



The Physiologist

Bodil Schmidt-Nielsen Award Lecture

Mentoring: A Fun Collaborative Activity

Brian R. Duling
University of Virginia

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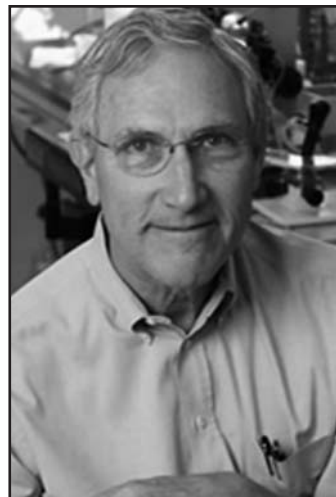
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Introduction

I want to thank Jane F. Reckelhoff and the APS Women in Physiology Committee for recognizing the laboratory with the Bodil Schmidt-Nielsen Mentor Award. My gratitude, of course, extends to those who did the work, the world-wide members of Cimcon, and especially to Tara Haas, who spearheaded the nomination. This award means so much to me simply because it's heart-warming to be recognized by those who know you best, that is, by people who have passed through the lab and who feel that we did well together. The award also completes a circle in a way. Bodil Schmidt-Nielsen and I had a connection through her father and mother, August and Marie Krogh. I had long admired August Krogh's work and had studied his papers closely over the years and even visited his home and laboratory in Copenhagen. It was my custom in the lab to use scientists as role models or as "heroes/heroines" for discussion with people in the lab. I think it's vital that students feel that they are part of an ongoing process, resulting from the combined activity of many scientists



Brian R. Duling

who have gone before them; it helps the students to see that they are not just tinkering with the latest fad in the work that they do in the lab. John Pappenheimer and Arthur Guyton occupied this hero's place, as well as August Krogh, whose thoughts and ideas were a pivotal part of what went on my lab for many years. I even had a name plaque made for Professor Krogh and put on the door to the

lab. Bodil came through Charlottesville for a seminar and was touched by the plaque enough to refer to it in her book, and we talked a long time about her father and mother and life in Copenhagen.

I must also place my children in a prominent place in the list of people who must be recognized and thanked. Unfortunately for them, I suppose, they were the subjects of my first learning laboratory in mentoring. I worked pretty hard at it and I must admit that I inadvertently made them work harder at being mentored than I think was really necessary, but I had to start on

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The Physiologist

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American Physiological Society 162nd Business Meeting

Time: 5:45 PM, Tuesday, April 21, 2009
Place: New Orleans, LA

I. Call to Order

The meeting was called to order at 5:45 PM by **President Irving H. Zucker**, who welcomed the members to the 162nd Business Meeting of the American Physiological Society. A booklet containing the agenda and a listing of all the APS award recipients was distributed.

II. Election of Officers

President Zucker announced the results of the election. The election was conducted via an online ballot. The new President-elect is **Peter Wagner**, Univ. of California, San Diego (April 22, 2009 – April 25, 2012). The three newly elected Councillors are David Brooks, Johnson & Johnson; **Usha Raj**, Univ. of Illinois at Chicago; and **Curt Sigmund**, Univ. of Iowa (April 22, 2009–April 25, 2012). They are replacing James Hicks, Dee Silverthorn, and J. Michael Wyss who are completing three-year terms on Council. The newly elected Councillors will serve a three-year term. All newly elected officers will assume office at the close of the Annual Meeting. Frank said that 28% of the membership voted in the election.

III. Bylaw Changes

In compliance with the Bylaws of the Society, the proposed amendments to the Bylaws noted below were published in *The Physiologist* [51(6): 240-241, 2008].

A motion was unanimously passed by the membership approving the following Bylaw amendments:

ARTICLE IV. Officers

SECTION 1. *Council*. The Chairpersons of the Publications Committee, the Finance Committee, the Joint Program Committee, the Education Committee, the Public Affairs, the APS Representative to the FASEB Board, and the Executive Director are ex officio members of the Council without vote; the Chairperson of the Section Advisory Committee is an ex officio member of the Council with vote. The Council may fill any interim vacancies in its membership. Council shall appoint members to all committees except the Chapter Advisory Committee, Section Advisory Committee, Joint Program Committee,

Liaison with Industry Committee, Committee on Committees, and the Trainee Advisory Committee.

SECTION 4. a. *Nomination of Officers*. Nominations for President-Elect and for members of Council will be made by ballot, on forms provided by the Executive Director, before ~~January 1~~ September 30 of each Year. Each member may nominate no more than one candidate for each office. If a member wishes to nominate the same person for President-Elect and for Councillor he/she must nominate that individual for each position.

A motion was unanimously passed by the membership approving the following Bylaw amendments:

ARTICLE V. Standing Committees

SECTION 1. *Publications Committee*. A Publications Committee composed of five regular members of the Society appointed by Council shall be responsible for the management of all of the publications of the Society. The term of each member of the Publications Committee shall be three years; a member may not serve more than two consecutive terms. The Council shall designate the Chairperson of the Committee who shall be an ex officio member of the Council, without vote. On the advice of the Publications Committee and consent of Council, the Executive Director shall be empowered to appoint and compensate the Director of Publications ~~Publications Manager~~ who shall assist in carrying out the functions of the Publications Committee under the supervision of the Executive Director. The President, Executive Director and the Director of Publications ~~Publications Manager~~ shall be ex officio members of the Publications Committee without vote. The Committee shall have the power to appoint editorial boards for the Society's publications. The Committee shall present an annual report on publications and policies to the Council for approval and present an annual budget coordinated through the Executive Director, to the Finance Committee for its approval and recommendation to Council.

SECTION 2. *Finance Committee*. A Finance Committee, composed of five regular members of the Society appointed by Council, shall receive the total coordinated budget proposals annually from the

Executive Director and shall determine the annual budgets, reserve funds and investments of the Society, subject to approval by the Council. The term of each member of the Finance Committee shall be three years; a member may not serve more than two consecutive terms. The Council shall designate the Chairperson of the Committee who shall be an ex officio member of the Council, without vote. On advice of the Finance Committee and consent of Council, the Executive Director shall be empowered to appoint and compensate a Business Manager ~~Director of Finance~~ who shall assist in carrying out the functions of the Finance Committee under the supervision of the Executive Director. The Past President shall serve as a voting member of the Finance Committee. The President-Elect, President, Executive Director, the Chairperson of the Publications Committee, and the Business Manager ~~Director of Finance~~ shall be ex officio members of the Finance Committee, without vote.

SECTION 4. *Education Committee*. An Education Committee, composed of five or more regular members of the Society and representatives of such other societies as may be designated by the Council, appointed by the Council, shall conduct such educational, teaching and recruitment programs as may be required or deemed advisable. The term of each member of the Education Committee shall be three years. The Chairperson of the Committee shall be designated by the Council. On the advice of the Education Committee and consent of Council, the Executive Director shall be empowered to appoint and compensate the Director of Education Programs who shall assist in carrying out the functions of the Education Committee under the supervision of the Executive Director. ~~The Executive Director may act as executive officer of the educational programs with approval of the Council.~~ The Committee shall present an annual report to the Council and an annual budget through the Executive Director to the Finance Committee for its approval and recommendation to Council.

SECTION 5. *Joint Program Committee*. A Joint Program Committee composed of ~~six regular members of the Society appointed by Council and~~ elected

representatives of the sections and groups shall be responsible for the Society's annual spring meeting scientific programs of the Society. The term of each member shall be for three years; a member may not serve more than two consecutive terms. The Council shall designate the Chairperson of the Committee, who shall be an ex officio member of the Council, without vote. The President-Elect and Executive Director shall be ex officio members, without vote.

A motion was unanimously passed by the membership approving the following Bylaw amendment:

ARTICLE VI. Dues

SECTION 2. Nonpayment of Dues. A regular member, affiliate member, or student member. Members whose dues are two years in arrears shall cease to be a member of the Society, unless, after payment of dues in arrears and application to the Council, he/she shall be reinstated at the next meeting by vote of the Council. It shall be the duty of the President-Elect to notify the delinquent of his/her right to request reinstatement.

A motion was unanimously passed by the membership approving the following Bylaw amendments:

ARTICLE III. Membership

SECTION 1. The Society shall consist of regular, honorary, affiliate, emeritus, graduate student, undergraduate student, and sustaining associate members.

SECTION 5. Emeritus Members. A regular member may apply to Council for transfer to emeritus membership if that person (1) has reached the age of 65 and is retired from regular employment or (2) has been forced to retire from regular employment because of illness or disability and (3) has been a Regular member in good standing for a minimum of 10 years. An emeritus member may be restored to regular membership status on request to Council.

SECTION 6. a. Graduate Student Members. Any doctoral or masters program student who is actively engaged in physiological work as attested to by two regular members of the Society shall be eligible for proposal for graduate student membership. No individual may remain in this category for more than five years, without reapplying.

SECTION 6. b. Undergraduate Student Members. Any matriculated undergraduate student, as demonstrated by submission of verification of stu-

dent status, who has an interest in physiology is eligible for undergraduate student. No individual may remain in this category for more than five years.

A motion was unanimously passed by the membership approving the following Bylaw amendments:

ARTICLE VII. Financial

SECTION 1. Operating Fund Purpose. The Operating Fund is used to provide sufficient cash to meet daily and ongoing financial obligations of APS. The Operating Fund will contain sufficient cash to cover current expenditures.

SECTION 2. Short-Term Fund Purpose. The Short-Term Fund is used to meet unanticipated expenditures that exceed the Operating Fund's reserves. The Short-Term Fund is to contain approximately 50% of the value of the Operating Fund.

SECTION 3. Long-Term Fund Purpose. The purpose of the Long-Term Fund is to maintain a long-term reserve for significant and unanticipated expenditures and to support, with some portion of the reserve's earnings, the general operating budget of the APS. The Long-Term Fund will also provide a structure in support of endowed and Council-designated funds used to:

Support programs for the development of physiology and physiologists.

Encourage communication with other disciplines of science and the community at large.

Foster scientific and cultural relations with other parts of the world.

SECTION 1. Society Operating Fund. The Society Operating Fund shall consist of all funds, other than Publication Operating Funds and Publication Contingency and Reserve Funds, restricted or unrestricted, uninvested or invested, short or long term. The Executive Director shall be the responsible agent to the Council with signatory powers. Signatory powers may be delegated to the Business Manager by the Executive Director.

SECTION 2. Publications Operating Fund. The Publications Operating Fund shall consist of all funds that involve receipts, expenses, short term investments relating to the annual receipts, disbursements and continuing operation of the Society's publications. The Executive Director shall be the responsible agent to the Council with signatory powers. Signatory powers may be delegated to the Business Manager by the Executive Director.

SECTION 3. Publications Contingency and Reserve Fund. The Publications Contingency and Reserve Fund shall consist of the long term capital investments of publication earnings. The Executive Director, with advice from the Finance Committee, shall have discretionary and signatory powers, except for withdrawals. Authority for any withdrawal from this fund shall require the following five signatures: 1) the Chairperson of the Publications Committee (alternate, the senior member of the Committee); 2) the President of the Society (alternate, the President Elect); 3) the Executive Director (alternate, the Publications Manager); 4) and 5) any two members of Council. The Finance Committee shall not recommend to Council the expenditure of any of this capital fund for non-publication purposes without the consent of the Publications Committee. The Finance Committee shall be responsible for the separate investment of the reserve fund for publications; any capital gains from such investment shall accrue to the fund (capital losses will, however, reduce its value). Any dividends, interest or income, other than capital gains, from this invested fund may be used for emergency support of any of the activities of the Society, including publications, as determined annually by the Council, but the primary goal shall be to increase the investment capital.

APS member Paul Johnson said that in the past, there were issues regarding publications income, and separation of funds. He asked if all funds can be put into the Operating Fund, or if there is a need for separation of funds. Frank said this is a change to reflect how the funds have been managed for over a decade, and that there is no requirement to separate the various fund accounts.

V. Report on Membership

A. Summary of the Membership Status

President-Elect Gary Sieck reported on the status of the Society membership. As of March 1, 2009, the current membership of the Society is 9,696, of which 7,422 are regular members, 29 are honorary members, 1,111 are emeritus members, 37 are affiliate members, and 1,097 are student members.

B. Deaths Reported Since the Last Meeting

Sieck read the names of those members whose deaths had been reported

since the last meeting. The membership stood and observed a moment of silence in tribute to their deceased colleagues.

VI. State of the Society

President Zucker addressed the membership and spoke on the state of the Society. He said that APS has outstanding committees and a hardworking staff that helps to make the Society a successful organization.

A. Future APS Meetings

There will be an APS Conference entitled *Sex Steroids and Gender in Cardiovascular-Renal Physiology and Pathophysiology* in Broomfield, CO, July 15-18, 2009.

There will be an APS Conference entitled ET-11: APS International Conference on Endothelin, September 9-12, 2009, Montréal, Canada. The Experimental Biology 2010 meeting will be April 24-28, in Anaheim, CA.

B. Beijing Meeting

Zucker said that, as APS President, he participated in several joint meetings over the past year. One of the meetings he attended was the Beijing Physiology 2008 Meeting: *Bridging Bench and Bedside*. The participating societies in Beijing Physiology 2008 included the Chinese Association of Physiological Sciences, The Physiological Society (UK), APS, the Canadian Physiological Society, and the Australian Physiological Society. In addition, the meeting was co-sponsored by the International Union of Physiological Sciences (IUPS), the Federation of the Asian and Oceanian Physiological Societies (FAOPS), and the National Natural Science Foundation of China. Zucker said that APS provided support for its members that attended the meeting. He found it to be a very rewarding experience.

