a new faculty member that I have known. He was, and is, an experienced scholar and research scientist, trusted friend, superb advisor and effective teacher. I learned many secrets of success in teaching and research from Bob. Bob Armstrong was nothing short of a wonderful mentor. I still believe that Bob was more excited about the funding of my first NIH grant than I was. Those years of working with Bob Armstrong, who was never concerned about who got the most credit for our work, remain as precious memories for me. As has been true throughout my life, I grieved the transition in my career that took me from that phase of my life to the next phase. However, now I realize that the Univ. of Missouri was the perfect place for the final development of my career.

The move to the Univ. of Missouri has been wonderful. The large number of outstanding colleagues at MU has provided a rich, stimulating, exciting environment in which to develop most of my career. Early on, I learned about grantsmanship from Drs. Allen Jones and Richard Adams, my department chairs at the time. There are a large number of outstanding colleagues at
MU who have provided a rich, stimulating, and exciting environment in which to develop my career and train students and postdoctoral fellows over the past 25 years. I have also been blessed with outstanding staff in my laboratory. Currently, Pam Thorne, Ann Melloh, and Dave Harrah play key roles in training students and postdoctoral fellows in my laboratory. They are key components of my research and of mentoring trainees in my laboratory.

For the past 40 years, there is one person who has been the central focus of my life and the major tool God has used to make me who I am, my wife. She is the love of my life. She and my family have been a major force in making me who I am. Doing the best I could to be a father to my three bright, energetic, and wonderful sons taught me much about mentoring. My family, as well as many of my trainees, knows that I am quite boring. I enjoy work, exercise, and solace. But the joy of my life is linked to my wife and family. Lynne is my love, the mother of my sons, grandmother of my grandchildren, my best friend and my constant advisor/partner. It is important to emphasize that I do not believe I sacrificed family for career. Rather, I believe that my wife and family chose to sacrifice time, energy, and resources along with me, to allow me to pursue my science dreams. We did this together. Equally, we strove together to fulfill the dreams of each member of my family. When the boys were young, this was soccer. As they matured, they each developed their dreams.

I love physiology and biomedical science, but my identity is not just as a scientist. I am a man, husband, father, and grandpa who teaches and does science. I think it is important to sustain relationships and love in your life while completing what must be accomplished to be a successful scientist. This can only be accomplished by discipline driven by priorities. The principle of living a full life while working hard to be an outstanding scientist is one that I have tried to live out for my trainees.

So in closing, I must express that I am grateful for the recognition, and I am honored to be associated with an award named after Dr. Bodil Schmidt-Nielsen. It is both a blessing and a humbling experience being selected for this award. I am grateful to receive this recognition based on the evaluation of my scholarship and the opinions of those I have mentored. Further, it is an honor to be both associated with an award named after Dr. Bodil Schmidt-Nielsen and with the colleagues who are listed as previous Bodil Schmidt-Nielsen Distinguished Mentor and Scientist Awardees. I thank the APS Women in Physiology Committee for establishing the Distinguished Mentor and Scientist Award. I also thank Dr. Jane Reckehoff and the members of the Selection Committee for selecting me for this award. I thank those who supported my nomination, both my colleagues and trainees.

I recognize that I am still just an Iowa farm boy who loves science and who has been exceedingly blessed. As I look back over the years, I find that I am deeply thankful for the series of appointments/jobs I have had. I am thankful for the wonderful colleagues and mentors with whom I was blessed to work. I am also thankful for the outstanding students, fellows, and junior faculty with whom I have worked. I honestly believe that any scientist, who was identified as the mentor of these students and postdoctoral fellows, would appear to be an outstanding mentor. I am thankful for my role in their lives and for all I have learned from them. The research and publications that this award recognizes were the result of the outstanding students and fellows who have worked with me. Truly, the award should be to all of us as a team, not just to me. I thank each of my trainees who were able to attend the luncheon; I was greatly honored by your presence. Finally, all the glory should be to God. I thank my Lord and Savior for all the blessings I have tried to summarize herein.

Temporary Program Director

Proposal submission is not in response to a specific targeted announcement but is based on a PI’s interest in an important biological question). This “bottom up” policy is in contrast to the recent trend of diverting funds from core programs in order to finance research based on proposals answering to solicitations in more narrowly focused, mission-oriented areas as defined by NSF (“top down” policy). Finally, NSF benefits from the scientific expertise of the rotators who are hired to deal with proposals in a specific, albeit quite broad, scientific area (e.g., animal physiology). Therefore, when a PI speaks with the rotator, he or she is speaking with a scientist who has a direct, relevant, and recent understanding of the unique challenges of that discipline.
What are the specific activities of a program director? In BIO, there are two deadlines per year for unsolicited proposals and these proposals are reviewed by *ad hoc* reviewers as well as an advisory panel. When unsolicited proposals arrive, the program directors look over the proposals to see if they have been sent to the correct programmatic area. If there is a question about this, the program director will contact program directors managing other programs to see if the proposal should be transferred to that program or perhaps co-reviewed with another program. A program director is responsible for a given number of proposals each grant cycle and solicits *ad hoc* reviews for these proposals via an electronic correspondence system. Usually more than one program director is involved in assembling an advisory panel, assigning proposals to panelists, and conducting the panel. After the panel is over and a program’s budget has been established, the program director then has the difficult task of deciding which proposals are to be recommended for funding and which are to be recommended for a decline. The program director is not expected to make award recommendations based solely on the panel’s rating (e.g., high priority, medium priority, low priority, not competitive). In addition to taking into consideration the reviews as well as the panel’s comments and ranking, the program director must consider the nature of the proposals that have been recently funded so that specific research areas, types of institutions (e.g., large research universities versus small undergraduate colleges), geographic localities, as well as PI gender and ethnicity are appropriately represented. Another reason to look beyond the panel ratings when making an award decision is that panels can be risk-averse. I was told by my division director, “If everything you recommend for funding works, then you are not doing your job.” That is, NSF does not just fund “safe” research. Recommending the funding of meritorious, high-risk, high-reward projects that might have not fared well in the panel is part of a program director’s job. The program director also has the discretion to fund a project for a shorter term or a different amount than requested by the PI. All recommendations are accompanied by a justification called a review analysis. This is an internal document that describes the program director’s rationale for recommending a decline or award of a proposal. The program director’s recommendation must be approved by the Deputy Division Director before final action is taken. It should be noted that, in practice, a program director’s recommendation is rarely reversed.

Unfortunately, given the budget climate, more proposals that are worthy of funding are declined rather than awarded. Program directors spend a good deal of time on the phone talking to PIs about strengths and weaknesses of a declined proposal and giving them a greater insight into the panel’s opinion of the proposal. Although these PIs may be frustrated or disappointed, most PIs are very appreciative of this input and I encourage all PIs to talk to their program director if their proposal is declined.

In addition to managing proposals, program directors are involved in other activities inside and outside of NSF. Such activities include the review of project reports on current awards, participation on NSF committees, representing NSF at scientific meetings, and visiting academic institutions to make presentations that provide an overview of NSF and alert the scientific community about new programs and initiatives.

What is the work atmosphere like at NSF? The day-to-day operation of an NSF division is different from that of an academic department and, therefore, a rotator must become accustomed to a different work environment. Whereas most academic departments operate as a loose association of independent units (professors, laboratories), an NSF division relies on teamwork in order to receive, review, and make decisions about submitted proposals in a timely manner. Program directors and the administrative staff have their own specific tasks and obligations in the division’s work flow, so they must work closely together in order to get the division’s work done.

The management structure of BIO is more rigidly hierarchical than one finds in a university system. This is probably typical for a federal agency, but rotators can be frustrated by what appears to be top-down, immutable decisions made by higher authorities in the division and directorate. Some degree of tension between academicians and a government system is to be expected, but NSF is to be credited for hiring rotators who are not shy about voicing their opinions and offering constructive criticism regarding long-range policies as well as day-to-day operations of the agency.

How are rotators selected? Typically NSF seeks to recruit scientists who have active, externally-supported research programs, have served as *ad hoc* reviewers and/or panelists, and are broadly engaged with, and known by, their research communities. Usually more than one candidate is interviewed for a position and the interview involves meetings with the division director and deputy division director, program directors, the divisional administrative staff, NSF human resources, and the office of the general counsel. In addition, the candidate gives a seminar about his/her research. Most program directors start their job in midsummer to give them time to settle in, become familiar with the electronic resources used to process proposals, and try to learn the seemingly infinite number of government acronyms before the fall advisory panels begin. In addition, this timing is compatible with academic calendars.

BIO is an extremely pleasant and collegial place to work. Working with people who are focused on achieving the common goal of advancing science is very satisfying and the scientific discussions that take place among program directors are energizing. As several NSF senior managers told me, “Being a program director is the best job in the Foundation” and, in my opinion, they were right. In fact, I can honestly say that being a rotator was the best job experience I have ever had.

As a program director you are the face (or voice) of NSF to the scientific community and you intellectually benefit from exposure to new and exciting scientific research. If you are at a stage of your career when you feel you have the experience and desire to provide this extremely valuable service, your research program can survive (or perhaps flourish) in your absence, and your personal life can handle the disruption of a move to the DC area, then you might consider becoming a rotator at NSF. If you are interested, contact a current program director or appropriate division director (http://nsf.gov/dir/index.jsp?org=BIO).

Acknowledgements: Thanks to Lisa Crockett, Mark Brodl, Adam Summers, and Dick Zimmer for helpful comments on this article.
New Regular Members
*transferred from student membership

Meghan Clements
Genzyme, Framingham, MA

Andrea Corcoran
Dartmouth College, NH

Sangita Dandekar
New York Univ.

Christophe De Jaeger
Inst. Euro.Pour La Longevite, France

Joern Diedrichsen
Univ. of London, UK

William F. Doke

Dongsheng Duan
Univ. of Missouri, Columbia

Heather Edgell
Univ. of Western Ontario, Canada

Laurence J. Egan
Nat'l. Univ. of Ireland, Galway

Vadim Fedorov
Ohio State Univ.

Xiyuan Feng
Emory Univ., GA

Scott H. Frey
Univ. of Oregon, Eugene

Dominique Gagnon
Univ. of Chicago, IL

Maria Galán
Tulane Univ., LA

Zhi-Dong Ge
Med. Coll. of Wisconsin

Nikki Danielle Gillum*
Univ. of Kentucky, Lexington

Sergej Girman
Oregon HSU, Portland, OR

Joshua X. Gittelman
Univ. of Texas, Austin

Stella Goulopoulou*
Univ. of Cincinnati Coll. Med., OH

Choongkil Lee
Seoul Nat'l Univ., Republic of Korea

Warren Lester Lee
St. Michael's Hosp., Toronto, Canada

Brenda Lilly
Nationwide Children's Res. Inst., OH

Isa Maria Lindgren
Johns Hopkins Sch. Med., MD

Omar A. Alhomrany
Mount Sinai Sch. of Med., NY

Andrew D. McCulloch
Univ. of California, San Diego

Jawahar L. Mehta
Univ. of Kentucky, Lexington

Michelle M. Monasky*
Univ. of Illinois, Chicago

Allan G. Murray
Univ. of Alberta, Winnipeg, Canada

Moni Nader
Alfaisal Univ., Riyadh, Saudi Arabia

Wei Ni
Univ. of California, San Francisco

Zahra Nourian
Univ. of Missouri, Columbia

Kathleen L. O'Connor
Univ. of Kentucky, Lexington

Sun-Young Oh
Chonbuk Nat'l. Univ., Republic of Korea

Elimelda Moige Ongeri
North Carolina A&T State Univ.

Manikandan Panchatcharam
Univ. of Kentucky, Lexington

Jun Izawa
Univ. of Electro-Commuc., Japan

Jihang Ji
Louisiana State Univ., HSC

Hanjoong Jo
Emory Univ., Atlanta, GA

Jose Josan
Roche Lab, Lima, Peru

John Y. Jun
Penn State Hershey Med. Ctr.

Jagmeet S. Kanwal
Georgetown Univ., Washington, DC

Modar Kassan
Tulane Univ., New Orleans, LA

Stella Kim
Univ. of Southern CA, Los Angeles

Rishikes Manohar Kulkarni
Univ. of Cincinnati, Coll. of Med., OH

Nicole J. Lecapitaine
Louisiana State Univ., HSC

Choongkil Lee
Seoul Nat'l Univ., Republic of Korea

Warren Lester Lee
St. Michael's Hosp., Toronto, Canada

Brenda Lilly
Nationwide Children's Res. Inst., OH

Isa Maria Lindgren
Johns Hopkins Sch. Med., MD

Janine M. Little*
Francis Tuttle Tech. Ctr., OK

Jennifer Lucitti
Univ. of North Carolina, Chapel Hill

Heather M. Mattern
Augustana College, Rock Island, IL

Xiuying Ma
Merek & Co., Inc., Rahway, NJ

Latronya McCollum
Mount Sinai School of Med., NY

Andrew D. McCulloch
Univ. of California, San Diego

Jawahar L. Mehta
Univ. of Arkansas, Little Rock

Michelle M. Monasky*
Univ. of Illinois, Chicago

Allan G. Murray
Univ. of Alberta, Winnipeg, Canada

Moni Nader
Alfaisal Univ., Riyadh, Saudi Arabia

Wei Ni
Univ. of California, San Francisco

Zahra Nourian
Univ. of Missouri, Columbia

Kathleen L. O'Connor
Univ. of Kentucky, Lexington

Sun-Young Oh
Chonbuk Nat'l. Univ., Republic of Korea

Elimelda Moige Ongeri
North Carolina A&T State Univ.