C. Joint APS Spanish Physiology Meeting

Zucker said that he, along with APS Councillors Joey Granger and David Pollock, participated in the 35th Congress of the Spanish Society of Physiological Sciences in Valencia, Spain, on February 20, 2009. APS is working on plans to participate in another joint meeting in the spring of 2012.

D. Education

Zucker said that APS is a leader among biomedical societies in the number of educational activities and

programs offered; one of these being PhunWeek. PhunWeek is a program for K-12 students, and participation in the program grows every year. The next PhunWeek will occur in November 2009.

Another educational program offered by APS is the Professional Skills Training Workshops. Two workshops were presented this past January; one on how to write a manuscript and another on presentation skills. Zucker said that these workshops have been well received, and continue to be very successful. The next workshop will be January 2010.

E. Publications

Zucker said that, for those members who were not aware, APS Publications Director Margaret Reich has left APS, and Rita Scheman has been hired as the new Director of Publications. Zucker reported that the Publications Committee has approved raising the subscription prices for 2010 by 5%, and the subscription rate for the Legacy Content will be raised by \$250. The Committee reported that the journal impact factors for the APS journals remain strong, averaging 3.5% - 4.5 %; and that time from acceptance to publication has been reduced to 2.2 months. Also, APS has signed an agreement with Wiley to publish the Handbooks of Physiology Online as *Comprehensive Physiology*—an updatable handbook series. APS member Ron Terjung will be the new editor.

F. Open Access

Zucker reported that Executive Director Martin Frank testified before the House Subcommittee on the Courts, the Internet and Intellectual Property on HR 6845-Fair Copyright in Research Works act.

Zucker said that APS now complies with the NIH Public Access Plan guidelines and will deposit published articles supported by the NIH into PubMedCentral on behalf of its authors.

G. Science Policy and ACE

Zucker acknowledged and thanked the following for their hard work over the past year on science policy issues: Director of Government Relations and Science Policy Alice Ra'anana, APS Science Policy Analyst Rebecca Osthus, Public Affairs Committee Chair Michael Portman, Animal Care & Experimentation Committee Chair Tim Musch, and APS FASEB Board Representative William Talman. Zucker congratulated Talman on his election as FASEB President.

Zucker reported that among its many projects this year, the ACE committee worked on providing comments to the ILAR update of the *Guide for the Care and Use of Laboratory Animals*, helped get legislation introduced into Congress regarding Class B animals, and is continuing to monitor NHP (Non Human Primates) issues.

He said that issues the Public Affairs Committee is working on include federal funding for research, airline transportation of research animals, and peer review at NIH. Members of the Public Affairs Committee also visit Capitol Hill to discuss the importance of federal funding for biomedical research when they come to Bethesda for their fall committee meeting.

H. Finances

Zucker said that APS has felt the effects of the economy, just like everyone else, but the current financial situation has not impacted most of the programs and awards that APS offers its membership. Zucker thanked APS Director of Finance Robert Price, and past Finance Committee Chair Peter Wagner for their hard work. He then welcomed the new chair of the Finance Committee Jeff Sands.

I. Pipeline Task Force

Zucker said that this Task Force was created to determine what the Society could do to get more students into the discipline. Currently, the task force is focusing on possible programs to reach out to undergraduate students. They are also looking at how best to restructure existing APS programs to bring more students into the pipeline.

J. Other Highlights

Zucker said that the Society will soon be announcing a logo redesign contest for the membership. The Society needs a logo that is readable and more current. The winner of the contest will receive a monetary award.

Zucker said that APS will begin the process of developing a new strategic plan soon. As part of the development process, a Members Needs Survey will be conducted next year.

Zucker said that Council will be planning special activities to take place at EB2012 to celebrate the Society's 125th anniversary. EB2012 will be in San Diego, CA.

The Future of Physiology

Zucker said that he wanted to reiterate the three themes from his presidential article—passion, responsibility and

morality in science. Zucker said that the Society needs to continue to grow, learn and change in order to move forward. This can be accomplished through such vehicles as the strategic plans. Secondly, APS members should have a passion for their research, and teaching if that is a part of their academic career. Finally, all members should have high ethical standards. "The truth cannot be found without high ethical standards in research."

VII. Awards and Presentations

A. Ray G. Daggs Award

The 2009 Daggs Awardee is Francis Haddy.

Haddy has had a long and positive association with the APS, dating back to 1953 when he became a member of the Circulation Group. In 1966, he received the Carl J. Wiggers Award, recognition by this group of his outstanding research record, and from 1971 to 1974, he served on its Steering Committee.

His APS editorial responsibilities also began early. In 1963, he joined the editorial boards of the *American Journal of Physiology* and the *Journal of Applied Physiology* and subsequently began service on the Editorial Board of the *American Journal of Physiology: Heart and Circulatory Physiology* (as well as on the editorial boards of a half-dozen other journals during his career—including *Circulation Research*, *Microvascular Research*, *Hypertension*, and *Microcirculation*).

In 1974, Haddy assumed the chairmanship of the newly established APS Committee on Committees; in 1976, he was elected to the APS Council; in 1980,

he began serving as president-elect; and during 1981-82, he served as the 54th president of the APS. During his presidency, Haddy led the reorganization of the Public Affairs Committee and directed a major effort toward improving animal care legislation. Subsequent events have underscored the importance of these efforts. After completing his presidency, he continued to actively contribute to the APS in a variety of ways, including service on such APS committees as the Finance Committee, first as a member and then as chair, the Ray G. Daggs Committee, the Animal Care Committee, and the Long Range Planning Committee.

In addition to his commitment to the APS, Haddy has an outstanding record at the national level in advancing physiological endeavors. For example, he served as a member of the NIH Cardiovascular Study Section, on the Cardiovascular Training Committee on the Atherosclerosis and Hypertension Advisory Committee of the National Heart and Lung Institute, on the NASA Life Sciences Advisory Committee, and on the NASA-NIH Advisory Committee on biomedical and Behavioral Research. His insightful analysis of policy issues in medicine and physiology and his leadership qualities are widely recognized as outstanding as illustrated by his contributions to the expansion of two established medical schools (at Northwestern and the University of Oklahoma) and his help in establishing two new medical schools (at Michigan State and the Uniformed Services University in Bethesda). His exceptional leadership skills are also evident by his selection as Professor and Chair at the University of Oklahoma, Michigan State University, and the Uniformed Services University of the Health Sciences.

Haddy excels at bridging communication between basic scientists and clinicians, and he has been a consistent advocate of joint training and joint appointments, recognizing the importance of translation-

al research well before it was fashionable to do so. Many of Haddy's publications (over 300), are in translational research. His research has markedly advanced the understanding of edema, shock, myocardial ischemia, and hypertension. Noteworthy are his studies related to the hypothesis that inhibition of Na-K-ATPase plays an important role in explaining the increased total peripheral resistance in hypertension, especially volume loading hypertension. His work laid the scientific foundation for the search for a digitalis-like or ouabain-like substance in the blood that raises total peripheral resistance in hypertension. This work is summarized in several seminal reviews. Equally impressive is his work that delineated the multiple local control mechanisms that regulate tissue blood flow. His research systematically and precisely documented the role of potassium, osmolarity, sodium, calcium, magnesium, hydrogen, adenosine, and many other metabolic factors in controlling tissue blood flow. His work on pulmonary edema demonstrated that several forms of pulmonary edema often result from increased pulmonary capillary hydrostatic pressure rather than increased capillary permeability, as was commonly believed in the 1950s and 1960's.

Over his career, Haddy has worked with hundreds of medical residents and graduate students, providing them with outstanding training and mentoring. One former physiology graduate student from Michigan State fondly recalled that "as Chair, Dr. Haddy not only supported many students with funding, engaged actively in classroom teaching, and developed a strong and productive research group in cardiovascular physiology, he fostered a collegial atmosphere among all involved in the program. He is a man blessed with personal warmth, insight, and a generous spirit. One of the great pleasures of the typical work week at MSU was the Friday afternoon get together of faculty, students, and staff at a local watering hole where Dr. Haddy always bought the first round and stayed to chat with all."

In recognition of his outstanding research, education, and professional contributions, Haddy has been the recipient of numerous awards. These include the aforementioned Wiggers Award, his election as a Fellow of the American College of Nutrition, the Medical Science Achievement Award from the American Heart Association, the Scientist Emeritus Award from the



APS President Irving Zucker presents Francis Haddy with the Ray G. Daggs Award.

MD-DC chapter of the Society for Experimental Biology and Medicine, the Distinguished Service Award from his alma mater (Luther College), and the Distinguished Alumnus Award from the Mayo Clinic.

Present to help Haddy celebrate his honor were his wife and two daughters. Upon receiving the award Haddy said that he wanted to “thank the Society for this honor.”

B. Arthur C. Guyton Teacher of the Year Award

The Arthur C. Guyton Physiology Teacher of the Year Award is selected by the Teaching Section and is presented to an APS member who is a faculty member at an accredited college or university. The Selection Committee selects a candidate for the Award who demonstrates evidence of: 1) excellence in classroom teaching over a number of years at undergraduate, graduate, or professional levels; 2) commitment to the improvement of physiology teaching within the candidate's own institution; and 3) contributions to physiology education at the local community, national or international levels. This year's selection committee was chaired by Jennifer Lundmark. Penny Hansen, committee member and former award winner, presented the award along with William Schmitt, Elsevier, to Subah Packer of the Indiana Univ. School of Medicine.

Packer is dedicated to physiology education and the pursuit of integrating research with education and her contributions to these areas have been innovative and widespread. As the director of several courses at Indiana University, she is recognized by colleagues as some-

one who consistently strives to incorporate novel techniques and thoughtful approaches within the classroom and research environments. She has been actively involved in curriculum and faculty development issues on the Indiana University campus, and has been acknowledged for her use of Problem-Based Learning in the first-year medical curriculum. As one colleague writes, “Subah incorporates thought provoking demonstrations and uses a facilitator teaching style to guide students along the path to self-discovery and an understanding of physiological concepts. This is the common characteristic of all outstanding teachers, but a characteristic which the great majority of us find very challenging to fully adopt as our own.”

In addition to her excellence in classroom teaching, Packer is widely recognized for her laboratory-based research program. She has engaged undergraduate, graduate, and professional students in her laboratory, and for over 10 years has made important contributions to science education at the high school level through her work with Project SEED, shepherding future scientists into the research lab. For the last 14 years, she has served as a Site Leader for the APS Frontiers in Physiology High School Teacher Summer Research Program. As one colleague wrote, “She constantly has teachers visiting her laboratory to gain experience in her line of research. Most of them brought their training back to their classrooms. At least one teacher got extremely turned on and enrolled in our department to obtain a PhD degree. Her vision of educating high school teachers, thereby elevating the level of

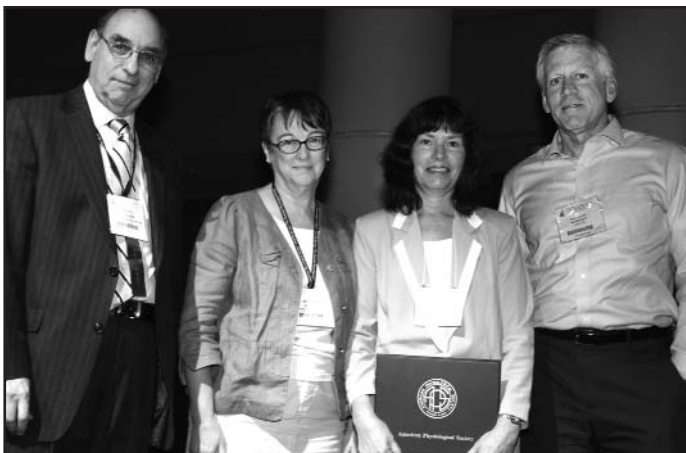
science in high school, is admirable.” Because Packer seeks to maintain a relationship with these teachers, she has subsequently become a noteworthy physiology education resource for the state of Indiana.

Packer is described by colleagues as an “exceptional teacher” who consciously fosters a collaborative approach between mentor and student in the research setting, helping them to “capture some of the enthusiasm she feels about research.” To this end, she has worked with various organizations focused on student success, including Upward Bound, NIH, through its T35 research training program for minority students, and as an advisor for the MS in Medical Sciences program, which assists disadvantaged students in gaining admission to medical school. It is additionally noteworthy that several students wrote to the Guyton committee in support of her nomination, citing her unwavering support and dedication to their success.

Packer has been nominated for several prestigious research and educational awards, and has impacted physiological education at regional, state, and national levels.

C. S&R Foundation Ryuji Ueno Award for Ion Channels or Barrier Function Research

The S&R Foundation Ryuji Ueno Award for Ion Channels or Barrier Function Research was established in 2007 by the American Physiological Society through the generous support of Ryuji Ueno, Sachiko Kuno, and S&R Foundation. Ueno and Kuno are founders of Sucampo Pharmaceuticals, Inc., and S&R Foundation.



APS President Irving Zucker and Penny Hansen, APS Teaching Section Representative and last year's awardee, present the Guyton Teacher of the Year Award to Subah Packer, along with William Schmitt, Elsevier.



APS President Irving Zucker, Ryuji Ueno, and Sachiko Kuno present My Nga Helms with the S&R Foundation Award. Ueno and Kuno are founders of Sucampo Pharmaceuticals, Inc., and S&R Foundation.

An annual award of \$30,000 is given to an individual demonstrating outstanding promise based on his or her research in ion channels or epithelial barrier function, and who holds an academic rank of assistant professor or higher. This year the Society is pleased to recognize the promise of My Helms, Emory Univ.

D. Early Career Professional Service Award

The Early Career Professional Service Award honors a member of the Society at an early career stage (graduate student, postdoctoral fellow, Assistant Professor or equivalent position) who is judged to have made outstanding contributions to the physiology community and demonstrated dedication and commitment to furthering the broader goals of the physiology community. This can be by serving on professional committees, participating in K-12 education outreach, participating in scientific advocacy and outreach programs, or by otherwise strengthening and promoting the physiology community. The recipient of the 2009 Early Career Professional Service Award is Rudy Ortiz, Univ. of California, Merced.