Manikandan Panchatcharam
Univ. of Kentucky, Lexington

Chikara Abe*
Gifu Univ., Gifu, Japan

Sowmya S. Anjur
Illinois Math. & Sci Acad., Aurora

Konstantinos N. Aronis
Beth Isreal Deaconess Med. Ctr., MA

Kjetil Ask
McMaster Univ., Hamilton, Canada

Kameswara Rao Badri
Univ. of Chicago, IL

Matthew Alexander Bailey
Univ. of Edinburgh, UK

Sonali Barwe
Nemours/Alfred I. duPont Hosp. for Children, DE

Carlton Bates
Children's Hosp. of Pittsburgh, PA

Erik Behringer*
Univ. of Missouri, Columbia

Andriy E. Belevych
Ohio State Univ.

Irina N. Beloozerova
Barrow Neurol. Inst., Phoenix, AZ

Pallavi Bhattaram
Cleveland Clinic, OH

Cyrus Billimoria
Boston Univ., MA

J. Harry Blaise
Trinity College, Hartford, CT

Stephen S. Blevins
Med. Educ. Admins Svcs, Coral Gables, FL

Donna M. B. Boedtkjer
Aarhus Univ., Denmark

Jean Chrisostome Bopassa
Univ. of CA, Los Angeles

Julien Vincent Brugniaux
Univ. of Glamorgan, Pontypridd, UK

Joshua Brumberg
Queens College, Flushing, NY

Mary Susan Burnett
Medstar Health Res. Inst., Wash., DC

Sanjukta Chakraborty
Texas A&M HSC, College Station

Hema Kumar Chandru
Oklahoma Medical Res. Fndn.

Natalie Ann Chapados*
Montfort Res. Inst., Montreal, Canada

Manikandan Panchatcharam
Univ. of Kentucky, Lexington

Gao Chun-Fang
150th Central Hosp., Luoyang, China

Paul Cisek
Univ. of Montreal, Canada
Anil Kumar Pandey  
GSL Med. Coll., Rajahmundry, India  
Sungmi Park*  
Univ. of Iowa  
Jennifer Margaret Pell  
The Babraham Inst., UK  
Christopher Pattillo  
Louisiana State Univ., HSC  
Bernd Pelster  
Univ. of Innsbruck, Austria  
Manuel Pott  
Univ. of Cambridge, UK  
Yanfei Qi*  
Univ. of Florida, Gainesville  
Aijuan Qu  
NCI, NIH, Bethesda, MD  
Carrie R. Reynolds*  
George Washington Univ., Washington, DC  
Stefano Rimoldi  
Bern Univ. Hospital, Switzerland  
Caroline L. Rios*  
Univ. of Texas HSC, San Antonio  
Michelle Sands  
Univ. of New Mexico, Albuquerque  
Robson A. S. Santos  
Univ. of Fed De Minas Gerais, Brazil  
Nicholas D. Schiff  
Weill Cornell Med. Coll., NY  
Christopher Shaw  
Univ. of Birmingham, UK  
Melissa Scotti  
Northern Illinois Univ., Dekalb  
Robert Wade Siggins  
Louisiana State Univ. HSC, New Orleans  
Sook Jin Son  
Georgia HS Univ., Augusta  
William Edmund Sonntag  
Univ. of Oklahoma HSC  
Martha H. Stipanuk  
Cornell Univ., NY  
Prithu Sundar  
La Jolla Inst. for Allergy and Immun, CA  
Hua Tang  
Univ. of Texas HSC, Tyler  
Bertrand C.W. Tanner  
Univ. of Vermont  
Lise Thomas  
Quinnipiac Univ., Hamden, CT  
Kim Quang Tran  
Des Moines Univ., IA  
Phu V. Tran  
Univ. of Minnesota  
Jonas Thue Treebak  
Univ. of Copenhagen, Denmark  
Wouter David Van Marken Lichtenbelt  
Maastricht Univ., Netherlands  
Claudio Javier Villanueva  
Univ. of California, Los Angeles  
Brent Wagner  
Univ. of Texas HSC, San Antonio  
Watt W. Webb  
Cornell Univ., Ithaca, NY  
Ralf Wessel  
Washington Univ., St. Louis, MO  
William S. Wright*  
Univ. of South Carolina, Spartanburg  
Rob C.I. Wust  
Univ. of Leeds, UK  
Lumei Xu  
Case Western Reserve Univ., OH  
Tetsuo Yamamori  
Natl Inst. for Basic Bio. Okazak, Japan  
Katrina Go Yamazaki  
Univ. of California, San Diego  
Samantha Yeligar  
Emory Univ., Atlanta, GA  
Colin N. Young*  
Cornell Univ., Ithaca, NY  
Joseph P. Yuan  
Univ. of North Texas HSC, Fort Worth  
Joseph Zacharia  
Univ. of Maryland, Baltimore  
Spiros Zakynthinos  
Evangelismos Hosp., Athens, Greece  
David P. Zenisek  
Yale Univ., New Haven, CT  
Xiaoxu Zhou  
Rhode Island Hosp., Providence  
Jasenka Zubcevic  
Univ. of Florida, Gainesville  

New Graduate Student Members

Khaled Soliman Abd-Elrahman  
Univ. of Calgary, Canada  
Sherry Adesina  
Emory Univ., GA  
Elinette Albino  
Ponce Sch. of Med., Puerto Rico  
Charles Anderson  
Virginia Commonwealth Univ.  
Jessica Rose Anderson  
Medical College of Georgia  
Christopher John Arellano  
Univ. of Colorado, Boulder  
Richard Keith Babbs  
Pennsylvania State Univ.  
Yeshavanth K. Banasavadi-Siddegowda  
Univ. of Toledo, OH  
Alicia B. Barclay  
Lehman College, NY  
Andre Sales Barreto  
Federal Univ. of Sergipe, Brazil  
Richard Beard  
Idaho State Univ.  
Alexandre C. Beaudry  
Univ. of Paris, France  
Brenda Benson  
Brigham Young Univ., UT  
Subha Bhaskaran  
Oakland Univ., CA  
Randi Groslier Bjaelede  
Aarhus Univ., Denmark  
Odelia Yuh Ngala Bongmba  
Univ. of Houston, TX  
Andre Bowers  
Univ. of the West Indies  
Leryn Boyle  
Univ. of Missouri  
Inbal Brickner-Braun  
Ben Gurion Univ., Israel  
Damien Callahan  
Univ. of Massachusetts  
Kayla Campbell  
Ball State Univ., IN  
Stephen Jordan Carter  
Univ. of Alabama  
Benjamin W. Cartner  
Appalachian State Univ., NC  
Carlos Michel Castorena  
Univ. of Michigan  
Suraj Cheryan  
Univ. of Vermont  
Avi Cohen  
Ross Univ., Dominican Republic  
Jason Cook  
Mt. Sinai Sch. of Med., NY  
Michael Devinney  
Univ. of Wisconsin  
Qiming Duan  
Univ. of Toledo HSC, OH  
Antonio Duarte  
Gama Filho Univ., Brazil  
Val Andrew Fajardo  
Brock Univ., Canada  
Richard J. Faris  
Iowa State Univ.  
Silímara Formenti  
Fed. Univ., Sao Paulo, Brazil  

85
Sara Brooks Fournier  
West Virginia Univ.

Nathan Garvin  
Pennsylvania State Univ.

Noah McGarrity Gibson  
Univ. of Northern Colorado

Monica Gole  
Univ. of Mississippi

Benjamin Thomas Gordon  
Univ. of South Carolina

Matthew William Gorr  
Ohio State Univ.

Niamh Goulding  
Univ. College of Cork, Ireland

Satish Gowda  
SUNY Downstate Med. Ctr., NY

Neil Greening  
Univ. Hosp., Leicester, UK

Ahmed Fathi Halaweish  
Univ. of Iowa Hospitals & Clinics

Jeffery Hatcher  
Univ. of Central Florida

Grant Henson  
Univ. of Colorado, Boulder

Eric Herbst  
Brock Univ., Canada

Justin Perry Herdee  
Appalachian State Univ., NC

Seth Holwerda  
Univ. of Missouri, Columbia

Elliot J. Howard  
Univ. of California, San Diego

Yang Hu  
Oklahoma Univ. HSC

Matthew Hudson  
Univ. of Florida

Bruna Inoue  
Med. Coll. Univ., Sao Paulo, Brazil

Michele Nerissa Insanally  
Univ. of CA, Berkeley

Ninitha A. Joyraj  
Michigan State Univ.

Jay Steven Johnson  
Univ. of Missouri

Priyanka Kakad  
Loyola Univ. Med. Ctr., IL

Nishan Sudheera Kalupahana  
Univ. of Tennessee

Sang Hwan Kim  
Univ. of New Mexico

James Kuczmarski  
Univ. of Delaware

Ning Lai  
Johns Hopkins Univ., MD

Yang Lee  
Texas A&M Univ.

Brittany Luckett  
Pennsylvania State Univ.

Andrew Ludlow  
Univ. of Maryland

Alexandra Michelle Machikas  
Pennsylvania State Univ.

Marina Martinez  
Univ. of Arizona

Gisele Maury  
Univ. Catholique De Louvain, Belgium

Deneshia Jena McIntosh  
Meharry Medical College, TN

Thomas H. Meek  
Univ. of California, Riverside

Zeljka Minic  
Wayne State Univ., MI

Manuel Montero  
Loma Linda Univ., CA

Richard Garrett Morgan  
Univ. of Utah

Gary Charles Mouradian  
Med. Coll. of Wisconsin

Malay Kanti Mridha  
Univ. of California, Davis

Rebecca Murray  
Univ. of Louisville, KY

Rebecca Jane Naukam  
Oklahoma State Univ.

Hildebrando Candido Ferreira Neto  
Univ. of Sao Paulo, Brazil

Ejike Nwankwo  
Univ. of Camerino, Italy

Gabriel Olorunleke Oludare  
College of Med. Univ., Lagos

Francesca Pribble  
Univ. of Louisville, KY

May M. Rabadi  
New York Medical College

Anandharajan Rathinasabapathy  
Univ. of Florida

Brian Reger  
West Virginia Univ.

Jacob Richards  
Univ. of Florida

Carolyn Roos  
Mayo Clinic, MN

Roxanna Salim  
Claremont Graduate Univ., CA

Sarah Ann Salyer  
Univ. of Louisville, KY

Arpit Saxena  
Univ. of South Carolina

Shiraj Sen  
Univ. of Texas, Houston Med. Sch.

Deepak Sharma  
BP Koirala Inst. for Hlth. Sci., Nepal

Marianne Gerberg Skals  
Aarhus Univ., Denmark

Marissa Smith  
Virginia Tech.

Dana Smith  
Univ. of Cincinnati, OH

Jesse Adam Solomon  
York Univ., Canada

Shawn Andrew Stasko  
Univ. of Kentucky

Kyle Sunderland  
Univ. of Oklahoma

Ziauddin Syed  
Wayne State Univ., MI

Dharendra Thapa  
West Virginia Univ.