Trainee Advisory Committee Chair Erica Wehrwein said that Ortiz not only has an impressive research career, but has been very involved in APS and many of its programs. He has contributed on local and national levels through mentoring, and works with summer research programs.

E. Giles F. Filley Memorial Awards

As a result of a bequest from the family of Giles F. Filley, a memorial fund was established in 1993 to recognize excellence in respiratory physiology and medicine. Two annual awards of \$20,000

are made to investigators who hold an academic rank no higher than assistant professor and are pursuing research in respiratory physiology and medicine. Awards are made to APS members working in the United States, who have demonstrated outstanding promise based on their research program. Zucker presented the 2009 Giles F. Filley Memorial Awards to David Irwin, Univ. of Colorado, and Karen Ridge, Northwestern Univ.

F. Lazaro J. Mandel Young Investigator Award

As a result of a bequest from the wife of Lazaro J. Mandel, a memorial fund was established in 1999 to recognize excellence in epithelial or renal physiology. An annual award is made to an investigator who holds an academic rank no higher than assistant professor and is pursuing research in epithelial or renal physiology. An award is made to an APS member who has demonstrated outstanding promise based on his or her research program. Each award is for \$7,500 and is designated for the use of the awardee in his/her research program. Zucker presented the 2009 Mandel Award to Kenneth Hallows, Univ. of Pittsburgh.

G. Shih-Chun Wang Young Investigator Award

As a result of a bequest from the wife



APS President Irving Zucker presents Karen Ridge and David Irwin with the Giles F. Filley Memorial Awards.

of Shih-Chun Wang, a memorial fund was established in 1998 to recognize excellence in physiology. An annual award is made to an investigator who holds an academic rank no higher than assistant professor and is pursuing research in physiology. An award is made to an APS member who has demonstrated outstanding promise based on his or her research program. Each award is for \$7,000 and is designated for the use of the awardee in his/her research program. Zucker presented the 2009 Shih-Chun Wang Young Investigator Award to Paul Fadel, Univ. of Missouri.

H. Arthur C. Guyton Young Investigator Award

The Arthur C. Guyton Award Fund was established in 1993 to recognize the contributions of Arthur C. Guyton and his interests in feedback, modeling, and integrative physiology. The awards are made to independent investigators working in the United States, who hold an academic rank no higher than



APS President Irving Zucker presents the Lazaro J. Mandel Young Investigator Award to Kenneth Hallows.



APS President Irving Zucker presents the Shih-Chun Wang Young Investigator Award to Paul Fadel.



APS President Irving Zucker presents Kevin Hall the Arthur C. Guyton Young Investigator Award.



Liaison with Industry Committee Chair Craig Plato, along with APS President Irving Zucker (second from right) present Liaison with Industry Committee Awards to Novel Disease Model Awardee (Graduate Student) Manoj Bhaskaran; and Novel Disease Model Award (Postdoctoral Fellow) Mauricio Sendeski.

assistant professor, and are pursuing research that utilizes integrative approaches to the study of physiological function and explores the role of feedback regulation in physiological function. Each award is for approximately \$15,000 and is designated for the use of the awardee in his/her research program. Zucker presented the 2009 Arthur C. Guyton Young Investigator Award to Kevin D. Hall, NIDDK, NIH.

I. International Early Career Physiologist Travel Awards

The International Early Career Physiologist Travel Award program was established in 2008 for graduate students, postdoctoral fellows and junior faculty members who work outside the United States. The intent of this award is to assist with travel expenses that international early career physiologists incur in attending the Experimental Biology meeting in order to present their work.

This year APS is pleased to present eight International Early Career Physiologist Travel Awards: Anja Bondke, Chairte—Universitätsmedizin, Berlin; Darren DeLorey, Univ. of Alberta, Edmonton; James Fisher, Univ. of Birmingham, UK; Angelina Fong, Univ. of British Columbia, Vancouver; Libor Kopkan, Institute for Clinical & Experimental Medicine, Prague; Daniela Sartor, Univ. of Melbourne, Australia; Lauro Vianna, Gama Filho Univ., Rio de Janeiro; and Stephanie Wolffe, Australian National Univ., Canberra.

J. Liaison with Industry Committee Awards

The Liaison with Industry Awards are given for the best abstract describing a novel disease model. Zucker and Committee Chair Craig Plato presented the 2009 Liaison with Industry Awards to Mauricio Sendeski, Charité Universitätsmedizin Berlin and

Manoj Bhaskaran, Oklahoma State Univ.

K. David S. Bruce Awards

The annual David S. Bruce Awards for Excellence in Undergraduate Research were granted to seven currently enrolled undergraduate students who are first authors on a poster presented at the EB meeting. Each receives a cash award of \$500. This year's awardees are Jeffrey Becker, Univ. of California, Davis; Sumit Kar, Creighton Univ.; Yen Nguyen, Univ. of California, Davis; Jessica Ortega, Univ. of Florida; Brian Prall, Radford Univ.; Kathleen Quinn, McMaster Univ.; and Jessica Slutzky, Nationwide Children's Hospital.

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

Thirty-two awards were made possible



APS President Irving Zucker (left) and Ida Llewellyn-Smith (right), Chair of the APS International Physiology Committee, present the International Early Career Physiologist Travel Awards.



Peter Horvath (left), son of Steven M. Horvath, along with APS President Irving Zucker (right), present Gustavo R. Ares and Laura Cristina Semprun-Prieto, the Steven M. Horvath Professional Opportunity Awards.

by the bequests of Caroline tum Suden and Frances Hellebrandt, who were long-time members of the Society. Awards are open to graduate students or postdoctoral fellows who have first-author abstracts and present papers at the EB meeting. Recipients receive a \$500 check and paid registration. Jane Reckelhoff, Chair of the Women in Physiology Committee, presented the awards.

In addition, two special awards to the top two under-represented minority awardees were made possible by a bequest of the family of Steven M. Horvath, a long-time APS member. Peter Horvath, son of Steven M. Horvath, presented the awards.

M. Minority Travel Fellowships

The Minority Travel Fellowship Award program was established in

1987 for minority physiologists, and is open to advanced undergraduate, predoctoral, and postdoctoral students, who have obtained their undergraduate education in Minority Biomedical Research Programs (MBRP) and

MARC-eligible institutions, as well as students in the APS Porter Physiology Development

Program. Minority faculty members at the above institutions may also apply. Funds are provided for travel and per diem to attend the annual spring meeting. This program is supported by the NIDDK and the NIGMS. The intent of this award is to increase participation of pre- and postdoctoral minority students in physiological sciences. Zucker announced that 40 Minority Travel Fellowship awards were presented to students to help them attend the Experimental Biology 2009 meeting.

N. Porter Travel Fellows Award

The Porter Physiological Development Awards are designed to support the training of talented students entering careers in physiology by providing pre-doctoral fellowships for underrepresented students. Frank said that the APS has a long standing interest in

promoting the training of minority students as evidenced by these awards. Each award includes an \$18,000 stipend. This year's recipients are: Dolores F. Doane, Univ. of Illinois at Urbana-Champaign; Heidy L. Contreras, Univ. of California, Irvine; Natasha Lugo-Escobar, Univ. of Puerto Rico Medical Sciences Campus; Miren J. Maiz, Univ. of California, Los Angeles; Keisa W. Mathis, LSU Health Sciences Center; and Zeliann Rivera, Univ. of Arizona.

O. Undergraduate Summer Research Fellowships

In 2000, the APS Council approved funds to develop and support summer research fellowships for undergraduate students. The program was initiated in recognition of the importance of undergraduate research experience leading to a career in physiology research. These fellowships support full-time undergraduate students to work in the laboratory of an established physiologist. The 2008 recipients, who are presenting their research at EB 2009, are: Khadijeh Alnajjar, Wright State Univ.; Lindsay Ambur, Univ. of South Dakota; Konstantin I. Bakhurin, Univ. of Michigan; Kristen Berberich, College of William & Mary; Thomas J. DiStasio, Syracuse Univ.; Nelly M. Estrada, Univ. of Texas at Brownsville; Stephanie N. Giammalvo, Univ. of Florida; Kyle E. Horst, College of William and Mary;



APS President Irving Zucker presents Chet Ray, outgoing Chair of the Neural Control and Autonomic Regulation Section, with a certificate of appreciation.



APS President Irving Zucker presents Chris Cheeseman, outgoing Chair of the Gastrointestinal and Liver Physiology Section with a certificate of appreciation.



APS President Irving Zucker presents David Brooks, outgoing Chair of the Water and Electrolyte Homestasis Section with a certificate of appreciation.



APS President Irving Zucker presents Peter Wagner, outgoing Finance Committee Chair, with a certificate of appreciation.

Sumit Kar, Creighton Univ.; Dan O. Kechele, Univ. of Michigan; Missia E. Kohler, Univ. of Georgia; Julie K. Kretzer, Univ. of Kentucky; Lindsay LaPresto, Univ. of Arizona; Elizabeth J. Luger, Univ. of North Dakota; Andrew MacMillan, Ohio State Univ.; Elizabeth G. McAndrew, Univ. of New England; Sarah M. McCurdy, St. Mary's Univ.; Jessica A. Ortega, Univ. of Florida; Krupa V. Parikh, Univ. of Cincinnati; Michael S. Park, Emory Univ.; Julie A. Spond, Colorado State Univ.; Christopher D. Swenson, Univ. of Michigan; Gabriela G. Timoney, Univ. of Richmond; Kevin J. Yavorcik, Univ. of Pittsburgh.

P. Bodil Schmidt-Nielsen Distinguished Mentor Award

The Bodil M. Schmidt-Nielsen Distinguished



APS President Irving Zucker presents Dee Silverthorn, outgoing Councillor, with a certificate of appreciation.

gished Mentor and Scientist Award honors a member of the Society who is judged to have made outstanding contributions to physiological research and demonstrated dedication and commitment to excellence in training of young physiologists. The award was established to recognize Bodil M. Schmidt-Nielsen, the first woman President of the Society and a distinguished physiologist who has made significant contributions in her field. The recipient of the 2009 Bodil Schmidt-Nielsen Award is Brian Duling, Univ. of Virginia Health Sciences Center. He was formally recognized as the recipient of this Award at a ceremony held earlier in the week.

Q. Recognition of Outgoing Section Chairs

Christopher Cheeseman, Chair of



APS President Irving Zucker presents J. Michael Wyss, outgoing Councillor, with a certificate of appreciation.

the Gastrointestinal and Liver Physiology Section, Chet Ray, Chair of the Neural Control and Autonomic Regulation Section, and David Brooks, Chair of the Water and Electrolyte Homeostasis Section, complete their terms at the close of the EB09 meeting. Zucker thanked them for their service to their sections and to APS.

R. Recognition of Outgoing Committee Chairs

Zucker recognized the outgoing committee chairs and thanked them for their service to the APS. The outgoing chairs are Angela Grippo, Chair of the Trainee Advisory Committee, and Peter Wagner, Chair of the Finance Committee.



APS President Irving Zucker presents a plaque to Hannah Carey, APS Past President.



Back row: James Schafer, Walter Boron, Peter Wagner, John West, Barbara Horwitz, John Williams, Doug Eaton, and Leonard Jefferson. Front row: William Dantzler, Shu Chien, Hannah Carey, Gary Sieck, Irving Zucker, L. Gabriel Navar, D. Neil Granger, Allen Cowley, Jr.

S. Recognition of Outgoing Councillors

Councillors James Hicks, Dee Silverthorn, and J. Michael Wyss will complete their terms at the close of this meeting. Zucker thanked them for their service to the Society.

Zucker thanked the past presidents who he said were an inspiration to him. Zucker thanked the APS staff for their dedication and professionalism during the past year. He also thanked Executive Director Marty Frank for his dedication and friendship.

Hannah Carey was recognized for her service as APS President. Zucker said that "Hannah has done an unbelievable job as president." He thanked her for being a friend and "showing him the ropes," and hopes that "the idea of One Physiology comes to fruition."

T. New Business

No new business.



Past President Hannah Carey presents Ann Schreihof with the Bowditch Award.



APS President Irving Zucker presents Francois M. Abboud with the Cannon Award.

VII. Passing of the Gavel

Zucker then passed the gavel to **Gary C. Sieck**, Mayo Clinic College of Medicine, in-coming President of the American Physiological Society. Sieck accepted that gavel saying that he wanted to "thank Irv for his untiring dedication to the society this year."

There being no new business, the meeting was adjourned at 7:07 PM, April 21, 2009. ❖

*Gary C. Sieck
President-Elect*



APS Council: Back row: Thomas Pressley, Gordon Mitchell, Linda Samuelson, J. Michael Wyss, Usha Raj, Barbara Goodman, David Brooks, Joey Granger, Kim Barrett, Michael Portman, William Talman, Ron Lynch. Front row: Pam Carmines, Curt Sigmund, Peter Wagner, Gary Sieck, Irving Zucker, Hannah Carey, David Pollock, Dee Silverthorn, Jeff Sands, Frank Powell. Seated in front: Martin Frank.



Section Advisory Committee: front row: Chris Cheeseman, Michael Sawka, David Brooks, Pamela Carmines, Chet Ray, John Cuppoletti, David Goldstein. Back row: Ann Schreihofner, Marilyn Merker, James Rose, William Galey, Jane Reckelhoff, William Welch, Pamela Lucchesi.

Schmidt-Nielsen Lecture

(continued from page 101)

someone didn't I? My wife, Marilyn, of course, was always part of the lab and she gave me the freedom and confidence to do the things that we did in the lab and mothered many of the trainees. In preparing this talk, I asked my wife and three girls how I did as a mentor-parent. I won't give you a full report but I guess you could say that I got a good solid B or maybe a B+. What I can tell you is that their trials and tribulations taught me much more than I taught them. I learned and re-learned the hard lesson that in teaching, as in so many parts of being human, "things take time," and I learned that people need both space and time to learn. Moreover, I learned that people learn at their own rate, no matter what I plan; as Bob Gore, one of my closest confidants taught me: "When the student is ready, the teacher will come." As I learned from my trainees, when the teacher comes too early, frustration often arrives on the same train.

I must say that I never really thought of myself as a mentor in the sense that it is so often used today. Rather, I thought of myself as a lab leader and, as the title of the talk indicates, as someone who had the great pleasure of work-

ing with a new set of ever-younger collaborators each year, the students and post-docs. There are now many, many books and papers on how to mentor and they are quite detailed in prescribing and proscribing the research environment, and how a mentor might interact with a mentee. The mentoring tomes that came across my desk often seem to me to be too focused on a set of rules for running a profit making organization, rather that operation of a place where a bunch of friends meet to play and study important things. My feeling in bringing in a new person to the lab was that I was looking for someone who was interested in what we do, and who wanted to come and work together on a problem for a while in the spirit of a comment made by Newton. "I do not know what I may appear to the world; but to myself I seem to have been only like a boy playing on the sea-shore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me" (Isaac Newton, 1642–1727). Thus, I don't have a formal presentation on how to mentor. Rather, what I'd like to do is reminisce a bit with the members of

Cimcon, and share some things that I think might be worth thinking about as one starts and runs a lab.

Finding a Project

Because joining the lab was pretty much a joint decision, the general direction for a project was usually decided before the fact. I recognized that the new trainee had an incredible amount to learn, had to do so in a short time, and that the good science had to follow the hard work of simply learning how to navigate in a new environment using a new language. I don't see science in the linear way that many do, in fact it seems to me that Werner von Braun got it right when he said, "Basic science is the science I'm doing when I don't know what I'm doing." I believe this, and I get a bit impatient with plans for research that involve developing a highly detailed set of research goals and objectives in advance. I suspect that all too often, if you know enough to write the ultimate set of goals and objectives, the problem might be pretty trivial. The mathematicians have a phrase for such things—after thinking—and I feel that the granting agencies are forcing us in a direction that



will cause more and more time to be wasted in this kind of activity.

So, the discussion of a research project for us is more open-ended and typically begins with a discussion of which general area of research the trainee might be interested in, and then we identify a small, starter project, often part of some bigger project or a follow-on from the work of a previous trainee. If all goes well, the small project is chosen, so that it demands that the necessary skills be learned, and at the same time it will allow room for growth. The student has to be given time to mature and to find their own way into "their" project, and perhaps even to a career if all goes well.

The thought process in approaching a project deserves a bit of discussion. Sometimes we get locked into the idea that a project should be a problem that demands a solution, and the solution is the aim of the project. However, it is equally important to recognize that the problem is the trigger or goad that leads to deep thinking, and ultimately, if we are serious, the thought leads us to a new perspective on the origins of the "problem." Occasionally, if we are lucky, we get drawn into some really new science. I have often heard students warned not to go off on a tangent, but at the same time it has to be remembered that, in the land of good science, tangents are sometimes where the gold lies.

My view of a student or postdoc

research project is also a bit different than is often the case, because I have always made a great effort to find independent projects for everyone. This has an enormously positive effect on things, because it prevents squabbling, and because it obviates issues with authorship and, most importantly, it fosters independence. In today's multidisciplinary research environment it is often impossible to find really independent projects, but the basic idea is not so much the project as the fact that the trainee learns early on to assume ultimate responsibility for the project. That means, no finger pointing and no excuses: your project is moving or it isn't.

If the project is a collaborative one, we have to make sure that everyone in the lab understands that in a collaboration, it is not adequate to just shrug off a methodological question as someone else's responsibility. The trainee has to learn that, "die Methode ist alles," and he or she, as the director of the project, must assume responsibility for the whole thing. I recognize that in much current biological science, several experts combine to carry out a project and this can easily lead to conflict and misunderstanding. Though it pains me to think about it, it may be vital in a world of complex, joint projects that authorship, timeline, and responsibilities are laid out with the trainee and collaborators, in advance, in writing!

Lab Operations and Rules

So, having a starter project, one of the tasks before the student is to simply learn how the lab operates. Of course, this means immediate immersion in the relevant literature, and such mundane things as: where the reagents are stored, how to talk to the lab manager, and in my old fashioned view, he or she has to learn how any machine being used actually works, and how to test, and calibrate it. How a pH meter works, how one sets up a microscope for Koeller illumination, and how the lab water system operates; all determine the outcome of even the best experimental designs, and these "trivial details" are too often ignored. I have the feeling that details of lab operation can too easily be minimized, especially as we get more and more kits, and the company tech reps spend more and more time "setting up and calibrating the equipment." The result is that the ability to trouble-shoot is diminishing, and it can become more difficult for a new trainee to recognize

that the data look that way because of what the machine is doing wrong, not what the biology is saying.

One vital part of the introduction to the lab is the notebook. I have found recently as a result of service on the University Ethics Committee that many trainees are not being taught to use and depend on a lab notebook, and virtually none is instructed in how to acquire, store, and present data from the multiple sources that commonly contribute to today's projects. We all need lab notebooks and it is the mentor's job to check the notebooks occasionally and to look at the original data, not the distilled material presented in a PowerPoint show in lab meeting.

I tend to run a pretty relaxed operation in terms of individual behavior, but I think it's important to identify some absolute limits that are just not transgressed. The idea has to be constantly reinforced that certain rules are rules, and they allow no room for the trainee marching to the "beat of a different drummer," for if the rules aren't followed the best case is that the experiment may fail, and the worst case is that a complicated, joint effort fails. The shared equipment has to be taken care of. The space of each lab member has to be respected. Computers have to be backed up. Messes have to be cleaned up, and, no loud and obnoxious music in the lab. Here, I'd like to say something about work patterns and hours but that is so controversial these days that I'll settle for a quote from Gustave Flaubert that I recently ran across: "Be regular and orderly in your life so that you may be violent and original in your work." I'll leave the definition of regular and orderly to the reader.

It helps enormously to have a strong daily presence in the lab to work with the trainees on these "mundane" issues, someone who commands respect and who knows both the what and the why of the lab. In my very fortunate case, David Damon trained just exactly as many students and post-docs as I did, and later Kathleen Day who not only did the training but brought a whole new batch of skills to the lab.

Lab Meetings

Perhaps as important as anything I can think of with regard to mentoring is to hold regular lab meetings, and to elevate them to a central part of the lab activities. These contribute to both the scientific and social life of the lab. The

lab meetings must be regular, and the PI must always be there, as a demonstration to the lab members that the meetings are important and that they take precedence over all the other demands on our time. Not only is everyone expected to attend, but also material has to be prepared in advance and presented in a formal way. Failure to follow this rule should lead to embarrassment at the least. The technicians and lab managers should be an integral part of the meetings, because this is the place where bad practices in the lab are uncovered, and where the trainees learn the value of the technical staff.

The lab meetings are where the mentee will learn to give and take in the world of science, and every meeting is a time to hone presentation skills and to sharpen thinking. The form of the meetings must change from time to time or they will become routine and lose their edge. My own lab meetings consist of lab progress reports, reading papers in the literature, reviewing manuscripts and grants, and preparation for scientific

meetings. I was surprised recently to find that I have copies of material handed out at the lab meetings that go back to 1982! It's worth noting that when we went to PowerPoint presentations I failed to make a similar system for storing the presentations, and I urge all of you to fig-

confrontational at times. I know that is not the style currently but confrontation is one part of scientific life, and being prepared for it at home is much easier than learning in public. I once asked a trainee if she was fearful of presenting at Experimental Biology and

"I learned and re-learned the hard lesson that in teaching, as in so many parts of being human, 'things take time,' and I learned that people need both space and time to learn."

ure out a way to systematically collect and file lab meetings in a digital era as they are great fun to look back over.

The presentations in lab meetings have to be critiqued and critiqued hard. This is where the respect for preparation, truth, and the ability to think on one's feet are learned. Both mentor and mentee must be prepared to challenge and be challenged in lab meetings, and the lab meetings should even be a bit

she looked a bit surprised and asked "Why would I be? If I can get through one of our lab meetings, there is nothing to fear from EB."

At the lab meetings I try to minimize my own thoughts, except where things seem to be especially beautiful, or going badly astray. I try to spend less time in answering questions, and more in framing the problem and defining directions. A direct answer to a specific question

Duling Receives Schmidt-Nielsen Distinguished Mentor and Scientist Award

The APS Women in Physiology Committee hosted a reception at Experimental Biology 2009 to honor Brian R. Duling, Robert M. Berne Professor of Cardiovascular Research Center, Departments of Molecular Physiology and Biological Physics and Biomedical Engineering, University of Virginia Health Sciences Center, who was selected as the sixth recipient of the Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Award.

More than 100 trainees, EB awardees, and colleagues gathered to celebrate the award and hear Duling's award lecture entitled, Mentoring: A Fun, Collaborative Activity. The talk is published in this issue of *The Physiologist* and posted on the APS Mentoring web site (<http://www.the-aps.org/career>). Tara Haas (York University), who coordinated the nomination of Duling for the award, was present to introduce him. The award was presented to Duling by Jane F. Reckelhoff, Chair of the Women in Physiology Committee; and Irving H. Zucker, President of the APS.

Duling received his PhD at the University of Iowa. He did his postdoctoral training at the University of Virginia School of Medicine before

being hired as an Instructor and then Assistant Professor in the Department of Physiology. He moved up through the ranks, including terms as Vice-Chair and Acting Chair of the Department, until being named the Robert M. Berne Chair in Cardiovascular Research in 1992 and then Director of the Cardiovascular Research Center in 1993. He continues to hold those positions today, in addition to acting as Interim Associate Dean for Graduate Studies in the School of Medicine.

Duling has successfully mentored 35 postdoctoral fellows, three clinical fellows, and seven predoctoral students. His mentees have gone on to successful and prominent positions (including two chairs, Senior Vice President, Chief Medical Officer, and NIH Program Officer, among others) in a variety of careers: academia, industry, clinical centers, and government with national funding and numerous awards among themselves.

Duling's success as a mentor was fourfold, according to the people writing his supporting recommendation letters. 1) He provided excellent guidance to trainees holding a range of career aspirations. He gave equal attention to trainees who desired to follow in his

career footsteps and to those who aspired to an different career path. By spending the time to understand his trainees' career goals, Duling took steps to best facilitate each trainee's future success. 2) He constantly demanded the best of his trainees. He stimulated individuals to work harder and think deeper than they thought possible. 3) Through his enthusiasm in hosting visits from national/international scientists, Duling illustrated to his trainees that science transcends geographical boundaries and that colleagues can become lifelong friends in the journey of scientific discovery. This led to a great diversity in individual strengths of the researchers in his lab and generated a strong international "spirit" within the lab. 4) He engendered an air of "family" with members of his lab. He maintains continued contact with previous lab members by holding an annual Duling lab dinner at the yearly EB conference.

APS members are encouraged to nominate members for the 2010 Bodil Schmidt-Nielsen Award. For more information, see the APS website (<http://www.the-aps.org/awards/society/schmidt-nielsen.htm>). Application deadline is September 15, 2009. ❖

makes it easy to move on but lets the trainee off the hook and has inherent in it all the mentor's biases. This refusal to answer questions is sometimes incredibly frustrating to the trainee facing a deadline but I believe it is vital to their growth, and often will draw out another lab member's thinking. I, of course, moderate the meetings to some extent, and try to get the presenter to extend their thinking and to push back when someone is pressing too hard; criticism

becomes the place where the real mind work gets done. This is the time for you to think together with your younger colleagues—it's a time when you get to know him or her and they get to know you. To me it's like dancing or even better, jazz. Two people focused on something important to both, one leading and one following, and then the leader and follower change places. A part that I especially like is that, when it works, the discussion and interaction are intense

and a bit ill at ease in presenting it for scrutiny. Here is where trust must exist, as it is the responsibility of the mentor to both review the manuscript, with as much scientific rigor as possible, and to edit the prose. I sometimes call the process "killing the babies," as that is almost the feeling that the trainee has. I learned from my daughters that if I give myself free reign in the process, it is discouraging, and it is just too much to endure. Only after a lot of trial and error did they come up with the idea of "just as much editing as needed for this round," i.e., give me a level 1, 2, or 3 level critique. One can begin with some thoughts on the strength of the work, and then some comments on structure and perhaps some thoughts on order of presentation. This is enough to start another draft. The two of you can then go through an evolutionary process where parts of the manuscripts are getting better as the others are getting adjusted or completely re-written.

The beauty of the process is that both the mentor and the mentee are learning all the time and it's not just the English that's getting better, it's the science, and from the process new experiments often emerge. In the middle of one of these interactions, I once came running out of the office waving a manuscript and emoting to the poor post-doc how great it was now. With typical understatement for him, the fellow said "Well, I supposed you would like it; you wrote it." Ultimately, the grinding work begins and the red pen goes to work in earnest, dealing with the fine details. Once, at the end of this phase of the process, I dropped off a manuscript with a student as I went out of town for a while, and in a few days I received a Federal Express package containing nothing but a nice, new red pen.

The process is sometimes painful for both parties but essential, and even when this part is done, the manuscript should be passed on to another reader. Hopefully, he or she won't undo most of what the wise mentor has suggested!