Ana Valencia  
Univ. of Maryand

Gisele Vaz  
Fed. Univ. Minas Gerais, Brazil

Jose Pablo Vazquez-Medina  
Univ. of California, Merced

Kristine Wadosky  
Univ. of North Carolina, Chapel Hill

Treniqa Walters  
Meharry Medical College, TN

Junie Paula Warrington  
Univ. of Oklahoma, HSC

Weijuan Wu  
Univ. of Oklahoma, HSC

Tingting Xiong  
Univ. of Michigan

Xi Yan  
Cornell Univ., NY

Bartosz J. Zieba  
Univ. of Virginia

Sarah Zohdy  
Univ. of Helsinki, Finland

New Affiliate Members

Paul Brown  
Central Comm. College, NE

Wilton Remigio  
Clarkson Univ., CA

Sergiv Rudenkyy  
Brentwood Biomed. Res. Inst., CA

86
New Undergraduate Student Members

Christopher T. Banek  
Univ. of Minnesota, Duluth  
Joshua Houston Briggs  
Univ. of Arkansas, Fort Smith  
Jessica Dahmus  
Penn State Univ.  
Matthew Patrick Darrow  
Univ. of Arizona Sch. of Med.  
Sabya Das  
Univ. of California, Berkeley  
Stephanie Veronica Eldred  
Penn State Univ.  
Robert Fidelibus  
Ohio State Univ.  
Casey French  
Radford Univ., VA  
Julia Victoria Gorgone  
Univ. of California, Davis  
Michael Gowen  
Univ. of Pittsburgh, PA  
Maria Gulas  
Appalachian State Univ., NC  
Jarl Marshall Haggerty  
Univ. of Arizona  
Robert Heler  
Univ. of Richmond, VA  
Tiffany Kuo  
Univ. of California, Davis  
Mali Lavi  
Tel Aviv Univ., Israel  
Anfei Li  
Cornell Univ., NY  
Erin McClure  
Juniata College, PA  
Edward Joseph McKenna  
Univ. of Wisconsin, Madison  
Stephanie Michelle Mutchler  
The College of William and Mary, VA  
Brittany Lauren Reinert  
Wright State Univ., OH  
Katherine Rivera  
Pontificia Univ., Dominican Republic  
Margaret Robotham  
Barnard College, NY  
Ting Ruan  
Univ. of Utah  
Louis Alexis Ruiz  
Univ. of Puerto Rico  
Amy Shah  
Univ. of California, San Diego  
Asmae Toumi  
McGill Univ., Canada  
David Trac  
Emory Univ., GA  
Eliza Van Heerden  
Bates College, ME  
Rebekah Ireland Webster  
Radford Univ., VA  
Brian Paul Wynia  
Univ. of Illinois, Chicago

Recently Deceased Members

Morton F. Arnsdorf  
Chicago, IL  
Nicholas S. Assali  
Pacific Palisades, CA  
Thomas B. Barnett  
Chapel Hill, NC  
John B. Bateman  
London, UK  
C. Gunnar Blomqvist  
Dallas, TX  
J. Richard R. Bobb  
Holly Hill, FL  
Edward G. Boettinger  
Storrs Mansfield, CT  
Ellen Brown  
San Francisco, CA  
Jerome J. Chart  
Helena, MT  
John K. Davidson  
Atlanta, GA  
Hugo Gonzalez-Serratos  
Baltimore, MD  
Keith S. Henley  
Ann Arbor, MI  
Donald J. Jenden  
Olympia, WA  
Jacques A. LeBlanc  
Quebec, Canada  
Alvin E. Lewis  
Galveston, TX  
Ira J. Lichton  
Kailua, HI  
Michael A. Linshaw  
Boston, MA  
Frederick W. Lorenz  
Davis, CA  
Elwin Marg  
Berkeley, CA  
Hildegard R. Marieq  
Charleston, SC  
John P. Mixner  
Hendersonville, NC  
E. Converse Peirce  
Hancock, ME  
Joseph H. Perlmutter  
Chapel Hill, NC  
Herbert Rackow  
Whitestone, NY  
Peter W. Ramwell  
Cresskill, NJ  
Irving Rothchild  
Cleveland Heights, OH  
Tong Winton  
Alameda, CA  
Seymour H. Wollman  
Kensington, MD  
Lester F. Wolterink  
East Lansing, MI  
Harry Y. C. Wong  
Sunbury, OH
The Indiana Physiological Society (INPhys) held its first annual conference on February 5, 2011 at the Van Nuys Medical Science Building at the Indiana Univ. School of Medicine (IUSM) in Indianapolis, IN. The theme of the meeting was “Physiology—Leading the way in mechanistic and translational research.” The meeting was attended by 118 people, including 16 postdoctoral fellows and 53 students, representing 12 institutions across the state, which was remarkable given severe ice and snow conditions. Overall, we achieved our main purpose of INPhys in promoting the increase of physiological knowledge, its dissemination, and its utilization in the state of Indiana. In particular, the contribution of students in their early phase of training enriched the meeting. Indiana is the home to over 50 universities and colleges, so the outreach of INPhys can have a major impact.

The INPhys meeting was opened by Dr. Michael Sturek, President of INPhys and Chair of the Dept. of Cellular & Integrative Physiology at IUSM. He cordially welcomed the attendees to the meeting. His colorful address touched on the rich history of physiology in Indiana and introduced Keynote Speaker John Hall. Dr. Sturek, whose broad knowledge of the scientific content and her attention to details of the logistics and organization made the meeting a success.

INPhys attendees owe many thanks to the Organizing Committee and staff who lead the efforts: Dr. David Basile, Dr. Bonnie Blazer-Yost, Dr. Suzanne Young, Joyce Lawrence, Dr. Sturek, Dr. Glenn Bohlen, Tracy McWilliams, Stanley Stump, Ellen Leonard, and Jessica Friedrich. Special recognition goes to Dr. Young, whose broad knowledge of the scientific content and her attention to details of the logistics and organization made the meeting a success. Dr. Sturek’s address was followed by the Keynote Speaker, Dr. John Hall, Arthur Guyton Professor and Chair of the Department of Physiology and Biophysics at the Univ. of Mississippi Medical Center. His speech was entitled, “Pathophysiology of Hypertension in Obesity/Metabolic Syndrome.” The clarity, relevance, and integrative nature of Dr. Hall’s presentation struck a chord with all in attendance and set a tone for what turned out to be an excellent meeting.

The afternoon session was highlighted with a presentation by another guest speaker, Dr. Matthew Breyer, from the Department of Biotherapeutics Discovery from Eli Lilly & Company. His discussion entitled, “Mouse models of Diabetic Nephropathy—Lost in Translation” touched upon the dearth of mouse models in this field and highlighted the hurdles that must be overcome to translate laboratory findings into treatment regimens that can be applied in patients.

In addition to the guest speakers, the day was highlighted by 10 short presentations with several from graduate students and postdoctoral fellows. These sessions were moderated by IUSM physiology graduate students Julia Hum and Brent Penque, exemplifying the important role of students in making the meeting a success. Presentations and posters were at all levels of physiological research and reinforced not only the theme of translating from cellular and molecular to human subjects research, but also using human/clinical findings to guide cellular and molecular studies. Many opportunities for discussions were available during two separate poster presentations, which included 52 posters. The INPhys was able to provide 10 awards for graduate students presenting outstanding abstracts. These students were Sally Head, Meredith Kohr, Ketrija Touw, Zachary Berwick, Aarthi Maganti, Soyoun Park, Nolan Hoffman, Julia Hum, Lisa Riegle, and Anne Hillyard. Please visit our website to view our program, abstracts, and list of attendees (http://physiology.medicine.iu.edu/indiana-physiological-society/).

In closing statements, Dr. Michael
Sturek announced the newly elected officials for INPhys for 2011-2012.
President: Bonnie Blazer-Yost
Secretary/Treasurer: David Basile
President-Elect: Derron Bishop
Council: Kenneth Gould
Council: Mari Hooper
Student Council: Meredith Kohr
The meeting ended with a social hour at the Univ. Place Conference Center on the IUPUI campus. Support for the inaugural meeting came from the American Physiological Society, the Department of Cellular & Integrative Physiology at IUSM, Kent Scientific Corporation, and the Indiana University Conference Fund.

Awards for graduate students presenting outstanding abstracts were given to (left to right) Ketrija Touw, Lisa Riegle, Zachary Berwick, Anne Hillyard, Nolan Hoffman, Julia Hum, Meredith Kohr, and (not present) Soyoung Park, Sally Head, and Aarthi Maganti.

John Lopshire of the Krannert Institute of Cardiology discusses posters with organizing committee member Suzanne Young.

Undergraduate student Nehal Parikh presents her first poster at the INPhys meeting.

Graduate students Zach Berwick and Mikaela McKenney interpret data in a poster.
The 29th annual meeting of the Oklahoma Society of Physiologists (OSP) was held on Friday, June 18, 2010 at Oklahoma State Univ. Center for Health Sciences in Tulsa, OK. The theme of this one day conference was Integration of Clinical and Biomedical Sciences in Medical Schools. It was organized by Alexander Rouch, President of OSP for 2009-2010.

There were three one-hour presentations given by physiologists focusing on the theme: 1) Alexander Rouch spoke on Curriculum Development for Medical Schools; 2) Warren Finn and his research assistant Cody Rice spoke on Evidence-Based Medicine; and 3) Bruce Benjamin spoke on Simulation-Based Teaching. Rouch recommended the book written by David Kern and others entitled, *Curriculum Development for Medical Education: A Six-Step Approach*. Curriculum should be linked to ongoing assessment of health care needs, e.g., treatment of chronic disease is a need that must be imminently addressed. Finn spoke about the importance of medical students learning about how to access best practices and current advances for doctors using databases through internet and Smart phones. Benjamin spoke on their experience at OSU College of Osteopathic Medicine with the use of computer simulations of mannequins with various diseases for learning diagnosis.

Other activities included posters, lunch, a business meeting and evening
fun. A number of posters were shown during two breaks, one in the morning and one in the afternoon. Lunch was provided courtesy of OSP from Noon to 1 p.m. in the atrium of OSU College of Osteopathic Medicine, followed by a business meeting. New officers for 2010-2011 are: President Suzanne Vincent, Oral Roberts Univ.; President-Elect Connie Hebert, Tulsa Community College; and Secretary-Treasurer Alexander Rouch, OSU-CHS. Rouch gave a budget report and a report from the State Chapters meeting that he attended during the April 2010 American Physiological Society conference. Brainstorming about next summer’s OSP meeting 2011 was also done. Some participants of OSP attended the Tulsa Drillers baseball game in the evening.

**Posters**

*Response of persons diagnosed with dementia to cognitive and water exercises*
Matilda, EK, Suzanne Vincent, and Mary Nole

*Corneal afferents contain synaptic vesicle proteins: Synaptophysin I and Synaptophysin II*
Ibitokun, O. and K.E. Miller

*Response of substance P and glutaminase containing neurons in rat dorsal root ganglion during inflammation*
Zhang, Z, E.M Hoffman, K.M Edwards, R. Schechter, and K.E. Miller

*Response of rat dorsal root ganglion to peripheral inflammation*
Wang, T, Z, Zhang, and K.E. Miller

Yinka Ibitokun, PhD Student, with her poster: Corneal afferents contain synaptic vesicle proteins: Synaptophysin I and Synaptophysin II.

Zijia Zhang, PhD Student, with her poster: Response of substance P and glutaminase containing neurons in rat dorsal root ganglion during inflammation.

Ting Wang, PhD Student with her poster: Response of rat dorsal root ganglion to peripheral inflammation.

Dr. Suzanne Vincent with her poster: Response of persons diagnosed with dementia to cognitive and water exercises.
Forty-six Science Teacher Fellows From Across the Nation Participate in APS Fellowship Programs

This spring, 46 teachers from across the nation are participating in the 2011 Frontiers in Physiology Professional Development Fellowship Programs sponsored by the APS (http://www.frontiersinphys.org). Seventeen teachers were selected as the 2011 Research Teacher (RT) Fellows and 29 teachers were awarded as the 2011 Online Teacher Fellows (OTFs). Frontiers in Physiology was recognized as a “Model for Excellence in Science Education” by the Center for Excellence in Education in 2010, and is sponsored by the APS, a Science Education Partnership Award from the National Center for Research Resources (NCRR), and the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) at the National Institutes of Health (NIH).

One component of the traditional Research Teacher fellowship that the APS has offered over the last two decades is a local partnership between the science teacher and an APS member, who jointly applied to the program and committed to contributing a portion of the teacher’s fellowship payments. APS members serve as hosts and mentors to the teachers by providing each teacher fellow with a physiology-based laboratory research experience for seven to eight weeks this summer. Through this opportunity, the RTs learn first-hand how the research process works, allowing them to enhance their own science teaching while with their students in the classroom.

The RTs will also be attending the “APS Science Teaching Forum,” an intensive summer workshop focused on student-centered teaching methods at the Airlie Center in Warrenton, VA. Along with an invited APS member physiologist, the 2011 K-12 Outreach Fellows, past teacher fellows who serve as teacher mentors/instructors, and APS Education Office staff, the RTs will use APS curriculum units that explore inquiry-based teaching strategies, how to integrate technology into their classroom, and equity and diversity issues in science education. As part of the fellowship in the fall, the RTs will develop and refine their own inquiry-based, student-centered lab activity for the science classroom. Finally, the RTs conclude their fellowship year by experiencing a scientific meeting at Experimental Biology 2012 in San Diego, CA.

The Online Teacher Fellow program was made possible with a supplemental grant awarded to the APS last fall as part of the existing SEPA teacher professional development program. The award allows the APS to replicate the pilot Frontiers Online Teacher Program established 2010. The online program delivered on a course management system is an adoption of the more traditional comprehensive RT program, which includes not only the online program, but a summer research experience, a summer workshop week, and travel to EB 2012 for participation and an awards ceremony.

The lessons, assignments, discussions, and activities in both fellowship programs are structured in the APS Six-Star Science framework for promoting excellence in science education. The Six-Star Science principles address student-centered learning, equity and diversity, technology in the classroom, authentic assessment on content and pedagogy, updated content, and intentional reflection. As part of the both fellowship programs, the RTs and OTFs will develop and refine their own inquiry-based, student-centered lab activity for the science classroom.

The following are the 2011 APS Online Teacher Fellows, listed alphabetically by the teacher’s last name:

- **Sandra Bickerstaff**, South Carolina State Univ., Orangeburg, SC;
- **Sweitzer M. Sarah**, and **L. Britt Wilson**, Univ. of South Carolina, Columbia, SC;
- **Laura Carlino**, Upper St. Clair High School, Upper St. Clair, PA; **Bill Yates**, Univ. of Pittsburgh, Pittsburgh, PA;
- **Elizabeth Charleston**, York Country Day School, York, PA;
- **Leonard S. Jefferson**, Penn State Univ., Hershey, PA;
- **Neel A. Del Rey**, Hartman Middle School, Houston, TX; **Rolando E. Rumbaut**, Baylor College of Medicine, Houston, TX;
- **Laura (L.B.) Fogt**, Olathe North High School, Olathe, KS; **Shrikant Anant**, Kansas Univ., Kansas City, KS;
- **Elizabeth Hunt Esco**, Olathe High School, Olathe, KS; **Norberto C. Gonzalez**, Kansas Univ., Kansas City, KS;
- **Ashley Ivins**, Mescalero Apache High School, Mescalero, NM; **Nancy Kanagy**, Univ. of New Mexico, Albuquerque, NM;
- **Julia Lawrence**, DeSoto Independent School District, Glenn Heights, TX; **Tony G. Babb**, Texas Health Presbyterian Hospital Dallas/UT Southwestern Medical Center;
- **Cora James**, Haskell High School, Haskell, OK; **Cathy Johnson**, Drayton Public School, Drayton, ND; **Nancy Keller**, Heritage High School, Vancouver, WA; **Tami Kepshire**, Portage High School, Portage, IN; **Carla McFadden**, Okanogan School District, Okanogan, WA; **Jannette Moehlman**, Dakota Middle School, Rapid City, SD; **Melanie Shaver**, West McDowell Jr. High, Maric, NC;
- **Tara Veazey**, Riverside High School, Charleston, WV; **Darrell Walker**, Elizabeth City Middle School, Elizabeth City, NC; **Pete Whipple**, Bowditch Middle School, Spokane Valley, WA; **William Wilson**, Clover High School, Lakewood, WA; **Debora Wines**, Central Catholic High School, Billings, MT; and **Daniel Zielaski**, Phelps ACE SHS, DC Public Schools, Washington, DC.

The following are the 2011 APS Research Teacher/Host Partnerships, listed alphabetically by the teacher’s last name:

- **Katie Anderson**, Dakota Middle School, Rapid City, SD; **Myra Arnone**, Redmond High School, Redmond, WA;
- **Daniel Bartsch**, Billings Senior High, Billings, MT; **Sarah Berlinger**, Littleton High School, Littleton, MA; **Rebecca Block**, Tulsa School of Arts and Sciences, Tulsa, OK; **Wanda Bryant**, Detroit Public Schools, Detroit, MI; **Regina Cowan**, Detroit Public Schools, Detroit, MI; **Greg Dierson**, Great Plains Lutheran High School, Watertown, SD; **Mary Eldredge-Sandbo**, Des Lacs-Burlington High School, Des Lacs, ND;
- **Myriaha Felker**, Cabell Midland High, Ona, WV; **Charles Galarza**, Nolan Richardson Middle School, El Paso, TX; **Ellen Gant**, Dakota Valley High School, North Sioux City, SD; **Denise Gipson**, Jefferson High School, Shenandoah Junction, WV; **Jennifer Gonzales**, Tafolla Middle School, San Antonio, TX; **Mary Haus**, Los Osos High School, Rancho Cucamonga, CA; **Kelly Hennessey**, A.C. Davis High School, Yakima, WA; and **Charles Galarza**, Nolan Richardson Middle School, El Paso, TX; **Ellen Gant**, Dakota Valley High School, North Sioux City, SD; **Denise Gipson**, Jefferson High School, Shenandoah Junction, WV; **Jennifer Gonzales**, Tafolla Middle School, San Antonio, TX; **Mary Haus**, Los Osos High School, Rancho Cucamonga, CA; **Kelly Hennessey**, A.C. Davis High School, Yakima, WA;
CALL FOR NOMINATIONS

For the Editorship of Physiology

Nominations are invited for the Editorship of Physiology to succeed W. Boron, who will complete his term as Editor on June 30, 2012. The Publications Committee plans to interview candidates in the Fall of 2011.

Applications should be received before August 15, 2011.

Nominations, accompanied by a curriculum vitae, should be sent to the Chair of the Publications Committee:

Hershel Raff, Ph.D.
American Physiological Society
9650 Rockville Pike
Bethesda, MD 20814-3991
Fast track your research
and publishing

Accelerate the pace of your research with the data acquisition systems cited in more published papers*. ADInstruments PowerLab® systems are easy to use, intuitive and powerful, allowing you to start and progress research quickly. The system's flexibility enables you to add specialist instruments and software-controlled amplifiers for your specific experiments. What's more, LabChart® software (included with every system), offers parameters tailored to individual applications and unmatched data integrity for indisputably trustworthy data.

When there's no prize for second place, ADInstruments PowerLab systems help you to publish. First.

To find out more, visit adinstruments.com/publish

* According to Google Scholar, ADInstruments systems are cited in over 50,000 published papers and other works of scholarly literature.
Research Advisor’s Checklist

Michael Sturek
Indiana Univ. School of Medicine

The relationship between the research advisor and advisee has many facets and expectations. While some of the expectations are explicit, many are implicit. We are fortunate that the APS has outstanding resources available for mentoring and being mentored, which make these expectations more transparent (e.g., http://www.the-aps.org/careers/). While I was a member of the Career Opportunities in Physiology Committee, it became apparent that a concise checklist—an abbreviated “how to” list—would also be helpful. That concept prompted this Advisor’s Checklist shown in Table 1.

Although I have created the checklist somewhat more through the eyes of the laboratory research advisor, the advisee should also find it very useful to gain an understanding of expectations that many mentors have and to facilitate their own training to become an advisor, whether in academia or the private sector.

The overall organization of the checklist is based on action items and whether these actions were completed, i.e., whether the goals were achieved. Although the process seems a binary Yes or No, cut-and-dried decision, the process is, in many cases, continuous. See the “Ongoing” status in the right column of the checklist labeled “ACHIEVED?” In many cases, however, one can and should establish a deadline for achieving the actions.

The checklist is also organized by the phase of the advisee’s training. The phase “Before the Advisee is in the Class or Laboratory, General Principles” in many ways is a philosophy of behavior and will involve some soul-searching and up-front decisions about whether this is what the advisor sees as important. In essence, the advisor should reflect on what kind of advisor/mentor one wants to be (1). These actions more specifically define the character of the advisor. Actions for the advisor then go through early (and/or short-term) projects, mid-through later-projects, the thesis, postdoctoral fellowship, and after the training. Some of the items are obvious, so I will not go into detail about each. Instead, I will highlight some critical items (in bold italics) to stay within the scope of this brief article.

Be honest and mean what you say. Although we should have learned this in kindergarten, we might have evolved and become jaded to think that there are exceptions for adults. Again, leadership principles indicate that the long-term working relationship is best developed by making these pacts and honoring commitments. Think of it as a principle of physics and the way the universe should run (3).

Recognize outstanding potential and nurture it, while appreciating everyone’s individual talents. For example, not everyone will love whole animal physiology and not everyone will love transcriptional regulation of gene expression. Perhaps one of the most difficult concepts to assimilate is to stop wanting to be liked by the advisee (1). If you are true to other aspects of mutual respect, etc., then you are better prepared to tolerate most of the possible frustration or dislike the advisee might have for you regarding your clear expectations for excellence and hard work. Our primary purpose is not to be friends or to make the project easy. Instead, our primary purpose to help the advisee to fully develop her/his talents in physiological research. Often, the harshest advice may be the best. Kinship is clearly cherished and an added bonus of the advisor-advisee relationship, but it is not the main goal.

Go into each advising experience with the clear mindset that you will learn from your advisees. You will learn patience, how to develop your own talents, and you will even learn science. We advisors probably learn more from our advisees than they learn from us.

After the big 10 general principles have been considered, you’re ready for an initial meeting with the potential advisee. One of the most penetrating questions from the potential advisor is “What would you like to do if you could have any project in the lab?” The question tests whether the advisee has really done her/his homework about your laboratory research and it typically prompts the advisee to think very actively on her/his feet. Advisees, this question may seem too direct, but
it allows you to take stock of your goals. Are you just doing a research project so that it looks good on your resume or do you truly want to learn? This initial meeting can actually be a point at which one or both parties decide that this relationship will not work, which can be due to differences in research interests and/or expectations.

Communicate clearly with advisee—possible projects, expectations. Although creative play in the laboratory is enjoyable, typically time is too short and usually a person will flounder without clear initial plans. Information on the nuts and bolts of Institutional Animal Care and Use Committee (IACUC), biosafety, other regulatory issues should be provided as soon as possible. Document, document, document. Mark those completion deadlines and achievements in the checklist. Please make this an active process.

Early (and/or Short-term) Laboratory Project
The first several items and overall aims of this category are structure and organization: establishing ground rules, expectations (dress code, hours, etc.), and setting and enforcing deadlines. In addition, unless the advisee knows exactly what s/he wants to do, assign a manageable project and complete a formal agreement. The formal agreement of performance expectations may sound too stuffy and legalistic and stifling to the advisee’s creativity, but in the early stages of a project my opinion is that there is much to be learned regarding the overall concepts and laboratory methods. The research novice must have a framework of knowledge before blindly venturing too far. Further, objective criteria for performance more strongly legitimize grading for academic credit for the research project and better enable the advisor to differentiate between levels of performance of trainees.

More active learning can be facilitated if the advisee is provided only an outline of the project and required to revise it before creating the formal agreement.

Some consider it most appropriate to discuss long-term goals only annually after the advisee has had substantial experience and a clearer picture of her/his options. However, my perspective is to ask the advisee to state a

Table 1. Research Advisor’s Checklist

<table>
<thead>
<tr>
<th>ACTION</th>
<th>DEADLINE</th>
<th>ACHIEVED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before the advisee is in the class or laboratory, general principles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Establish your laboratory</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Lead by example; be a role model</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Expect excellence</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Be honest; mean what you say</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Recognize outstanding potential and nurture it</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Appreciate everyone’s individual talents</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Show mutual respect</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Treat the advisee as you would want to be treated</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Stop wanting to be liked by the advisee</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Always praise when appropriate; praise more than criticize</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Learn from your advisees</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Be timely for initial meeting (and all)</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Advisee should describe his/her interests and experiences; advisor should listen attentively</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Ask advisee what s/he would like to do if s/he could have any project in the lab</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Communicate clearly with advisee—possible projects, expectations</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Provide IACUC, biosafety, other regulatory information</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Early (and/or short term) laboratory project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Establish ground rules, expectations—dress code, hours, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set deadlines and enforce</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete IACUC training, if needed</td>
<td>Annually</td>
<td></td>
</tr>
<tr>
<td>Complete biosafety training, if needed</td>
<td>~Weekly</td>
<td></td>
</tr>
<tr>
<td>Unless the advisee knows exactly what s/he wants to do, assign a manageable project</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Provide an outline of the project and require advisee to revise</td>
<td>Weekly</td>
<td></td>
</tr>
<tr>
<td>Complete formal agreement, if required</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Discuss long-term goals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide direct, hands-on instruction (by either advisor or senior lab member) in all aspects of project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present project design and work-in-progress in regular group laboratory meetings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide written authorship guidelines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promote personal confidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular (weekly) reserved time for one-on-one discussion of progress, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have an open door policy … during designated times</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collect enough data for abstract and/or contribution to manuscript in laboratory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduce advisee to other faculty, leaders in the field</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advisee should summarize project in writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete formal evaluation of advisee</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
vision of a long-term goal; in essence, to begin with the end in sight. This puts the planned research experience within the hopes and dreams of the advisee. It enables the advisor to ask “How can I help you achieve your long-term goals?” This is especially important for the varying needs of undergraduate, graduate, medical scientist trainees, and postdoctoral fellows. Tailor their research activities to mesh with their future, long-term goals. If their overall goals change over the course of work in the laboratory, then reflecting upon their goals at the conclusion of some period is highly instructive.

The trainee’s first project has been planned and now one jumps into it with great energy. Despite the level of training that the advisee has from previous work, it is still highly recommended that you provide direct, hands-on instruction (by either advisor or senior lab member) in all aspects of project. Start the advisee with a solid basis and avoid procedural drift that can occur when laboratory methods are passed along to numerous members without quality control checking.