Open Door

Keep an open door for the lab members, and make sure everyone in the lab knows the meaning of it: if you need me I am here; you are all important, and we are working together on these projects, and probably I am just working on politics anyway (see below). The open door should swing both ways. Stop at the bench of everyone in the lab as often as

"Keep an open door for the lab members, and make everyone in the lab knows the meaning of it: if you need me I am here; you are all important, and we are working together on these projects..."

is OK, bullying is not. The lab meetings should be a time to challenge, challenge, challenge, but only in regard to the science, never the person or the idea.

Some lessons learned at good lab meetings:

distrust your own data more than you distrust the data of others;

your data are your responsibility in every way;

what we are doing here is more than making papers; we are trying to find truth;

never get angry, or at least don't show it: keep thinking;

be ready and enthusiastic to receive the suggestions of others, even when it means a lot of work.

To paraphrase the Newton quote mentioned above, in the lab meeting you should learn that every shiny thing you pick up at the sea-shore of science is not a treasure—there will be some rotten fish as well.

The White-Board Sessions

After a lab meeting I often have a follow up in the form of a one-on-one "debriefing" at the white board, usually with the presenter, but not always. Here is where the real excitement for the mentor occurs. These might take different forms: helping to solve a technical problem that applied specifically to the trainee's project, trying to think more deeply about an unresolved equation, and yes, occasionally discussion of a job poorly done. I try never to use the time in lab meeting itself for criticism of anything but the science.

Most often the white-board discussion

and often so consuming that when we finish, neither mentee nor mentor can even be sure whose idea the outcome is.

Two particular events that I recall might emphasize the point. I had been working for many years on a problem that just wouldn't yield a reasonable solution—the glycocalyx for those of you who followed that odyssey. After many years and many trainees, a post-doc and I got to a place where we seemed to have finally discovered an approach that could move us forward, and with a sense of great frustration and, honestly, me close to tears, I fell into my chair and told him that I didn't care what the outcome was; prove the hypothesis or disprove it, but don't make me think about it anymore. He did as asked.

Another memorable white board meeting followed a presentation that showed pretty clearly that a project that a post-doc and I had been working on for a long time had just come to a completely dead end. We spent several hours together, first allowing ourselves to abandon what we had been doing, and then thinking of the next move, and that discussion resulted in several years of some of the most exciting work I have had in the lab.

Review of Drafts of Written Work

One of the most important parts of the work that mentors do is to review and critique written work. The students and post-docs enter the process with hugely diverse levels of training in writing and analysis, and by the time the mentor gets a manuscript, the trainee will have put heart and soul into the work, and will likely both be in love with the cre-

you can, even if you are not doing the bench work yourself. You will see their work habits and it will help you to understand the problems that they confront.

Politics and Sociology

The mentor's influence on the mentee's perception of this aspect of our work is critical. Trainees must be taught that politics and people skills are part of a scientist's life and they have to be warned that politics is real, and will determine parts of their future. At the same time, the trainee has to see that the science is the goal that will stand up over time. Thus, it's important to emphasize and re-emphasize that one must maintain a clear distinction between what is the science and what is the politics. As with everything, mentees will differ hugely in their ability and interest in people-things (i.e., politics). I find that many of the current generation of students are more receptive to politics than previously, though they are likely to call it networking. Some trainees will find it easy to work with others, both on science and politics; many will be frightened, and some will be put off by even the idea that politics could be critical to their science. The mentor's job is to allow each the latitude to express their feelings and, at the same time, to encourage them to find their own way. I have often shared the idea of "Quintons" with trainees, an idea that I made up to reflect the fact that there is an emotional cost to doing both science and politics and the coin of the realm we called Quintons. An important part of the thinking is that the Quinton cost per activity is different for different people. Some people find the politics painless and for some it is exquisite pain. Ultimately, your energy (i.e., Quintons) is all that you have, and it is your decision as to whether you use it for politics or science. So, recognize that some energy has to be used on both science and politics, and be sure that you put your energy where it will do you the most good.

The Rat Race

As much as you possibly can, keep the lab and the trainees out of the rat race, but help them to learn how to cope with it as their careers develop. We are all under great pressure to publish as much as we can, to get as many grants submitted as possible, to present large numbers of abstracts, and to implement the next

new technique as quickly as we can find the money for it. At times speed is necessary but it easily becomes a way of life, a treadmill. Some advance thought and planning about it may alleviate some of the pressures. If you submit a grant, do it with the idea that you are expecting to get it. If you just throw them out the door at the study section, that will be reflected in the product and the funding likelihood will decrease. There is an old story about duck hunting that is relevant. It turns out that if you are looking up at a flock of ducks and just pull the trigger, you will never get a duck. On the other hand, if you take careful aim, you may get one. With your grant and paper submissions, take aim and act and feel as though you will get the grant or have the paper accepted, no matter what.

Don't try to publish little "throw away" papers just to get the finding out there or to pad the CV a bit. Do the cost accounting and I think you will find that it costs an amazing amount of money. I estimated several years ago that a four-page paper might cost \$50,000 in real dollars, if you add in technical time, your hourly wage, and the cost of a trainee's time. More important is the amount of your time that will ultimately be spent with galleys, etc., and realistically, a throw-away won't get you many points with whomever is counting. Publish what you think will contribute and make it as good as you can. Save what won't contribute today until there is a place for it tomorrow.

With things like the Federal Incentive money on the horizon, a request for a new gadget is almost irresistible. A new device in the lab often offers some new advantage, but at the same time, it will require care and maintenance. What exactly are you expecting to get from the device, and do you really need

the data that might come from obtaining it?

On a related side note, there is the tendency to have large numbers of projects going at once for "safety." This is especially common, and especially risky for a trainee. Some of this is probably necessary but do not forget that a good project is a demanding one. The old adage, "Problems worthy of attack, prove their worth by fighting back," (Piet Hein) applies here. I still think that it's worthwhile to start with a small problem and let it seek its own direction to a big problem, and hopefully to a life-long pursuit.

Think hard about your collaborations. Do you really need what the collaboration offers? Will both your research project and that of the collaborator gain in the association? Every interaction takes time and Quintons from both you and your collaborator. Any serious collaboration involves hours of discussion and the possible project outcome should be worth the time invested. Collaboration for the sake of collaboration is rarely worth it.

Do not get seduced into too many committees. With these being a great ego boost and also a real part of an academic CV, it is all too easy to say yes when invited. I think a good rule is to first see if you have "enough committees" on your CV, and then ask whether the service on this or that committee is likely to take advantage of your skills and give you information you need for your career?



APS President Irving Zucker presents Brian Duling with the Bodil Schmidt-Nielsen Distinguished Mentor Award, along with Tara Haas, who nominated Brian and was one of his mentees, and Jane Reckelhoff, chair of the APS Women's Committee.

I just want to touch briefly on the dreaded subject of Career. I needn't spend much time here as all the mentoring books go on and on with all the fine details of building a career. I think it's worth adding a bit of idealism to all the current discussion, however. A researcher in the biomedical sciences, particularly Physiology has a golden opportunity, especially now. If you find your way to a good teaching or research position, you have available equipment and ideas that were undreamed of even 20 years ago. We have an enormous database of information collected during the current discovery phase of research that is just looking for someone with the training to assemble the pieces into a coherent whole. The people who will do this will fundamentally change biology and medicine and they are the young physiologists in training today. If you think you want to stay in it for the challenge and the science, you can now do so in academics, government, or industry and have someone pay you for finding those pebbles and shells and getting all the joy that goes along with it.

Respect

For the mentoring process to work well it is vital that both mentor and mentee respect one another. Lack of respect gets translated into distrust, and then anger, and the problem goes to counseling, not mentoring. It took me a while to understand that respect implies the recognition of differences. Where the science is concerned there is no latitude; it has to be as good as possible. However, that doesn't mean that everyone gets to good science by the same path. A part of good mentoring is to be able to recognize that the trainees will attack problems differently. One has to be sensitive to the fact that people have different ways of working and allow them to express their individuality. Some will have to be alone and quiet, some have to sing or whistle while they work, some are slobs and some are neat-nicks. Some of the trainees will want you to provide constant guidance and approval. Some will be in the office

hourly to tell you what is going on, and some will have to have the knowledge that they have gained dragged out of them. Some need very badly to confront everyone, including you, and want to argue and fight and some are crushed by confrontation.

The job of the mentor is to try to tell the differences, and where possible, allow the trainee full expression, so the trainee can find his or her own way of working once they leave the lab. If you insist that the trainee "follow in your foot-steps," when you are not there it may be very hard to keep going. By the way, that includes career path. Many good trainees will wind up doing much different things than you do and be in academics, industry, and administration and if you and they are lucky and have worked hard at the training process that training will work in many venues.

Race, and gender differences are a subject of great discussion in mentoring manuals, and are, to some extent, inescapable. We have to all recognize that they are there and be ready to deal with them directly or not. These can be subtle and all of us have to learn not just the big things but the little ones as well. I tried to ask people who were leaving the lab how the experience had been and whether there were bothersome things that occurred of any kind, including race and gender. I asked one young woman such a question, and after a bit of hesitation she allowed that there had been one problem, in that I always asked my male technician to do the soldering and she was perfectly capable of doing it herself. So much for unconscious bias.

Regardless, of differences in perception, ability, or behavior, everyone in the lab gets the same respect, and that just has to be true. The mentor has to keep trying to learn to work differently with different people. Favoritism or negativism is incredibly destructive. Thus, the mentor will have to adapt to diverse styles, but everyone gets subjected to the same rigor in the inspection and analysis of the data and the presentation of the science. Ultimately, differing abilities or characteristics just don't count;

it's the science that counts and everyone has to learn their own path.

Thoughts of the Past and for the Future

So let me close this with two things. First, I'd like to make an apology to my lab mates for the things that I know I didn't do well enough and second summarize some thoughts for the future.

I'm sorry that I:

too often emphasized criticism and didn't give enough encouragement.

sometimes didn't sell all the post-docs and graduate students hard enough to the outside world.

failed to heed the old adage "Listen or your tongue will make you deaf."

got angry way too often.

I am, however, joyous that we did some things together pretty well. I thank you, and I encourage you to continue to:

pick a big problem;

follow the science where it leads you;

get grants only to do the science that excites you;

work on the hard parts of a problem (but don't tell the study section until they are mostly done);

develop new methods necessary to answer a question, not because they are cool. Cool is good however;

publish only as often as your data warrant;

when you get to the end of a problem let it go;

always tell the truth, especially to yourself;

give your imagination and emotions full range. Judge and respond after;

be more skeptical of your own data than the other person's;

remember that everything we do is not good or successful. Do not be afraid to be wrong;

have as much fun as possible;

Climb trees whenever you can, and sing or whistle a lot.

Finally remember:

"What lies behind us, and what lies before us, are small matters compared to what lies within us" (Emerson). ❖

Graduate Students and Postdoctoral Fellows Receive Caroline tum Suden/Hellebrandt/Horvath Professional Opportunity Awards

Graduate students and postdoctoral fellows who were first authors on an abstract submitted to Experimental Biology 2009 in New Orleans, LA were eligible to apply for the Caroline tum Suden/Frances A. Hellebrandt Professional Opportunity Award. A fund established to honor the memory of Steven M. Horvath, a distinguished APS member, will be used to provide support for the top two underrepresented minority awardees.

The APS Women in Physiology Committee chaired by Jane F. Reckelhoff, at the Univ. of Mississippi Medical Center, selected 34 awardees from a pool of 89 applicants. Applicants were required to be APS members (either student or regular) and, for the first time, could not have won the award previously as a graduate student if currently a graduate student or as a postdoctoral fellow if currently a postdoctoral fellow. Applicants were chosen based on the quality and novelty of their abstracts, and letters written by the candidates describing their career goals, research, and why they were particularly deserving of the award. Each awardee received \$500, a certificate of recognition, and complimentary registration for the EB 2009 meeting.

Awards were presented during the APS Business Meeting. Awardees were:

*Gustavo R. Ares, Henry Ford Hospital
Catharine Grace Clark, Univ. of Missouri-Columbia
Sarah C. Clayton, Univ. of Nebraska Medical Center
Patrick M. Cowley, Syracuse Univ.
Kyle J. Diehl, Univ. of Colorado
John H. Dubinion, Univ. of Mississippi Medical Center
Kathryn M. Dunn, Univ. of Vermont College of Medicine
Yumei Feng, Louisiana State Univ. Health Sciences Center
Carly Gordon, York Univ.
TanYa Marie Gwathmey, Wake Forest Univ. School of Medicine
Areum Kim, Univ. of Missouri
Paulina Monika Kowalewska, McMaster Univ.
Matthew Paul Krause, York Univ.
Ivana Yih-Tsue Kuo, Australian National Univ.
James Andrew Lang, Penn State Univ.
Johnathan Edward Lawrence, Michigan Technological Univ.
Matthew W. Maready, Univ. of Mississippi Medical Center
Keisa Williams Mathis, Louisiana State Univ. Health Sciences Center

Karl Dean Pendergrass, Wake Forest Univ.
Jesse Procknow, St. Louis Univ.
Mohamed Ahmed Saleh, Medical College of Georgia
Rajini Seevaratnam, York Univ.
Zachary M. Sellers, Univ. of Illinois at Urbana, Champaign
*Laura Cristina Semprun-Prieto, Tulane Univ. Health Sciences Center
Karin E. Shortreed, York Univ.
Ana Q. Silva, Medical College of Georgia
Alyson Korry Speakman, Weill Cornell Medical College
Meera Sridharan, St. Louis Univ. School of Medicine
Elizabeth Townsend, Mayo Clinic
Himani Vejjandla, West Virginia Univ.
Karla Kristine Vincent, Georgia Institute of Technology
Yan Wang, West Virginia Univ.
Nathan Weir, Wright State Univ.