Although sometimes threatening to new trainees, they should present project design and work-in-progress in regular group laboratory meetings as soon and as frequently as possible. This is best to learn the language of science communication, but it also provides excellent motivation for the advisee to make continuous progress. Additional opportunities for students to practice their presentation skills should be at local scientific meetings at their institutions or at the state level (e.g., APS Chapters) and then progress to larger regional and national conferences (e.g., Experimental Biology). Ideally, advisees should obtain experience with poster and oral presentation formats.

Very soon after her/his first several presentations, the advisee should have a feel for her/his contribution to a project and should be thinking of scholarly works, thus, it is essential to provide written authorship guidelines relatively early in training. No authorship guidelines (criteria) are absolute and it is best to deal with authorship up front at the start of a project. The APS also has excellent resources and examples of authorship guidelines (http://www.the-aps.org/publications/author-info/) on the website.

The increasing time demands for the principal investigator/lab director make it all the more important for regular (at least weekly) reserved time for one-on-one discussion of progress, etc. Related to that, many advisors boast an open door policy and I wholeheartedly agree … during designated hours. The time for advisee and advisor are more optimally used during these time blocks. Otherwise, there is frustration from inability to schedule and, worse yet, time fragmentation, which divides one’s creative

Table 1. Research Advisor’s Checklist (continued)

<table>
<thead>
<tr>
<th>ACTION</th>
<th>DEADLINE</th>
<th>ACHIEVED?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mid through later laboratory projects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular (weekly) reserved time for one-on-one discussion of progress, etc.</td>
<td>Weekly</td>
<td></td>
</tr>
<tr>
<td>Have an open door policy … during designated times</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Recognize that a team accomplishes more than any individual</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Always maintain their individual contributions, projects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To avoid “procedural drift” require advisee to contribute to laboratory methods notebook (lab manual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Audit” data to help safeguard data integrity (to avoid scientific misconduct)</td>
<td>Monthly</td>
<td></td>
</tr>
<tr>
<td>Conduct annual review; may include graduate committee</td>
<td>Annually</td>
<td></td>
</tr>
<tr>
<td>Promote more independence</td>
<td>~Weekly</td>
<td></td>
</tr>
<tr>
<td>Although advisee may be more independent, visit the lab even just briefly to observe, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formally assign advisee as mentor of junior lab member</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Publish manuscript(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gain experience in business for the life sciences, i.e. technology transfer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctoral fellowship application, if appropriate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Thesis**

All of the above, plus emphasis on …

Regular (weekly) reserved time for one-on-one discussion of progress, etc.

Have an open door policy … during designated times

Focus on writing, excuse from many common laboratory duties

Student should complete all graduate college deadlines, etc. in a timely manner

**Postdoctoral fellowship**

All of the above, plus …

Set goals for independent career (Individual Development Plan) and refine continually (e.g. from Philip Clifford “Clifford.ppt” on APS website)

Determine whether teaching experience is needed

More grant writing experience

More formalized written annual review (e.g. from Philip Clifford “SampleAnnualReviewPostdoc.pdf” on APS website)

**After the research project, degree (BS, MS, PhD, MD, DVM., etc.), or postdoctoral fellowship training**

Maintain contact and support

**Table 1. Research Advisor’s Checklist (continued)**

**ACTION**

- Regular (weekly) reserved time for one-on-one discussion of progress, etc.
- Have an open door policy … during designated times
- Recognize that a team accomplishes more than any individual
- Always maintain their individual contributions, projects
- To avoid “procedural drift” require advisee to contribute to laboratory methods notebook (lab manual)
- “Audit” data to help safeguard data integrity (to avoid scientific misconduct)
- Conduct annual review; may include graduate committee
- Promote more independence
- Although advisee may be more independent, visit the lab even just briefly to observe, etc.
- Formally assign advisee as mentor of junior lab member
- Publish manuscript(s)
- Gain experience in business for the life sciences, i.e. technology transfer
- Doctoral fellowship application, if appropriate

**DEADLINE**

- Weekly
- Monthly
- Annually
- ~Weekly

**ACHIEVED?**

- Ongoing
energy and thought processes. This is further exacerbated by unlimited email and text message access.

A meaningful laboratory experience, e.g., 6-12-week project, should enable the advisee to collect enough data for an abstract and/or contribution to a manuscript in the laboratory.

At appropriate times one should introduce the advisee to other faculty and leaders in the field. Early introductions are important to give impressions to students.

Finally, the advisee should summarize the project in writing to enable assessment of their understanding and ability to organize data.

Formal evaluation of the advisee should include attention to criteria, such as the level of commitment (time, reliability, conscientiousness, punctuality), self-reliance, independence, intellectual curiosity, communication skills, mastery of concepts of the research (scientific comprehension, intellectual involvement), and laboratory skills (specific methods, organization of data, recording keeping, accuracy).

Mid-Through Later-Laboratory Projects

The early (short-term) project should provide an excellent foundation for continuing in these more advanced stages in laboratory research. Again, regular meetings are essential. It is hoped that the advisee and advisor appreciate this predictable, regular time for discussion. The current nature of highly interdisciplinary research is likely to be maintained and further expanded, thus, making it essential to communicate that a team accomplishes more than any individual, while allowing the advisee to always maintain their individual contributions, and projects.

The sense of ownership of their project is highly motivating in high quality advisees. These actions are facilitated by requiring the advisee to contribute to laboratory methods notebook (lab manual), which also helps avoid the “procedural drift” that occurs, especially in large laboratories.

The importance of ethical conduct of research has been highlighted recently (2), hence a periodic “audit” of data could help safeguard data integrity (to avoid scientific misconduct). Progress in the research experience will be facilitated by promoting more independence in a stepwise manner at every opportunity.

As we should know from being an advisor and teacher (whether teaching coworkers or students), we learn the most when we must teach. Accordingly, an important step is to formally assign the advisee as a mentor of a junior lab member. In addition to the benefit of the advisee learning her/his project even better, their performance and formal teaching/mentoring can be documented and put into their permanent record, which is very useful for future recommendations regarding teaching experience. This does not substitute for formal classroom teaching, but one-on-one supervision is a critical part of their scholarly mission.

As the student becomes more senior in the program the advisor should introduce the advisee to other faculty and leaders in the field. Unlike the early stages of training, the introductions should involve more discussion of the student’s work or their career plans, so that the students can interact further with these faculty and leaders.

Publishing manuscripts must be a priority at this stage. The advisee should not only write the manuscripts but should also be a full part of the submission process, which includes any online procedures, recommendation of reviewers, revision, etc.

The changing landscape of biomedical research now requires, in my opinion, that students gain experience in business for the life sciences, i.e., technology transfer. This includes some knowledge of market analysis and stages of drug and device development.

A successful doctoral fellowship application for support of their studies has been shown to be a strong predictor of future academic success; thus, should be completed at the appropriate stage of their training.

Thesis

If the advisee has a thesis requirement for their program, the above actions should proceed relatively unabated, in fact, accelerated. The exception would be allowing the advisee in later stages to focus on writing and be excused from many common laboratory duties.

Postdoctoral Fellowship

Many of the previous mentoring actions are also needed for the postdoctoral fellowship phase. The absolutely crucial step for development of an independent scientist is to set goals for an independent career with an Individual Development Plan and refine it continually. The APS website resource materials (http://www.the-aps.org/careers/careers1/EBSymposia/EB2004symposium.htm) are excellent for this.

Depending on the goals of the advisee, one can determine whether teaching experience is needed. The amount of teaching should not be excessively burdensome.

More grant writing experience should prime the candidate for an independent career. This is a critical step, since the postdoctoral fellow may be supported by funds that require more focused work on the mentor’s research grant and would not best facilitate independence from the mentor’s work. Ideally, postdoctoral fellowship grants would enable the fellow to work on grants sufficiently different than the advisor’s work to make steps toward independence.

A more formalized written annual review can set the stage for transition to an independent position (see sample document at http://www.the-aps.org/careers/careers1/EBSymposia/EB2004symposium.htm).

After the Research Project, Degree (BS, MS, PhD, MD, DVM, etc.), or Postdoctoral Fellowship Training

After the advising/training period,
another satisfying stage for the advisor is to maintain contact and support. The mutual pride of advisor and advisee show the long-term outcome of conscientious advisory programs and communication.

Overview
This relatively long list only scratches the surface of the mentor-mentee relationship, which can be explored in many readings (e.g., see Ref. 1). The single best piece of advice is to personalize this advisor's checklist with some revisions and make it a working, living document. Finally, one item that is blatantly absent from the checklist is “Care for your advisees”… but you already know that if you've read this far.

Acknowledgements
I thank the members of the APS Career Opportunities in Physiology Committee for commenting on my discussion of the Advisor’s Checklist. In particular, I thank student member Zachary Sellers, for his review and written comments on the checklist.

Please see the APS website to download the Word version of the Research Advisor’s Checklist, so that you can revise to suit your specific needs and make this a working, living document and plan. ✯

To comment on this article, go to: http://www.the-aps.org/careers/careers1/mentor/advisorschecklist.htm.

References
2. Frank M. We must do better! The Physiologist 54: 43-45, 2011.

Correspondence
Michael Sturek
Professor and Chair
Dept. of Cellular & Integrative Phys.
Indiana Univ. School of Medicine
635 Barnhill Drive, MS 385
Indianapolis, IN 46202-5120
Phone 317-274-7772
Fax: 317-274-3318
Email: msturek@iupui.edu.

Calls for Papers

<table>
<thead>
<tr>
<th>Current Calls for Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physiological Genomics</strong></td>
</tr>
<tr>
<td>Functional Analysis of Sequence Variation</td>
</tr>
<tr>
<td>Technology Development for Physiological Genomics</td>
</tr>
<tr>
<td>Computational Modeling of Physiological Systems</td>
</tr>
<tr>
<td><strong>Journal of Applied Physiology</strong></td>
</tr>
<tr>
<td>Physiology and Pathophysiology of Physical Inactivity</td>
</tr>
<tr>
<td>(Submission deadline: August 1, 2011)</td>
</tr>
<tr>
<td><strong>Advances in Physiology Education</strong></td>
</tr>
<tr>
<td>Teaching and Learning of Professional Ethics</td>
</tr>
<tr>
<td>Using Classic Papers to Teach Physiology</td>
</tr>
<tr>
<td><strong>American Journal of Physiology—Gastrointestinal and Liver Physiology</strong></td>
</tr>
<tr>
<td>Physiology and GI Cancer</td>
</tr>
<tr>
<td>Intestinal Stem Cells in GI Physiology and Disease</td>
</tr>
<tr>
<td>Innovative and Emerging Technologies in GI Physiology and Disease</td>
</tr>
</tbody>
</table>

**American Journal of Physiology—Regulatory, Integrative and Comparative Physiology**

Integrative and Translational Physiology: Inflammation and Immunity in Organ System Physiology  
(Submission deadline: April 30, 2012)

Integrative and Translational Physiology: Integrative Aspects of Energy Homeostasis and Metabolic Diseases  
(Submission deadline: April 30, 2012)

**American Journal of Physiology—Renal Physiology**

Biology of the Central Cilium and Cystic Diseases of the Kidney  
(Submission deadline: July 1, 2011)

Programming Normal Renal Development and Modeling Disease Pathogenesis  
(Submission deadline: July 1, 2011)

For a complete list of current Calls for Papers, visit The Physiologist website and click on the link for Calls for Papers.
2011 American Physiological Society Conferences

2011 APS Conference:
7th International Symposium on Aldosterone and the ENaC/Degenerin Family of Ion Channels: Molecular Mechanisms and Pathophysiology

DATE: September 18-22, 2011
PLACE: Asilomar Conference Grounds
        Pacific Grove, California (USA)

Abstract: June 1, 2011
Registration: August 12, 2011
Housing: August 12, 2011

For more information or to register, visit:
www.the-aps.org/enac

Preliminary Program
- Structure and Function of ENaC and Related Transporters
- Structure and Function of Mineralocorticoid and Glucocorticoid Receptors
- Regulation of ENaC Biogenesis, Trafficking and Gating
- Aldosterone Synthesis and Regulation of Adrenal Cortex Function
- Non-Epithelial Actions of Aldosterone and Crosstalk with Other Systems
- ENaC Pathophysiology
- Aldosterone Pathophysiology

The American Physiological Society, Meetings Department
Phone: 301.634.7967 • Fax: 301.634.7264 • E-mail: meetings@the-aps.org

---

2011 APS Conference:
Physiology of Cardiovascular Disease: Gender Disparities

DATE: October 12-14, 2011
PLACE: University of Mississippi Medical Center
        Jackson, Mississippi (USA)

Abstract: June 20, 2011
Advance Registration: September 12, 2011
Housing: September 15, 2011

For more information or to register, visit:
www.the-aps.org/gender2011

Preliminary Program
- Aging and Cardiovascular Disease
- Gender Disparities in Renal Disease
- Diabetes, Obesity and Cardiovascular Disease
- Neuro Mechanisms and Depression in Cardiovascular Disease
- Gender Disparities in Cardiology
- Cardiovascular Disease and Inflammation
- Gender Differences in Vascular Function
- Cardiovascular Disease and Fertility
APS Leadership Visits Capitol Hill

On Tuesday, March 15, 2011 APS President Peter Wagner, Past President Gary Sieck, President-elect Joey Granger and Science Policy Chair John Chatham met with several Congressional offices to discuss funding for biomedical research, the humane use of animals in research and publications access. The meetings took place at a critical point in the appropriations process, as Members of Congress worked to avoid a government shutdown and complete spending bills for the remainder of FY 2011 (see Congress finalizes FY 2011 budgets). In a challenging fiscal climate that is focused on cutting federal spending, members of the APS leadership were assured that investment in research is a priority for many Members of Congress, but that no federal programs will be exempt from consideration as Congress seeks to achieve long-term deficit reduction.