**Steven M. Horvath Awardees*

For information about applying for the 2010 tum Suden/Hellebrandt Awards, see <http://www.the-aps.org/awards/student/TumSuden.htm>. ❖



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

Undergraduate Research Highlighted at Special EB Session

EB 2009 provided the setting for the sixth annual APS Undergraduate Poster Session. This special session highlights the contributions of undergraduate students to physiology research. Students present their poster at both their regularly scheduled poster session and the special Undergraduate Poster Session. This year it was held on Sunday afternoon and culminated with the presentation of the David S. Bruce Awards.

Of the 124 undergraduate first authors invited to present at the APS Undergraduate Poster Session, 84 accepted the invitation and took advantage of the opportunity to display their poster and present it to interested scientists and guests. The session not only provided undergraduate students with an opportunity to highlight their research but also to meet faculty from many graduate schools and medical schools to discuss their future plans. Approximately 200 APS members and guests were in attendance at the session, with many comments heard as to the high quality of research being presented by the students. The students and their research were highlighted again this year in a special printed program distributed during the session.

This is the fourth year that graduate departments were invited to sponsor the session and display promotional materials for their departments to those under-

graduates considering graduate school.

The following schools participated:

Univ. of Arizona, Physiological Sciences Graduate Interdisciplinary Program

Columbia Univ., College of Physicians & Surgeons, Department of Physiology & Cellular Biophysics

Dalhousie Univ., Halifax, Nova Scotia, Department of Physiology & Biophysics

Univ. of Florida, Department of Physiology and Functional Genomics

Univ. of Illinois, Department of Molecular & Integrative Physiology

Indiana Univ., School of Medicine, Cellular & Integrative Physiology

Louisiana State Univ., Health Sciences Center, New Orleans, Department of Physiology

Louisiana State Univ., Health Sciences Center, Department of Molecular & Cellular Physiology

Mayo Clinic College of Medicine, Physiology and Biomedical Engineering Graduate Program

Medical College of Georgia, Department of Physiology

Medical College of Wisconsin, Physiology

Michigan State Univ., Pharmacology & Toxicology

Univ. of Michigan, Molecular and Integrative Physiology

Univ. of Nebraska Medical Center, Cellular and Integrative Physiology

Pennsylvania State Univ., Huck Institutes of Life Sciences

Texas A&M Health Science Center, Baylor College of Dentistry

Texas Tech Univ., Health Sciences Center, Department of Cell Physiology and Molecular Biophysics

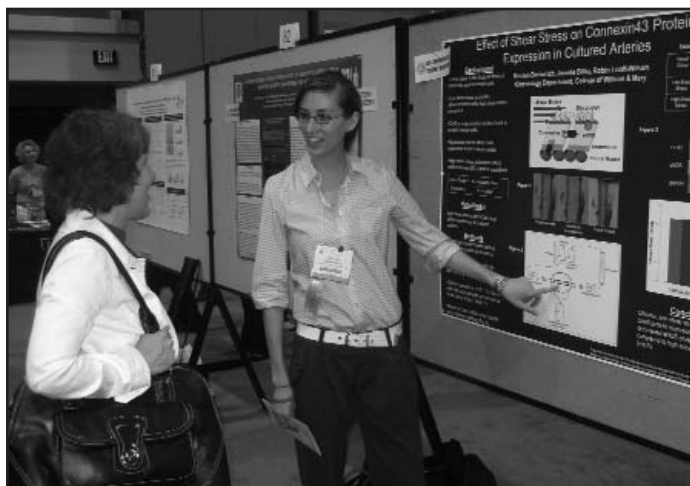
Tulane Univ. School of Medicine, Physiology Department

Virginia Commonwealth Univ., School of Medicine, Department of Physiology and Biophysics

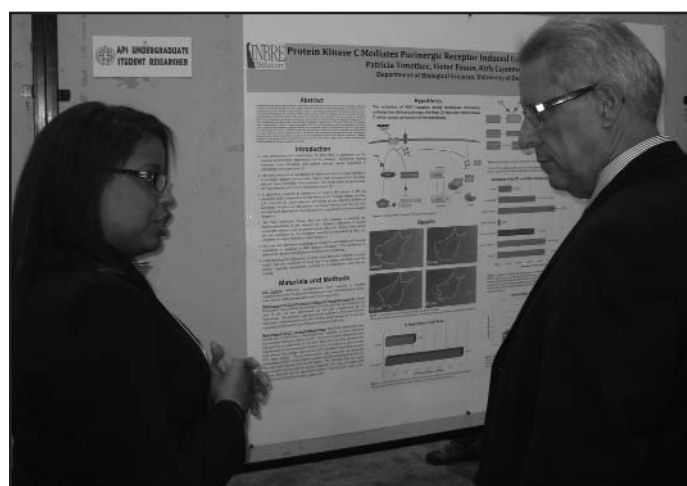
The departments also received a list of undergraduate presenters who indicated they were interested in being contacted about attending graduate school.

APS looks forward to hosting APS Undergraduate Poster Sessions at future Experimental Biology meetings and encourages undergraduate students doing research in physiology to submit abstracts for EB, apply for the David Bruce award, and attend the poster session in 2010.

Departments who are interested in sponsoring the 2010 Undergraduate Poster Session and displaying materials for their departments are encouraged to contact Melinda Lowy of the APS Education Office (mlowy@the-aps.org; 301-634-7787). ❖



An undergraduate student discusses research work with an APS member.



An undergraduate student explains her research to APS President Elect Gary Sieck.

Undergraduate Summer Research Fellows Attend EB

The 2008 Undergraduate Summer Research Fellows (UGSRFs) came to the 2009 Experimental Biology meeting held in New Orleans, LA to report on their research findings from last summer.

Twenty-three of the 24 UGSRFs attended the meeting. Twenty-three of the UGSRFs were authors on abstracts submitted to the meeting. Of those, 21 were first authors on their abstracts and two were second authors.

For the second year, all undergraduates who had first-author posters were invited to a special Undergraduate Orientation Session. The UGSRFs were joined by the 15 finalists for the David S. Bruce Awards for Excellence in Undergraduate Research, in addition to

approximately 30 other undergraduates for the session. Rolando E. Rumbaut, past committee member on behalf of Nancy McHugh Chair of the Career Opportunities in Physiology Committee, welcomed the undergraduates and introduced the UGSRFs. Thomas Pressley, Chair of the Education Committee, introduced the Bruce finalists and reminded the undergraduates about the special Undergraduate Poster Session on Sunday. Erica Wehrwein, Chair of the Trainee Advisory Committee, gave a presentation on attending a scientific meeting and how to get the most out of being there, both in terms of science and career talks as well as social activities. Zachary Sellers,

trainee member of the Careers Committee, gave a talk on poster presentations and hints for making that a positive experience. Members of the Trainee Advisory Committee attended the session and sat among the undergraduates to offer their own advice.

On Sunday, the UGSRFs participated in the APS Undergraduate Poster Session and presented their posters to APS members, in addition to their regularly scheduled scientific session.

Overall, the UGSRFs saw the EB meeting as being a very positive learning experience and appreciated the opportunity to come and present their research. ❖

CALL FOR NOMINATIONS

for the Editorship of the

American Journal of Physiology-Endocrinology and Metabolism

Nominations are invited for the Editorship of the *American Journal of Physiology-Endocrinology and Metabolism* to succeed Amira Klip, who will complete her term as Editor on June 30, 2010. The Publications Committee plans to interview candidates in the Fall of 2009.

Applications should be received before **August 15, 2009**.

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

Kim E. Barrett, Ph.D.
9650 Rockville Pike
Bethesda, MD 20814-3991

Undergraduate Students Receive David S. Bruce Awards for Excellence in Undergraduate Research

Undergraduate students who were first authors on an abstract submitted to Experimental Biology 2009 in New Orleans, LA were eligible to apply for the David S. Bruce Awards for Excellence in Undergraduate Research.

The award is named in honor of APS member David S. Bruce (1939 – 2000), who served as Chair of the APS Teaching Section and was a professor of physiology at Wheaton College from 1978-2000. Dr. Bruce was a dedicated physiology educator who had a particular interest in engaging undergraduate students in scientific research. Dr. Bruce not only encouraged and supported his students in participating in research, but he also regularly brought undergraduate students to the Experimental Biology meeting, often to present their research findings.

The APS Education Committee, chaired by Thomas Pressley, Texas Tech University Health Science Center, initially selected 15 finalists from a pool of 48 applicants. Finalists were chosen

based on the quality and novelty of their abstracts and letters written by the candidates describing their career goals, research, and why they were particularly deserving of the award. The 15 finalists were:

James F. Bardgett, Univ. of Kentucky
Jeffrey J. Becker, Univ. of California,
Davis

Antoinette S. Dawson, Tougaloo College
Kyle J. Diehl, Univ. of Colorado
Sumit Kar, Creighton Univ.

Lauren C. Knupp, Michigan State Univ.
Sarah M. McCurdy, St. Mary's Univ.

Yen H. Nguyen, Univ. of California, Davis
Jessica Ortega, Univ. of Florida

Aoi Otagiri, Univ. of Tsukuba, Japan
Brian C. Prall, Radford Univ.

Kathleen Quinn, McMaster Univ.

Jessica L. Slutzky, Nationwide
Children's Hosp.

Kevin J. Yavorcik, Univ. of Pittsburgh
Henok Yemane, St. Louis Univ.

These students then made oral presentations of their posters to a subcommittee of Education Committee mem-

bers and other APS members. Seven awardees were selected based on their knowledge of their research project. Each awardee received \$500 and a certificate of recognition. This year APS is pleased to receive additional support from Dr. Isis, her ScienceBlogs readers, and SEED Magazine for an outstanding female undergraduate award. Awards were presented by Hannah Carey, Past President, and Gary Sieck, President-elect, during a special APS Undergraduate Poster Session at EB 2009. The awardees were:

Jeffrey J. Becker,

Univ. of California, Davis
Sumit Kar, Creighton Univ.

Yen H. Nguyen, Univ. of California, Davis
Jessica Ortega, Univ. of Florida

Brian C. Prall, Radford Univ.

Kathleen Quinn, McMaster Univ.

Jessica L. Slutzky, Nationwide
Children's Hosp.

APS congratulates all these students on the quality of their research and presentations. ❖



2009 David Bruce awardees with APS Past President Hannah Carey and President Elect Gary Sieck.

2009 APS/NIDDK Minority Travel Fellows Attend Experimental Biology in New Orleans

The APS regularly awards Travel Fellowships for underrepresented minority scientists and students to attend APS scientific meetings with funds provided by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). These Fellowships provide funds for registration, transportation, meals, and lodging for travel to a meeting location, as well as complimentary meeting registration. Forty Fellows attended the APS annual meeting, "Experimental Biology" (EB) in New Orleans, LA from April 18-22, 2009.

Fellows in the NIDDK Minority Travel program not only received financial support to attend these meetings, but were also provided professional guidance through pairings with APS members who served as meeting mentors to the Fellows for the duration of the conference. Thanks to the time and expertise offered by mentor volunteers, Fellows were able to expand their network of professional colleagues.

During EB, Fellows attended an orientation and reception on Saturday afternoon, a networking breakfast on Monday, and a luncheon on Wednesday. This year, the luncheon speaker was Adriana Briscoe, Univ. of California, Irvine. Briscoe's speech, "Pursuing a Life in Science: Lessons from my Teachers," reflected on mentoring and networking in the scientific community.

The travel awards are open to graduate students, postdoctoral students, and

advanced undergraduate students from minority groups underrepresented in science (i.e., African Americans, Hispanics, Native Americans, and Pacific Islanders). Students must be US citizens or permanent residents. The specific intent of this award is to increase participation of pre- and post-doctoral minority students in the physiological sciences. For more information, contact Brooke Bruthers in the APS Education Office at 301-634-7132 or bbruthers@the-aps.org, or visit www.the-aps.org/education/minority_prog/index.htm on the APS website.

APS Travel Fellows at "Experimental Biology 2009:

Adebowale Adebisi, Univ. of Tennessee Health Science Center; Imo Akpan, Univ. of Pennsylvania; Gustavo R. Ares, Henry Ford Hospital; Sydella Blatch, National Institutes of Health; Krystal N. Brinson, Medical College of Georgia; Raquel M. Brown, Southern Illinois Univ.; Heidi L. Contreras, Univ. of California, Irvine; Zeliann Rivera Craig, Univ. of Arizona; John H. Dubinion, Univ. of Mississippi Medical Center; Jorge L. Gamboa, Univ. of Kentucky; Fernanda RC Giachini, Univ. of Sao Paulo/Medial College of Georgia; Shea Gilliam-Davis, Wake Forest Univ. School of Medicine; Albert L. Gonzales, Colorado State Univ.; Helmut Bandeira Gottlieb, Univ. of the Incarnate Word; Dolores Doane Guest, Univ. of Illinois at Urbana-Champaign; TanYa Gwathmey,

Wake Forest Univ.; Andres Hernandez, Auburn Univ.; Marcela Herrera, Henry Ford Hospital; Michael Hoffman, Univ. of Wisconsin-Madison; Debra L. Irsik, Univ. of Nebraska Medical Center; Erin M. Keen-Rhinehart, Harbor UCLA Medical Center; Anna K. Leal, UT Southwestern; Natasha Lugo-Escobar, Univ. of Puerto Rico Medical Sciences Campus; Jeffrey B. Mason, Univ. of Pennsylvania School of Veterinary Medicine; Keisa Mathis, LSUHSC; Cathy C. Moore, Univ. of North Carolina at Charlotte; Norma B. Ojeda, Univ. of Mississippi Medical Center; Karl D. Pendergrass, Wake Forest Univ.; Arthur J. Pope, Univ. Of Florida; Clintoria L. Richards-Williams, Univ. of Alabama at Birmingham; Lilliana Sanchez, Univ. of New Mexico; Olga I. Santiago, Ponce School of Medicine; Aerial L. Singleton, New Mexico State Univ.; Mesia M. Steed, Wake Forest Univ.; Carmen M. Troncoso Brindeiro, Univ. of Nebraska Medical Center; Carla M. Trujillo, New Mexico State Univ.; Johana Vallejo-Elias, Midwestern Univ.-Arizona Osteopathic School of Medicine; Vabren L. Watts, Meharry Medical College; Letitia Weigand, Johns Hopkins Bloomberg School of Public Health; Leslie D. White, Univ. of Florida-College of Medicine; Justin L. Wilson, Howard Univ.

APS Meeting Mentors at "Experimental Biology 2009:

Adebowale Adebisi, Univ. of Tennessee Health Science Center; Moshe Levi,



APS/NIDDK Minority Travel Fellows at the EB 2009 Luncheon.

Univ. of Colorado Denver; Pradeep K. Dudeja, Univ. of Illinois at Chicago; John H. Dubinion, Univ. of Mississippi Medical Center; Michael J. Rovetto, Univ. of Missouri; Alencia V. Woodard-Grice, Vanderbilt Univ.; Erin M. Keen-Rhinehart, Harbor UCLA Medical Center; Joyce Evans, Univ. of Kentucky; Johana Vallejo-Elias, Midwestern Univ.; Norma B. Ojeda Gamarra, Univ. of Mississippi-Medical Center; Helmut Bandeira Gottlieb, Univ. of the Incarnate Word; Stephen J. Crozier, Univ. of Michigan; Jennifer C. Sullivan, Medical College of Georgia; Nina

Stachenfeld, Yale Univ. School of Medicine; Carole M. Liedtke, Case Western Reserve Univ.; Rayna J. Gonzales, Univ. of Arizona College of Medicine, Phoenix; Lisa R. Leon, US Army Research Institute of Environmental Medicine; David Brooks, Johnson & Johnson PRD; Ann T. Hanna-Mitchell, Univ. of Pittsburgh School of Medicine; Ollie Kelly, Univ. of Alabama, Birmingham; Radhakrishna (R. K.) Rao, Univ. of Tennessee Health Sciences Center; Monte S. Willis, Univ. of North Carolina Hospitals; Mesia M. Steed, Wake Forest Univ.; Greg Florant,

Colorado State Univ.; Larissa Shimoda, Johns Hopkins Univ. School of Medicine; Peter Horvath, Univ. of Buffalo; Jay Dean, Univ. of South Florida; Dominic D'Agostina, Univ. of South Florida; Rudy M. Ortiz, Univ. of California, Merced; Lisa Harrison-Bernard, Louisiana State Univ. Health Sciences Center; Thomas C. Resta, Univ. of New Mexico; William J. Pearce, Loma Linda Univ. School of Medicine; Mark L. Witten, Arizona College of Medicine; Ryan M. Pelis, Novartis Pharmaceuticals Corporation; Michael J. Ryan, Univ. of Mississippi Medical Center. ❖

2008 Frontiers in Physiology Research Teachers and Hosts Honored at EB 2009

Eleven Research Teacher (RT) Fellows and their APS member Research Hosts in the year-long 2008 Frontiers in Physiology Professional Development Fellowship were honored at a luncheon at EB 2009. Also honored were the Physiologists-in-Residence (PIRs): the 2008 K-12 Minority Outreach Fellows, Keisa Mathis (Louisiana State Univ., Health Sciences Center) and TanYa Gwathmey (Wake Forest Univ., School of Medicine), and Thomas Schmidt (Univ. of Iowa); and the Mentor/Instructors who were past RTs: Tonya Smith (South Carolina), Isabelle Camille (Florida), and Robert Manriquez (Louisiana).

The RTs concluded their fellowship year by experiencing this scientific meeting, participating in the Physiology for Life Science Teachers and Students Workshop, and attending the Physiology Understanding Week Training Session. Six RTs presented scientific posters, including Jennifer Davis (Illinois), Monica Erwin (Pennsylvania), Regan Lawson

(Colorado), Teri Mitton (Idaho), Jonathan Tuttle (Utah) and Karen Walton (South Carolina). In addition to their posters, Tuttle and Walton also orally presented their summer research work.

In addition to the RTs' seven- to eight-week research experience with their Research Host last summer to learn first-hand how the research process works, they attended the "APS Science Teaching Forum," an intensive workshop week focused on student-centered teaching methods at the Airlie Center in Warrenton, VA. The Mentor/Instructors and the PIRs facilitated sessions using APS curriculum units and explored inquiry- and equity-based teaching strategies, while integrating technology into their classroom, and addressing equity and diversity in science education. Last fall, the RTs developed and enhanced their own inquiry-based lab activity for the science classroom, as well as completed online assignments for this fellowship.

The Frontiers in Physiology program is designed to create ongoing working

relationships between research scientists and middle/high school teachers via research and in-service experiences. Additionally, the program promotes the adoption of national standards for K-12 content and pedagogical techniques among middle and high school science teachers through ongoing in-service activities developed collaboratively by teachers and physiology researchers.

Frontiers in Physiology is sponsored by the APS, a Science Education Partnership Award from the National Center for Research Resources and the National Institute of Diabetes and Digestive and Kidney Diseases at the National Institutes of Health. For additional program information visit <http://www.frontiersinphys.org>, or if you are interested in hosting a teacher next summer, email Mel Limson in the APS Education Office (mlimson@the-aps.org). See the selection of the 2009 Research Teachers and Research Hosts in this issue. ❖



The 2008 Mentor/Instructors for the Frontiers program enjoy their role in leading the professional development program for the RT Fellows throughout the year. From left to right: Tonya Smith, Robert Manriquez, and Isabelle Camille.



The 2008 RT Fellows celebrate the culmination of their year-long fellowship program with the APS at an awards luncheon honoring them and their APS member Research Hosts. Not pictured: Michael Griffin and Jonathon Tuttle.

Ortiz Receives 2nd Early Career Professional Service Award

The APS Trainee Advisory Committee is pleased to announce that Rudy M. Ortiz, Assistant Professor of Natural Science at the University of California, Merced, has been selected as the second recipient of the APS Early Career Professional Service Award. The Committee was extremely impressed with his outstanding service contributions at all levels, from K-12 to undergraduate to graduate to postdoctoral education.

Ortiz has been very active both inside and outside APS, foremost as a mentor and trainer and also as a committee, task force, and advisory board member; session organizer and presenter; and reviewer. He has done service and outreach on a K-12, undergraduate, graduate, postdoctoral, and new investigator level.

In the K-12 arena, Ortiz has been a career panelist for the APS High School Teacher/Student workshop at Experimental Biology and has served as Physiologist-in-Residence for the APS Frontiers Science Teaching Forum. In his own community, he speaks to local grade school classes on health and nutrition.

Ortiz has mentored over 30 undergraduate and graduate students, especially under-represented minority students, in his own laboratory at Merced and also at scientific meetings. He has been a meeting mentor to over 10 undergraduate and graduate students at EB and Society for Native Americans and Chicanos in Science (SACNAS). He sponsors undergraduates to conduct research in Japan and then acts as their mentor, as well as serving as a mentor to the Japanese students. He served as a faculty panelist while also taking three of his own students to the APS Undergraduate Physiology Explorations Retreat. He has served as a poster judge for the Bruce Excellence in Undergraduate Research Awards during EB and been the featured speaker at the NIDDK Minority Travel Fellows luncheon.

Ortiz is committed to training the next generation of physiologists. He served on the Professional Skills Training (PST) Project Advisory Board and was instrumental in helping develop both PST courses to meet the needs of underrepresented graduate students and postdoctoral fellows. He also participated as one of the speakers for both courses. He developed and implemented an abstract writing symposium for the SACNAS annual meeting that now stands as an integral component of their professional skills training workshops. While serving as an inaugural member of the Trainee Advisory Committee, Ortiz organized their first symposium and selected the topic to be "Transition from Postdoc to Jr. Faculty." The symposium was so successful, it was standing room only.

In addition to his service on the Trainee Advisory Committee, Ortiz is or has been a member of the Porter Physiology Development Committee, APS Meetings Task Force, and Comparative & Evolutionary Physiology Section Steering Committee. Importantly, he was one of select number of trainees who were asked to partic-

ipate in the 2005 APS Strategic Planning Retreat. He was also selected to serve on the State of California Legislator's Task Force on Childhood Diabetes and Obesity as the University of California, Merced representative and is a member of the Merced Chapter of the Central California Regional Obesity Prevention Program.

Ortiz serves on many scientific review panels, including several for other national and state societies. He is the chair of the University's graduate program Education Policy Committee and is a member of their Institutional Animal Care & Use, Life Sciences Curriculum, and faculty search Committees.

Ortiz was honored at the Experimental Biology 2009 meeting during the APS Business Meeting on Tuesday, April 21. He will write an article for a future issue of *The Physiologist* about professional service.

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



APS President Irving Zucker and Trainee Advisory Committee Chair Erica Wehrwein present the Early Career Professional Service Award to Rudy Ortiz.

New Orleans High School Students and Science Teachers Explore Physiology for a Day at EB 2009

More than 110 New Orleans area high school teachers and their students, and the 11 2008 Frontiers in Physiology Fellowship Research Teachers (RTs) actively participated in the Physiology for Life Science Teachers and Students Workshop at EB 2009. The day-long workshop included a keynote presentation, a careers panel discussion, a tour of posters and exhibits, and hands-on physiology workshops for students and teachers.

Education Committee Chair Thomas Pressley, Texas Tech Univ. Health Sciences Center, and committee member Clintoria Richards-Williams, Emory

Univ., coordinated the day's events. During the registration period in the morning, committee and other members, including Robert Brock, West Virginia Univ.; Gregory Brower, Univ. of South Carolina School of Medicine; Ryan Downey and Raymond Willis, Texas Tech Univ.



Michael Davis explains the amount of fat sled dogs need daily by comparing it to an equivalent quantity of fast food hamburgers.



APS Education Committee Members Robert Brock (seated) and Maria Jose Alves Rocha (second from left standing) explain to a student group what is being monitored by the equipment provided by ADInstruments.

Health Sciences Center; APS 2008 K-12 Outreach Fellow Keisa Mathis, Louisiana State Univ. Health Sciences Center (LSU HSC); Maria Jose Alves Rocha, Univ. of Sao Paulo; and Dexter Speck, Univ. of Kentucky, assisted representatives from ADInstruments in engaging the students in interactive demonstrations

with their cardiovascular monitoring equipment.

The keynote talk, "Sled Dog Physiology – Research on the Last Frontier," was given by APS member, Michael S. Davis of Oklahoma State Univ., Center for Veterinary Health Sciences (presentation available at: <http://www.the-aps.org/education/K12EBWorkshop.htm>). Davis presented his work with sled dogs as nature's premier endurance athletes, capable of running hundreds of miles in some of the most severe conditions imaginable. Davis and his team of scientists have begun to unlock the secrets of their ability, and shared some of the findings, challenges, and fascinating features of sled dogs and sled dog research.



APS 2008 K-12 Outreach Fellow TanYa Gwathmey guides students in designing their experiment to test rate flow.



Career Panelists discuss their academic and life journeys with the student and teacher audience. From left to right: Latanya Hammonds-Odie, Michael Davis, Dexter Lee, Keisa Mathis, and Jaclyn Reeves-Pepin (moderator).

Davis was then joined by a Careers Panel that included APS members Latanya Hammonds-Odie of Dillard College in New Orleans, LA, Dexter Lee of Howard Univ. School of Medicine in Washington, DC, and Keisa Mathis of LSU HSC. The panel was moderated by Jaclyn Reeves-Pepin, Director of Development for the National Association of Biology Teachers (NABT). The panelists shared their earliest experiences of doing science and continuing on as researchers through mentorship and opportunities presented to them. Sixteen APS members served as tour guides during lunch where they took teachers and students through the exhibits and posters and shared a box lunch while discussing physiology careers.

The afternoon student session was led by Dexter Speck of the Univ. of Kentucky with assistance from Barbara Goodman of the Univ. of South Dakota and the following APS members: Cindy Anderson, Univ. of North Dakota College of Nursing; Sue Barman, Michigan State Univ.; Michael Davis, Oklahoma State Univ.; Tom Ecay, East Tennessee State Univ.; Rayna Gonzales, Univ. of Arizona College of Medicine, Phoenix; TanYa Gwathmey and Mesia Steed, Wake Forest Univ. School of Medicine; Andrea Gwosdow, Gwosdow Associates Science Consultants; David Holtzclaw, Univ. of Nebraska Medical Center; Jeffrey Osborn, Univ. of Kentucky; Maria Jose Alves Rocha, Univ. of Sao Paulo; and Alencia Woodard-Grice, Vanderbilt Univ. Students used the “Elvis Experiments”

from the APS “Physiology of Fitness” unit to learn about factors affecting flow of liquids through tubing (radius, length, viscosity).

While students were conducting their experiments, their teachers (as well as the 2008 RTs) participated in a workshop activity on modeling the digestive system with common household items. Frontiers Mentor/Instructor Robert Manriquez (Louisiana) and Tonya Smith (South Carolina) led the teacher workshop, assisted by APS Member Robert Carroll (East Carolina Univ. Brody

School of Medicine).

As in the past, feedback from both teachers and students was very positive and students were especially excited to meet physiologists one-on-one. In addition to the APS, donations for door prizes and resources were provided by NABT, ADInstruments, the Howard Hughes Medical Institute, and VWR Education. The APS Education Committee is planning to continue the workshop program for high school students and teachers at EB 2010 in Anaheim. ❖



Teacher participants and 2008 RTs participate in a teacher-developed activity (Diana Hill, 2002 RT Fellow) on digestion. The groups model how crackers are processed from the mouth through excretion using juice, funnels, filters, zippie bags, pantyhose, and duct tape.