Drs. Wagner, Sieck, Granger and Chatham thanked Members of Congress for their support of federally funded research and emphasized the need for predictable, sustainable budget increases to allow scientists to capitalize on decades of federal investment in research. APS leadership also stressed the important role that federal funding plays in training the next generation of researchers and expressed concern that dwindling funding and dismal success rates may discourage young scientists from pursuing academic careers.

In the Senate Drs. Wagner, Sieck, Granger and Chatham met with staff in the offices of Senators Richard Shelby (R-AL), Thad Cochran (R-MS) and Al Franken (D-MN). In the House of Representatives, they met with Representative Brian Bilbray (R-CA) and staff for Representative Susan Davis (D-CA).

Congress Finalizes FY 2011 Budgets

On April 14, 2011, Congress passed a bill to fund federal programs and agencies for the remainder of the current fiscal year, including research at the National Institutes of Health (NIH), the National Science Foundation (NSF), VA Medical and Prosthetic Research and NASA. The legislation extended funding levels for FY 2010 through September 30, 2011, with a few modifications.

- The NIH budget was reduced by $260 million compared to FY 2010. $210 million of the cuts will be spread across all the institutes and centers in proportion to their total budgets. $50 million was cut from the buildings and facilities budget.
- The NSF budget was reduced by a total of $53 million, with $43 million cut from Research and Related Accounts and $10 million from Education and Human Resources.
- VA Medical and Prosthetic research was level funded.
- NASA sustained a cut of $175 million, with $38 million cut from education, $83 from cross-agency support and $54 million from construction and environmental compliance.
Goldberg Elected to NAS

The National Academy of Sciences announced the election of 72 new members and 18 foreign associates from 15 countries in recognition of their distinguished and continuing achievements in original research. Included among those elected was APS Member Michael E. Goldberg, David Mahoney Professor of Brain and Behavior, and director, Mahoney Center for Mind and Brain, Columbia Univ. College of Physicians, New York City. The total number of active NAS members is 2,113 and the total number of foreign associates is 418.

Silverthorn Named Outstanding Alumnae

APS Member Dee Silverthorn was chosen as the Outstanding Alumnae of 2011 for the Newcomb Alumnae Association (NAA) of Tulane Univ. She was honored at Under the Oaks, a ceremony honoring new graduates, the 50-year Newcomb Reunion class, and other NAA awardees, on May 11.

Timothy G. Buchman is currently the Director, Critical Care Center, Emory Univ. Hospital, Atlanta, GA. Prior to this position, Buchman was Director of Burn, Trauma and Critical Care, Washington Univ. School of Medicine, St. Louis, MO.

Olivier J. Devuyst is presently a Professor at the Univ. of Zurich Institute of Physiology, Mechanisms Inherited Kidney Disorders Group, Zurich, Switzerland. Prior to this position, Devuyst was at the Univ. of Louvain Medical School, Division of Nephrology, Brussels, Belgium.

Carie S. Facemire is currently a Research Instructor at the Univ. of North Carolina at Chapel Hill in the Department of Cell and Molecular Physiology. Previously, Facemire was at the Duke Univ. Medical Center, Department of Medicine, Durham, NC.

David G. Harrison has been appointed the Director of Clinical Pharmacology at Vanderbilt University, Nashville, TN. Harrison also was named the Betty and Jack Bailey Professor of Medicine and Pharmacology. He previously served as the Director of Cardiology at Emory University.

Steven B. Heymsfield is presently the Executive Director at Pennington Biomedical Research Center, Department Clinical Research and Metabolism, Baton Rouge, LA. Prior to this position, Heymsfield was at Merck & Co., Rahway, NJ.

Ganesan Ramesh has taken a position at Georgia Health Sciences Univ., Medicine and Vascular Biology Center, Augusta, GA. Prior to this position, Ramesh was a Research Associate at the Pennsylvania State Univ. College of Medicine, Hershey, PA.

Chantal A. Rivera, is now a Scientific Review Officer, at the National Institutes of Health, Bethesda, MD. Prior to this position, Rivera was Associate Professor of Physiology at Louisiana State Univ. Health Science Center, Shreveport, LA.

H. Richard Winn is now Professor in the Department of Neurosurgery at North Shore Lenox Hill Hospital, New York, NY. Prior to this position, Winn was a Professor in the Department of Neurosurgery at Mt. Sinai School of Medicine, New York, NY.

MentorNet

The American Physiological Society (APS) has partnered with MentorNet, the award-winning non-profit online mentoring network for women and those underrepresented in science, technology, engineering, and mathematics (STEM).

MentorNet’s One-on-One Mentoring Program pairs APS mentors with students from over 100 campuses. 95% of MentorNet students persist to graduation and 91% remain in the STEM fields three years after they complete the program.

Communicate via email in less than 15 minutes per week
Network with other professionals
Change a student’s life

Become a Mentor Today:
Create your mentor profile in less than 5 minutes:
www.MentorNet.net/mentor

Partner with the nation’s largest credit union serving the biomedical industry. Save time and money and enjoy a wide range of benefits, including:

- Business, consumer and mortgage loans of all kinds
- Checking with FREE worldwide ATM rebates and debit rewards
- FREE mortgage, credit and retirement plan check-ups
- FREE online and mobile banking
- FinanceWorks—a FREE personal money management system
- FREE certified financial counseling
- International remittance services for less

NIH Federal Credit Union

All employees and members of FASEB and its constituent societies in Maryland, Washington, D.C., Virginia and West Virginia are eligible for membership. For more information, visit nihfcu.org or stop by FASEB’s Human Resource Department.

Federally insured by NCUA.
Letters to Margaret Anderson

Heinrich Taegtmeyer writes: "The fact that I was born on Valentine’s Day predestined me to become a cardiologist. The fact that I grew up in post-war Germany gave me the experience that life can only get better, year after year. I graduated from medical school at the Univ. of Freiburg in 1968. With the help of Ed Sonnenblick, I came to Boston in 1971 intending to complete my training in medicine before joining his research lab at the Peter Bent Brigham Hospital. Things turned out slightly different when I had my first R01, and in 1978 my family and I moved back to Europe so I could study metabolism in Oxford. I was already over 40 when I joined the faculty at The University of Texas Medical School at Houston in 1982, and when I felt confident to call myself a physician-scientist. This has remained my preferred job description to this day.

"Who were my teachers? It was one of my high school teachers (Herr Kotula, I will never forget him) who excited me about biology. Later on, my love for cardiovascular physiology and metabolism was kindled as a medical student by Albrecht Fleckenstein (in Freiburg), as a cardiology fellow by Michael Lesch (in Boston), and as a graduate student by Hans Krebs (in Oxford). To my many teachers I shall always be grateful for bringing out what I inherited from my father and paternal grandfather: The love for nature.

"My 70th birthday turned out to be a perfect day. It was a Monday, and all patients showed up for their appointments in my clinic. When I returned to the lab, I was greeted by the news that patients showed up for their appointments on time. The fact that I grew up in post-war Germany gave me the experience that life can only get better, year after year. I graduated from medical school at the Univ. of Freiburg in 1968. With the help of Ed Sonnenblick, I came to Boston in 1971 intending to complete my training in medicine before joining his research lab at the Peter Bent Brigham Hospital. Things turned out slightly different when I had my first R01, and in 1978 my family and I moved back to Europe so I could study metabolism in Oxford. I was already over 40 when I joined the faculty at The University of Texas Medical School at Houston in 1982, and when I felt confident to call myself a physician-scientist. This has remained my preferred job description to this day.

"Who were my teachers? It was one of my high school teachers (Herr Kotula, I will never forget him) who excited me about biology. Later on, my love for cardiovascular physiology and metabolism was kindled as a medical student by Albrecht Fleckenstein (in Freiburg), as a cardiology fellow by Michael Lesch (in Boston), and as a graduate student by Hans Krebs (in Oxford). To my many teachers I shall always be grateful for bringing out what I inherited from my father and paternal grandfather: The love for nature.

"My 70th birthday turned out to be a perfect day. It was a Monday, and all patients showed up for their appointments in my clinic. When I returned to the lab, I was greeted by the news that the competing renewal application for our R01 (entitled “Self-renewal of the Cardiomyocyte”) had received a very competitive score. So I am happy to be in the lab for another five years, to have students and to pay back what has been given to me by my teachers. Perhaps the greatest pleasure for my wife and me is to know that our three children chose either medicine or social work for their careers. Two of them even earned MD/PhD degrees and are now “bleeding heart” academics. In life as in nature, all is in flux. Heraclitus knew this already 2,500 years ago."

John R. Claybaugh writes: "I am finally responding to some correspondence I received about eight months ago. In that letter you [.....]asked

about our scientific activities.

"I officially retired in May of 2007, and was asked by my institution to stay on as the IACUC chair, which I had done for the previous 16 years. This was primarily due to fact that we had an AAALAC-International inspection coming up in the following spring. So, I was hired on as consultant and have been able to keep a small office and work one day a week for pay. This allows me all of the library access I need to continue some writing. Also, I provide statistical and experimental consultation to the residents and fellows in training here at Tripler Army Medical Center.

"I continued to speak at a couple of symposia in 2008, and also I will attend the Experimental Biology meetings this spring to speak at the Leonard Share Memorial Symposium. Also, I have done some manuscript reviewing for AJP Reg and Aviat Space and Environ Med., but for the most part I turn those opportunities down because I have always put too much time in to them.

"I recently completed a chapter for the second edition of the American College of Sports Medicine textbook in Advanced Exercise Physiology (in the publishing editor’s hands at this point), and have been working on other manuscripts I plan for peer review.

"Right now I feel a nice balance between work and play, and fortunately I have two children that work for different airlines, so my wife and I can leave Hawaii as much as we want and visit the grandchildren in Atlanta and Houston, and get away from the ones that live in Hawaii. Life is good!"

Letter to Franklyn Knox

Eric Stone writes: "As I approach the end of my scientific career, I have taken to dividing my time between research and rationalism/politics. With regard to the first, partly because of my age and partly the paradigm shift to genomic studies, research grants have become virtually impossible for me to obtain. My area is the neuroscience and neuropsychopharmacology of depressive illness and I have been supported by grants largely from the NIMH for the past 40 years. However, but the six grant applications, which were judged to be excellent and highly innovative by my colleagues, weren’t even scored by the study sections! Some of the reasons given were astonishing and I have chosen not to waste any more time and effort for these. However, I still have a small amount of remaining funds which I’m using for the development of new rapidly-acting antidepressant drugs. I find the lack of deadline pressures and fear of grant loss to be most welcome and the shift from basic to more translational studies actually to enhance my productivity and insight. I currently have very little technician help, but don’t mind this since the work in the lab is a good balance to writing and reading. I also have become involved in collaborations with some of my younger, more molecularly-oriented, colleagues in their studies of depression. My reading of the relevant literature for the past 40 years has given me a perspective and memory database that my younger colleagues simply do not have yet. This allows me to contribute meaningfully and significantly to their projects, which I find very rewarding.

"With regard to my efforts on behalf of rationalism and politics, this is a response to the deeply troubling rise of science-denial in our country, spearheaded by both the religious-right and animal rights movements and their wealthy right-wing and some left-wing backers. Biological science has now become so highly politicized that the very health of the enterprise in our country is now threatened. I think we scientists now have to devote a significant part of our time to fighting back with our most effective weapon, our rationality. Consequently, I have formed my own rationalist group in my home town and take part in the annual conventions, blogs and chatrooms of rationalist, freethought and skeptic movements. This occupies about 50% of my time and involves arguments with irrational who seem to have very limited knowledge of either scientific or historical fact. I'm happy to say that the presence of rationalist groups in universities and even high schools is growing steadily. I have found associating with other rationalists, from all walks of life, not just science, to be very heart-
Letter to Bill Dantzler
Jack McBroom writes: “I received my PhD from the Univ. of Oklahoma Medical Center under the supervision of Kurt Weiss. I began my medical school career with a nine-year stint at the Univ. of South Dakota, followed by 14 years at Kuwait Univ. Faculty of Medicine.

“Early in my time in Kuwait, I met Ann Harrison, who joined the Department of Community Medicine and we were married in 1981. Our tenure in Kuwait was truncated by the 1990 invasion and ensuing ‘first Gulf war.’ We then spent five years at the United Arab Emirates Univ. Faculty of Medicine, Al Ain, Abu Dhabi, UAE. That was followed by an additional five years at St. Georges Univ. School of Medicine on the Island of Grenada, West Indies. We both retired from St. Georges Univ. School of Medicine at the end of 2000.

“We retired to the Shenandoah Valley of Virginia to a property we had discovered and acquired during my sabbatical year (1986-87) in Fran Haddy’s Department at the Uniformed Services Univ. of the Health Sciences and Ann’s sabbatical at NIH in Bethesda, MD. I did a brief stint as visiting professor at St. Georges in 2001, after which we retired from medical teaching/research in earnest. We maintained a welcome period of travel, developed something of an avocation of collecting, researching and repairing antique, primarily English, clocks. This rather Utopian period recently has been superseded somewhat by our latest venture.

“During the past year (2010), Ann established an infant/toddler pantry which provides formula/food, diapers, donated clothing and other essentials to children 0 to 36 months of age. (http://helpingshenandoahcountryinfantsinneed.blogspot.com/). I soon became involved in that pursuit with her, along with a number of other volunteers, and much of our time is now spent in that sphere.

“You asked for any words of wisdom for younger colleagues, so I will offer the following: Being a physiologist has been a wonderful career. It is rewarding, satisfying, challenging and most of all very enjoyable. Even with the pressure to publish, etc., I would counsel perpetually inhabiting neither a lab nor a classroom. The global world has so many thrilling things to offer and, with those things ever more accessible, I encourage going where your soul takes you and being both a physiologist (or whatever) and a happy person.”

Positions Available

Postdoctoral Positions

NIH-supported postdoctoral position available at the Univ. of California, Berkeley: The Forte lab studies the involvement of membrane-cytoskeleton interactions in membrane trafficking and establishing epithelial polarity. The laboratory uses gastric, renal and intestinal cell models to study regulated recruitment of transporters (proton pumps) to the cell surface. Studies in primary cell culture evaluate the role of ERM proteins as membrane/cytoskeleton linkers and the establishing and regulating the plasticity of surface projections. Recent studies are also directed toward isolating gastric epithelial stem cells from neonatal animals and establishing lineages to adult secretory cells. For further information and literature citations see http://mcb.berkeley.edu/faculty/CDB/fotrej.html. Successful candidates will have a PhD or equivalent, and experience in cell biology, biochemistry and/or membrane biophysics. A competitive salary commensurate with qualifications will be offered. Send CV, reprints, statement of career goals, and contact information for three references to: Dr. John Forte, Dept. of Molecular & Cell Biology, Univ. of California, 245 LSA, MC#3200, Berkeley, CA 94720, Email: jforte@berkeley.edu.

Postdoctoral Research Fellow: Position is available immediately in the Department of Pharmacology, College of Medicine, at the Univ. of Illinois at Chicago (UIC) to investigate the role of microtubule-binding proteins in regulating permeability of lung endothelium. Candidates must have PhD or MD/PhD degree with excellent skills in Cell and Molecular Biology and Biochemistry (as demonstrated by research publications). Special considerations will be given to individuals who will complement our existing strengths in the study of lung physiology. Qualified applicants should submit: a letter describing research interests, a current curriculum vitae and the names, phone numbers and email addresses of three references. Application must be submitted via Email to Dr. Yulia Komarova, ykomarova@uic.edu. UIC is an [AA/EOE].
encouraged to submit their Curriculum Vitae and three names or letters of references to the Email (hcsalgado@fmrp.usp.br) of Dr. Helio C. Salgado, MD, PhD, Department of Physiology, School of Medicine of Ribeirão Preto, Av. Bandeirantes 3900, 14049-800, Ribeirão Preto, SP, Brazil.

Postdoctoral (Military) Environmental Physiologist: The Thermal & Mountain Medicine Division, US Army Research Institute of Environmental Medicine invites applicants for a postdoctoral Environmental (cold stress, heat stress and high-altitude) Physiologist position. This position requires United States Citizenship and commissioning as a Medical Service Corps officer. Benefits include salary ($79-84K including base pay and allowances) and free family health benefits. Applicants should have a strong background in integrative or exercise physiology. Molecular biology skills are desired but not required. The successful candidate should have a demonstrated aptitude for grant writing and publication. Women and minorities are strongly encouraged to apply. Send cover letter and curriculum vitae to Dr. Michael N. Sawka, Chief, Thermal & Mountain Medicine Division, US Army Research Institute of Environmental Medicine, Kansas Street, Natick, MA 01760-5007. (Tel.: 508-233-5665, Email Michael.Sawka@us.army.mil). Address inquiries to CPT David DeGroot, Research Physiologist (Tel.: 508-233-6229, Email david.degroot@us.army.mil).

Postdoctoral Position: A postdoctoral position is available at the Johns Hopkins University School of Medicine for a motivated individual interested in renal physiology and/or sensory systems (candidate must have a PhD and/or MD). Research in the lab focuses on elucidating the role of sensory signaling pathways in regulating renal and cardiovascular function, and employs a variety of in vitro and in vivo techniques. To apply, please send (preferably in pdf format) a cover letter which includes a description of research background/interests, curriculum vitae, and the Email addresses and phone numbers for three referees to Jen Pluznick at jpluznick@jhmi.edu, with the subject heading, "Postdoctoral Position."

Assistant or Associate Professor: The Univ. of Nebraska Medical Center (UNMC), Department of Cellular and Integrative Physiology, is seeking applications to fill an Assistant or Associate Professor position. The successful candidate will be expected to develop a solid, extramurally funded research program and contribute to teaching medical and graduate students. He/she will be expected to employ modern genetic, cellular, molecular, electrophysiological and/or integrative approaches to address questions related to physiology or pathophysiology. We are interested in individuals who apply new and innovative state-of-the-art molecular biology and/or imaging techniques to address and complement the integrative approaches already ongoing in this department. Outstanding candidates in physiology will be considered, with special consideration given to investigators who will complement existing strengths of the department, which include Cardiovascular and Renal Physiology. Candidates should have a PhD, MD, or appropriate doctoral degree and relevant postdoctoral experience. Highly competitive salary and startup packages, including new state-of-the-art laboratory space, are available. The Department has a long history of national prominence in the areas of neural control of circulation, microvascular regulation, renal physiology and integrative physiology, and is located in the new Durham Research Center which houses 116 research laboratories. An adjacent second tower with 100 research laboratories further enables multi-departmental and multi-disciplinary research interactions. Omaha, the nation’s 42nd largest city, offers an outstanding school system, family-friendly attractions, low cost of living and numerous recreational activities. Please send CV, description of research interests and names of three references to: Kaushik P. Patel, PhD, Chair, Search Committee, Department of Cellular and Integrative Physiology, Univ. of Nebraska Medical Center, 985850 Nebraska Medical Center, Omaha, NE 68198-5850. Applications will be processed and considered upon receipt, and will be accepted until August 1, 2011. Electronic applications (in PDF format) are preferred and should be submitted to physiology@unmc.edu. The review of applications will continue until the position is filled. UNMC is an equal opportunity employer. Individuals from diverse backgrounds are encouraged to apply.

Director of Cardiovascular Research Services Core Facility: An expert is sought in the area of Cardiovascular Research to direct the Center for Cardiovascular Research Services Core Facility, Research Resources Center (RRC), at the Univ. of Illinois-Chicago (UIC). The successful applicant will manage, oversee and perform core research services in physiological monitoring and production of experimental animal models of heart disease for the UIC Center for Cardiovascular Research. The applicant should also possess expertise in echocardiography and production of surgical animal models of disease, including pressure overload hypertrophy and post-MI remodeling, particularly in rodents. The core director will be expected to maintain a high level of technological proficiency in the techniques offered by the laboratory, while continuing to expand their skill set to incorporate the latest technological advances. The role of the director encompasses those of the bench scientist in addition to responsibilities for personnel and budget management, day-to-day technical operations of the lab, assisting UIC faculty in obtaining competitive grants, and developing and maintaining a satisfied customer base. The director is also expected to participate in research protocol design for institutional approval. We are seeking an experienced scientist (with PhD or MD) with an outstanding track record in animal models of cardiovascular disease. Academic rank and salary will be commensurate with qualifications and experience. More detailed information about the Research Resources Center may be found at: http://www.rrc.uic.edu/ Applications should submit: cover letter highlighting key qualifications; current curriculum vitae with complete bibliography; names and addresses of four references; a one-page summary of the applicant's philosophy of core facility operation. For fullest consideration, applications should be received by April 15, 2011, but the advertisement will remain open until the position is filled. As of April 15, 2011 applications must be submitted through the hire touch system at https://jobs.uic.edu/default.cfm?page=job &jobID=7843. No emails please. Materials should be addressed to Dr. William Hendrickson c/o Brenda Paige, HR Director, RRC.
**Nerve and Muscle**  
4th Edition  
Richard D. Keynes, David J. Aidley, Christopher L.H. Huang

One of the attributes of the 2011 edition of this textbook is its historic perspective, which is written in a succinct, readable style. At the same time, this perspective is at the heart of its limitations, because the information covered does not parallel the advancement in knowledge during the past decade; barely 10% of the references cited were written since 2001. The book is very ambitious in its effort to cover membrane phenomena as well as the characteristics of skeletal, cardiac and smooth muscles.

The “nerve” portion of the book provides a condensed description of the basics of membrane excitability and synaptic transmission. It provides nicely the historical perspective of how our knowledge has evolved, starting with the landmark work of Hodgkin and Huxley. The book does not, however, cover some key developments. The description of ion channel structure remains at the protein sequence level, such as transmembrane segments predicted from hydropathy plots of protein sequences, despite great advances made through the use of techniques such as X-ray crystallography and cryo-electron microscopy. It would have been helpful to present modern images of ion channel structures, such as those of voltage-gated K+ channels (MacKinnon et al) or nicotinic acetylcholine receptors (Unwin et al). In Chapter 7 the author mistakenly refers to the four, rather than five subunits of the acetylcholine receptor. In the discussion of ion channel gating, which involves at least two processes, activation (opening) and inactivation (closing), the mechanisms underlying inactivation are not presented in appreciable detail. Classical work by Armstrong and colleagues showed that parts of the channel protein serve as an inactivation gate, as originally hypothesized by Hodgkin and Huxley. Application of proteases to the intracellular face of Na+ channels can abolish the inactivation process, hence the ball-and chain model. Advances made by the work of Aldrich and colleagues as well as structural work by MacKinnon demonstrating the location of the inactivation gate within the channel protein have been ignored.

With respect to the presentation of synaptic transmission in the nervous system, interesting discoveries related to activity-dependent changes in synaptic strength, such as long term potentiation or depression are given little attention. These phenomena, which reflect the dynamic nature of neurotransmission, are fundamental and help to understand the computational power of the brain.

Perhaps the weakest parts of the book are on muscle. This is where time has virtually stood still, based on the omission of recent advances in our understanding of the structure of the sarcomere and the functional role of accessory proteins such as titin, nebulin, myomesin, C-protein and others. There is no mention of the crossbridge cycle, which, at the very least, would have provided context for the discussion of *in vitro* motility assays, although this was presented in earlier editions. Discussion of activation of contraction of skeletal muscle also emphasizes work done a decade or more ago. Painfully little information is provided on the operation and regulation of ryanodine receptors, despite great advances in this area and importance in disease. In the chapter on contractile function in skeletal muscle, one is struck by the emphasis on very early literature. For example, in the text and in the form of (excessively large) images, there is a focus on antiquated techniques, such as the use of smoke-drum kymographs for recording muscle contraction, and inclusion of a break-away image of a photocell used to detect the movement of a lever, assuming that these will be instructive. Important principles are presented, but their treatment is incomplete. For example, the fact that the force-velocity relationship initially described by Hill takes the form of a rectangular hyperbola is presented (as in earlier editions), but without reference to the physiological implications of the constants used to describe the relationship or to the relationship of Vmax to the actin-myosin ATPase of the muscles. Heat production by muscle is emphasized, but with no reference to recovery heat or its basis. The treatment of cardiac muscle does cover more recent findings, primarily from the author’s own work. However, inadequate attention is given such basic functions as regulation of contraction and its modification by autonomic stimulation. The treatment of smooth muscle is totally inadequate and fraught with errors. Some of the most exciting and functionally important discoveries regarding smooth muscle, made within the time frame covered for striated muscle as well as in recent years, are ignored. These include the role of interstitial cells as pacemakers, electromechanical coupling, pharmacomechanical coupling and mechanisms of the regulation of contraction. The scheme presented for the regulation of contraction is certainly a figment of the author’s imagination, invoking a role for caldesmon that seems to be based on information available only to the author, and not in published or even widely known, let alone accepted schema. This criticism extends as well to the mention of structure of smooth muscle, which is out-dated and erroneous. This is exemplified by the dangerous practice of using images from old textbooks, such as the cartoon of a smooth muscle cell showing an oblique arrangement of contractile filaments as the normal physiological structure in tissues. This is contrary to the original work in which the author (Fay) stipulated that this arrangement occurs only in freely shortened isolated cells.

In summary, this book, unlike the preceding editions, is overly ambitious in scope and very disappointing in failing to reach its goal of advancing knowledge. Students seeking up-to-date information on nerve and muscle would not be well served by reading this book.

Marion J. Siegman,  
Thomas M. Butler,  
Ji-fang Zhang

Jefferson Medical College  
Philadelphia, PA
Hi all: Now that EB is over and I can go back to being an ordinary citizen, I can focus on the important things in life: talking to my grape vines (grape clusters starting to form), telling the birds to stay off the peaches, executing weeds, and watching the electric meter spin backwards, thanks to the solar panels. And a little winetasting.

**Whites:**

2009 Elk Cove Pinot Gris, Oregon $13. Here is what I said in January, 2011 about this wine (I tasted it again this past weekend, and it was every bit as good this time, so I list it again): This is a very high quality wine, and very varietal. There is peach and apricot on the nose with some citrus as well. The palate is crisp and clean with good acidity and lots of ripe peach and apricot flavored fruit. No oak. Yum. For this price, well worth it.

2010 Dashwood Sauvignon Blanc, Marlborough, New Zealand $8. The obligatory NZ SB for the column. This wine has—surprise—loads of clean, herbal, grassy gooseberry/passion-fruit/lime flavors, strong but not excessive acidity, great body and length. As good as most, & cheaper than every other good NZ SB I have come across.

2010 Kim Crawford Sauvignon Blanc, Marlborough, New Zealand. $13. It is slightly richer than the Dashwood, but unless you have them side by side, you will not notice any difference. Last year, this one beat out 11 other NZ SB’s in our tasting group’s blind evaluation, and I think it is just as good again this year. Has the same features as the Dashwood, just a bit more concentrated.

2009 Wolftrap white blend, South Africa $8. This is an odd mix of Viognier, Chenin Blanc and Grenache Blanc, but it’s quite tasty. The nose has pear and apple; the palate is viscous with pear, apple and citrus. Medium acidity and length, it is a pleasant party wine.

2009 Lava Cap Sauvignon Blanc, El Dorado (Sierra Foothills) $11. Gotta have one Californian in the column. The nose has melon, with a mineral edge. This wine has very ripe fruit, and seems to have a little residual sugar making it a touch sweet. It is viscous, with stone fruit, pear, and apricot on the palate. It is really not recognizable as a Sauvignon Blanc, but if you can cope with that, it’s a good wine with cheese etc.

**Red wines**

2008 Stalking Horse Shiraz, McLaren Vale, South Australia $13. No, I haven’t a clue how horses stalk, or, more importantly, why. This is classic over the top stuff – 15% alcohol; almost black; The nose is forward with dark plumy fruit, slight earth, slight green pepper, medium tannin and medium acid. Balance is excellent. This is a dinner-quality wine, not a party wine, despite its price. Mind you, I would be happy to slurp it at a party too.

2009 Screaming Deal Cabernet Sauvignon, Livermore valley CA $12. This is a very young and voluptuous wine, a bit simple now, but when it reaches puberty, watch out. Very forward nose of grape juice and dark cherry, a little earth. The palate is rich, simple, viscous, with medium tannin and good acid. It has a very long finish. Try it now, but please buy two so you can check it out a year from now.

Here’s a first: A **negative** recommendation. Don’t waste your time, dollars or palate on it. Why then bother to mention it, you ask? Because Robert Parker gave it a 92 and Wine Spectator has it ranked at #68 out of the top 100 wines in 2010, and not that many wines in their top 100 are under $20:

2009 Achaval Ferrer Malbec, Mendoza, Argentina $19. Fish oil (sardines) on the nose and palate, with tons of tannin and sour tart cherry fruit. What were these guys thinking? ✨
July 1-4
SEB Glasgow 2011, Glasgow, United Kingdom. Information: Talja Dempster, Conference and Communications Manager, Society for Experimental Biology, Charles Darwin house, 12 Roger Street, London, WC1N 2JU. Tel.: +44 (0) 207 6852605; Fax: +44 (0) 207 6852601; Email: t.dempster@sebiology.org; Internet: http://sebiology.org/meetings/glasgow_2011/glasgow.html.

July 4-6

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

July 10-12
International Congress on Carnosine in Exercise and Disease, Ghent, Belgium. Information: Email: carnosine@medicongress.com; Internet: http://www.carnosinecongress.org/.

July 14-18
8th IBRO World Congress of Neuroscience, Florence, Italy. Information: Scientific Secretariat, Domenico E. Pellegrini Giampietro, Department of Preclinical and Clinical Pharmacology, University of Florence, Viale Pellegrini 6, 50139 Florence, Italy. Tel.: +39 055 4271.205; Email: domenico.pellegrini@unifi.it; Internet: http://www.ibro2011.org/site/home.asp.

July 22-27
30th International Congress of Psychology - ICP 2012, Cape Town, South Africa. Information: Fatima Seedat. PO Box 989, Houghton 2041, South Africa. Tel.: +011 486 3322; Fax: +011 486 3266; Email: info@icp2012.com; Internet: http://www.icp2012.com/index.php?bodyhtml=home.html.

August 1-5
12th International Congress on Amino Acids, Peptides and Proteins, Beijing, China. Information: Professor Gert Lubec, FRSC (UK), c/o Medical University of Vienna, Währinger Gürtel 18, A-1090 Vienna, Austria. Fax: +43.1.40400 6065; Email: gert.lubec@meduniwien.ac.at.

August 2-4
International Human Cadaver Prosection Program, Gary, IN. Information: Ernest F. Talarico, Jr., Ph.D., Assistant Directory of Medical Education & Assistant Professor of Anatomy & Cell Biology, Director, International Human Cadaver Prosection Program. Tel.: 219-981-4356; Fax: 219-980-6566; Email: cadaver@iun.edu; Internet: http://iusm-nw.medicine.iu.edu/.

August 6-11

August 7-17
Laboratory Training Course: Oocyte and Preimplantation Embryo Molecular Biology, Philadelphia, PA. Information: Keith E. Latham, Ph.D., Department of Biochemistry, Temple University School of Medicine, 3307 North Broad Street, Philadelphia, PA. Tel.: 215-707-7577; Fax: 215-707-1454; Email: klatham@temple.edu; Internet: http://www.pregercourse.org/.

August 14-17
2011 National HIV Prevention Conference - The Urgency of Now: Reduce Incidence. Improve Access. Promote Equity, Atlanta, GA. Information: Tel.: 888-234-6291; Email: info2011NHPc@org; Internet: http://www.2011nhpc.org/.

August 14-21

September 1-4
5th International Conference on Oxidative Stress in Skin Biology and Medicine, Andros, Greece. Information: M. Rallis, University of Athens, School of Pharmacy, Panepistimiopolis Zagorafou 15771, Athens, Greece. Tel.: +30-210-7274689; Fax: +30-210-7274027; Email: rallis@pharm.uoa.gr; Internet: http://www.pharm.uoa.gr/oxstress.

September 6-9
International Psychogeriatric Association 15th International Congress, Hague, The Netherlands. Information: Email: info@ipa-online.org; Internet: http://www.ipa-online.org/.

September 7-11

September 9-11
Oskar Kellner Symposium 2011: Metabolic Flexibility in Animal and Human Nutrition, Warnemunde, Germany. Information: Email: oks-info@fbn-dummerstorfer.de; Internet: http://oks.fbn-dummerstorfer.de/.

September 11-14
The 7th FAOPS Congress, Taipei, Taiwan. Information: Secretariat of FAOPS 2011, Department of Physiology, College of Medicine, National Cheng Kung University, Tainan, Taiwan 70101. Tel.: 866-6-235355 ext. 5436; Fax: 866-6-2362780; Email: FAIOS@conf.ncku.edu.tw; Internet: http://conf.ncku.edu.tw/faops/index.htm.

September 11-14
The Twelfth International Conference on Endothelin (ET-12), Cambridge, United Kingdom. Information: Amalie Brown, ET-12 Conference Secretariat, c/o The British Pharmacology Meetings Secretariat, London, UK. Tel.: +44 207 239 0183; Email: meetings@bps.ac.uk; Internet: http://www.endothelin-conferences.org/Cambridge2011/.
The APS Journals
Key Facts!

One Physiology Collection—to Multiple Disciplines

BIOSIS PREVIEWS • ISI Web of Science • MEDLINE and PubMed: APS Journal content is indexed through all of these excellent services.

HighWire: APS journals are hosted by HighWire Press (a division of Stanford University Libraries), the leading ePublishing platform for high impact, peer-reviewed content, with 1,465 journals.

eTOCs (electronic Table of Contents): Receive instant notification of new APS content.

CiteTrack: Use your own criteria and key words to be notified of newly posted APS journal content.

RSS Feeds: Another great way to receive a notification of newly posted APS journal content.

Free Necessary Color: Regular or Student members of APS who are first or last authors of articles in any of the APS research journals get free scientifically necessary color.

FREE Online Access to the extensive collection of back issues 12 months after publication.

AuthorChoice: Authors can choose to pay a fee on top of regular author fees and have their articles publicly available upon publication.

Articles in Press: Instant, subscription-based access to newest research (post-acceptance, pre-copyedited) in original manuscript format.

Legacy Content: Online package of over 100 years of historical scientific research from 13 American Physiological Society research journals going back to the first issue of each of the APS journals.

Manuscripts online within days of acceptance!
MEMBERSHIP APPLICATION FORM
The American Physiological Society

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

2. Name of Applicant: ___________________________ ___________________________ ___________________________ 
   Last Name or Family Name First Name Middle Name

3. Date of Birth: __________/________/________ Optional: Male □ Female □
   Month / Day / Year

4. Institution Name: ___________________________ Department: ___________________________
   (Please do not abbreviate Institution Name)

5. Institution Street Address: ___________________________

6. City/State/Zip/Country: ___________________________

7. Home Address (Students Only): ___________________________

8. Work Phone: ___________________________ Home Phone: ___________________________

9. Fax: ___________________________ E-mail: ___________________________

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

11. WHAT IS YOUR SECTION AFFILIATION? Please identify your primary sectional affiliation with a "*" and check (✓) up to two additional sections with which you would like to affiliate. There can be only one "Primary" affiliation.
   __ Cardiovascular
   __ Cell & Molecular Physiology
   __ Central Nervous System
   __ Comparative & Evolutionary Physiology
   __ Endocrinology & Metabolism
   __ Environmental & Exercise Physiology
   __ Gastrointestinal & Liver Physiology
   __ Neural Control & Autonomic Regulation
   __ Renal Physiology
   __ Respiration Physiology
   __ Teaching of Physiology
   __ Water & Electrolyte Homeostasis

12. DO YOU WORK IN INDUSTRY? □ YES □ NO

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

   CHECK THIS BOX IF APPLICABLE: □ Please locate sponsors on my behalf.
   #1 Sponsor Name ___________________________ Mailing Address: ___________________________
   Phone: ___________________________ Fax: ___________________________ E-mail: ___________________________
   Sponsor Signature* ___________________________

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

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

Please turn over for more questions...and mailing instructions.
14. OCCUPATIONAL HISTORY  [Check if student □]

<table>
<thead>
<tr>
<th>Current Position:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dates</td>
<td>Title</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prior Positions:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dates</td>
<td>Title</td>
</tr>
</tbody>
</table>

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


16. DOCTORAL DISSERTATION TITLE (if applicable):  

17. POSTDOCTORAL RESEARCH TOPIC (if applicable):  

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

- [ ] Mailer  
- [ ] Meeting (Which meeting? □□□□)  
- [ ] Colleague  
- [ ] Other  

Mail your application to: Membership Services Department, The American Physiological Society  
9650 Rockville Pike, Bethesda, Maryland 20814-3991 (U.S.A.)  
(or fax to 301-634-7264) (or submit online at: www.the-aps.org/membership/application.htm)  
Send no money now—you will receive a dues statement upon approval of membership.  
Approval Deadlines: Membership applications are considered for approval on a monthly basis.  
Questions? Call 301-634-7171 • Fax 301-634-7264 • E-mail: members@the-aps.org • Web: www.the-aps.org  

R/2-2009-1