APS member David Holtzclaw questions a student group in performing a test on the effect of tube length on the flow rate.



APS member Cindy Anderson monitors students collecting data on the effect of viscosity on the flow rate of a liquid.

2008 ISI Impact Factors for APS Journals

Thomson Reuters/ISI has released its 2008 Science Edition of the Journal Citation Reports, which gives journal Impact Factors and rankings of approximately 8,000 science journals. The 2008 Impact Factors of the journals of the APS, along with a comparison of the

past 3 years, are given in the table below. The table also shows the rank of APS journals in the physiology category, as well as each journal's cited half-life.

The 2008 Journal Citation Reports includes an update to the Five-Year Impact Factor and Eigenfactor™

Metrics in JCR Web. Eigenfactor™ Metrics use citing journal data from the entire JCR file. The Eigenfactor™ score and the Article Influence™ score are calculated based on the citations received over a five-year period. ❖

Table 1. 2008 ISI Impact Factors for APS Journals.

Journal	ISI Impact Factor Data						Eigenfactor™ Metrics		
	2005	2006	2007	2008	5-Year Impact Factor	2008 Cited Half-Life	2008 Rank Among Physiology Journals	2008 Eigenfactor™ Score	2008 Article Influence™ Score
<i>Phys. Reviews</i>	28.721	31.441	29.600	35.000	35.855	7.8	1	0.05617	15.262
<i>Physiology</i>	2.111	6.268	6.954	7.159	7.732	3.1	3	0.01197	3.529
<i>AJP-Cell</i>	3.942	4.334	4.230	4.230	4.171	6.7	8	0.05999	1.572
<i>AJP-Lung</i>	3.939	4.250	4.214	3.924	4.061	6.0	12	0.04330	1.374
<i>AJP-Renal</i>	4.263	4.199	4.416	3.890	4.088	6.3	13	0.04633	1.327
<i>AJP-Endo</i>	4.456	4.123	4.138	3.855	4.129	7.0	14	0.05338	1.440
<i>J. of Applied Phys.</i>	3.037	3.178	3.632	3.658	3.760	>10.0	15	0.07126	1.142
<i>J. of Neurophys.</i>	3.853	3.652	3.684	3.648	3.990	8.9	16	0.12969	1.759
<i>AJP-Heart</i>	3.560	3.724	3.973	3.643	3.736	6.5	17	0.09400	1.236
<i>AJP-GI</i>	3.472	3.681	3.761	3.587	3.645	7.1	18	0.03663	1.117
<i>Phys. Genomics</i>	4.636	3.789	3.493	3.436	3.873	4.1	21	0.02269	1.477
<i>AJP-Regu</i>	3.802	3.685	3.661	3.272	3.556	7.4	23	0.05174	1.162
<i>Advances</i>	1.043	1.260	0.984	1.483	1.723	4.5	54	0.00134	0.380

Authors:

Publish your name in your native language

Authors who publish in APS journals may now present their names in non-Latin characters (in their native writing system) alongside the standard English transliteration of their name in the main author line of the published article; for example, "Ta-Ming Wang (王大明)".

We will accept any non-Latin languages that have standard Unicode characters designated for the native characters. For authors that choose this option, please only provide the native expression for the original written form of the transliterated **name**; that is, do not include any associated degree, rank, or title information in the native format. This feature is meant for the person's name only, not for ancillary information regarding academic achievement or institutional affiliation.

To take advantage of this new feature, please insert the native expression of your name alongside the English transliteration in the main title page of your manuscript submission.

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3-9-09

Gulf Coast Physiological Society Meets

LSU Health Sciences Center in Shreveport (LSUHSC-S) hosted the fifth annual Gulf Coast Physiological Society Meeting April 17-18 in New Orleans on the campus of LSU Health Sciences Center in New Orleans (LSUHSC-NO) immediately before EB-09. Matt Grisham (LSUHSC-S) served as President of the meeting with the Organizing Committee consisting of Steve Alexander (LSUHSC-S), Neil Granger (LSUHSC-S), Norman Harris (LSUHSC-S), Mary Townsley (Univ. of South Alabama), Patricia Molina (LSUHSC-NO) and L. Gabriel Navar

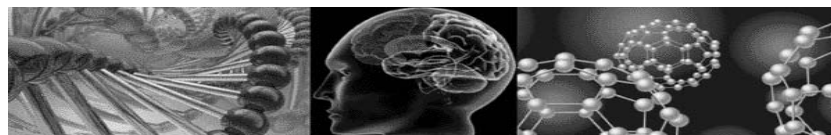
(Tulane Univ.). Mark Gladwin (Univ. of Pittsburgh) was selected as the Keynote speaker for the meeting and gave a very entertaining lecture entitled "Haldane, Hot Dogs and Halitosis." In addition, four junior faculty members were invited to present their work as 30 minute oral presentations. These presenters included Jerry Breslin (LSUHSC-NO), Khalid Matrougui (Tulane Univ.), Michael Ryan (Univ. of Mississippi) and Mark Taylor (Univ. of South Alabama). Finally, the abstracts submitted by eight trainees (post docs and graduate students) were selected as 15 minute oral

presentations. Following their presentations, Sydney Murphy (Univ. of Mississippi) and Caroline Raasch (LSUHSC-NO), both PhD students, were each presented with an APS-sponsored Student Award of \$250 each.

The meeting attracted 82 participants of which 44 submitted abstracts. Attendees represented six different Universities/Colleges (LSUHSC-S, LSUHSC-NO, Tulane Univ., Univ. of Mississippi, Univ. of South Alabama and Centenary College in Shreveport). ❖



Jerry Breslin (LSU-NO), Sungmi Park (LSU-NO), Robert Siggins (LSU-NO), Annie Whitaker (LSU-NO), Fridirk Karlsson (LSU-Shreveport), Mark Gladwin (Keynote speaker; Univ. of Pittsburgh), Caroline Raasch (LSU-NO), Serena Li-Sue Yan (LSU-Shreveport), Sydney Murphy (Univ. of Mississippi), Matt Grisham (LSU-Shreveport) and Khalid Matrougui (Tulane Univ.). Not pictured: Michael Ryan (Univ. of Mississippi), Magdalena Circu (LSU-Shreveport) and Mark Taylor (Univ. of South Alabama).



Need to promote open positions, fellowship opportunities, programs, or conferences in physiology?

Advertise in the publications of The American Physiological Society (APS). The APS publications are a perfect way to advertise to research investigators, clinicians, educators, and information specialists in all disciplines of physiology. Two of the APS publications, *Physiology* and *The Physiologist* are distributed to over 11,500 APS members. Most APS publications offer email advertising options and now the APS eNews Update accepts advertising. Online ad design is available. Recruitment and product advertising are accepted.

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View APS rate card and full media kit at www.faseb.org/adnet.**

Iowa Physiological Society Meets

The 14th Annual Meeting of the Iowa Physiological Society (IPS) was held on May 2, in the Olmsted Center on the campus of Drake Univ. in Des Moines, IA. Attendance at the meeting totaled 35 individuals from institutions within Iowa and 18 posters from four different institutions were presented.

The meeting began with a brief welcome and introductory remark from IPS President, College of Pharmacy & Health Sciences, Drake Univ. Most notably, Ronald Torry thanked the American Physiological Society and Data Sciences International for sponsoring speakers at the meeting.

The first keynote speaker was Andrew Holmes, Section Chief, National Institute on Alcohol Abuse and Alcoholism, NIH (sponsored by the American Physiological Society). His presentation entitled, "How research on mice helps us understand the genetic basis of depression and anxiety," highlighted the complexities and advancements gained using murine models of depression and anxiety. Holmes' presentation was followed by investigator presentations by Craige Wrenn and Alan Myers, both from the College of Pharmacy & Health Sciences, Drake Univ.

Following a break, which was dedicated to poster viewing and judging for the undergraduate student travel awards competition, Robert Shumaker, Research Director, Great Ape Trust of Iowa, delivered the Iowa Physiological Society sponsored address entitled, "Understanding Orangutans, the Neglected Ape-Perspectives on Behavior, Cognition, and Conservation."

In the afternoon session, Andrew King, Associate Research Investigator, Integrative Pharmacology, Abbott Laboratories, described his work on chronic measurement of hemodynamics in small laboratory animals. Data Systems International sponsored his seminar. Joseph Weir, Physical Therapy/Exercise Physiology, Des Moines Univ., and Eric Nau, Research Associate, Integrative Physiology, Univ. of Iowa, also provided investigator presentations.

The afternoon break was dedicated to poster viewing and judging for the graduate student travel awards and compiling scores from the judges. The poster session was followed by a special topic session on science education. Gina Schatteman, AAAS Science & Technology Fellow, Office of Science



American Physiological Society Keynote Speaker Andrew Holmes presents his lecture on the genetic basis of depression and anxiety.

Education, NIH gave a presentation entitled, "Scientists in Science Education: Why we should care about K-12 Education," in which she highlighted the state of science education, student achievement and rationale for why scientists should become more active in early science education.

The meeting concluded with a raffle drawing and student travel award presentations. The award winners in the



Iowa Physiological Society Keynote Speaker Robert Shumaker presenting his lecture on cognitive and behavioral studies in great apes.



IPS president, Ron Torry, presents an award to Richard Deklotz, graduate student from the University of Iowa.



IPS president, Ron Torry, presents an award to Shannon Egli, graduate student from the Des Moines University.



IPS president, Ron Torry, presents an award to Rachel Firkins, Drake University, who completed her research in the Department of Physiology and Pharmacology, Des Moines University.

graduate division each received a certificate and monetary awards of \$125. The graduate student winners included:

Shannon Egli and colleagues, Jennifer Giles and Terriann Crisp, Des Moines Univ.; Richard Deklotz and colleagues, Kevin Rarick, Don Sheriff, and Harald Stauss, Univ. of Iowa.

Award winners in the undergraduate division each received a certificate and monetary awards of \$100. The undergraduate winners included:

Boa Vu and colleagues, Michael Essmann, Bryan Larsen, Des Moines Univ.; Kate Long and colleagues, Ankit Patel, Andrew Swisher and W.D. Klipec, Drake Univ.

An honorable mention award (certificate and \$50) was presented to Rachel Firkins and colleagues, Pooja N. Patel, Katie Welliver, Julia A. Moffitt, from Drake Univ. and Des Moines Univ.

The IPS business meeting was held following the award presentations. Julia Moffitt, Des Moines Univ., was introduced as the incoming IPS President for 2009-10 and planning for the 15th Annual Meeting of the Iowa Physiological Society commenced. ❖



IPS president, Ron Torry, presents an award to Bao Vu, student from Drake University, who completed his research in the Department of Microbiology and Immunology, Des Moines University.

Ronald Torry
IPS President
Drake University

Communications

Communications Update

In May and June, the Communications Department issued four new press releases. Three of the releases featured studies from our Journals:

“Research Shows How A Stroke Affects Hand Function; Provides Roadmap For Rehabilitation,” (*Journal of Neurophysiology*);

“Babies Born to Native High-Altitude Mothers Have Decreased Risk of Low Birth Weight,” (*American Journal of Physiology-Regulatory, Integrative and Comparative Physiology*);

“Chemical Used in the Production of Intravenous (IV) Bags and Other Medical Equipment Can Reproduce Complications Seen in Patients Following Extracorporeal Circulatory (EC) Support” (*American Journal of Physiology-Heart and Circulatory Physiology*).

In addition, one release brought attention to a podcast episode on celiac disease research.

“Celiac Disease Update on Episode 20 of Life Lines Podcast.”

If you are reading this online, you can click the titles to link directly to the

release. Or, you can go to <http://www.the-aps.org/press> and find all of our recent releases.

Among the media outlets that featured a story on one of these studies were Voice of America, Medical News Today (UK) and Science Daily.

We have published two new podcasts since Experimental Biology:

“Episode 21 (Blood Pressure and the Brain),”;

“Episode 22 (Laughter: Good Medicine?).”

You can find all of the podcasts at <http://www.lifelines.tv>. ❖

New Regular Members

*Transferred from Student Membership

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Sliman J. Bensmaia
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Keshore Bidasee
Univ. of Nebraska

Terence M. Bradley
Univ. of Rhode Island

Xian Cao*
Cornell Univ., NY

Kari Lynn Clase
Purdue Univ., IN

He Cui*
Medical College of Georgia

Sean P. Didion*
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Umea Univ., Sweden

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Navy Exp. Diving Unit, Panama City, FL

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City College of New York

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Baylor College of Med., TX

Fernando Galvez
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Michael Helwig
Technische Univ., Munchen, Germany

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Huihua Li
Chinese Inst. Basic Med. Sci., Beijing

Liande Li
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McLean Hospital, Belmont, MA

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Manchester Metropolitan Univ., UK

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Fundan Univ., Shanghai, China

Peter C. Meighan
Washington State Univ.

Anna Menini
Int'l. Sch. for Adv. Studies, Trieste, Italy

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HHMI/Stanford Univ., CA

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Rhode Island Hosp.

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Chongben Zhang
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Abdel A. Alli
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Univ. of Massachusetts, Amherst

Ramkishore Gernapudi
Southern Univ and A&M College, LA

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Federal Univ., Vicosa Brazil

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Syracuse Univ., NY

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Don Sharkey
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Southern Connecticut State Univ.

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Elizabeth Marie Staley
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Jose Pablo Vazquez-Medina
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Nan Wu
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Canada

Endrit Ziu
Univ. of Arkansas

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Susanne A. Van Weelden
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Portland, OR

Thomas J. Reeves
Beaumont, TX

Marcus A. Rothschild
New York, NY

Daniel C. Tosteson
Boston, MA

Joseph T. Velardo
Lombard, IL

Vallee L. Willman
St. Louis, MO

APS Supports 24 Undergraduate Researchers

The American Physiological Society's Undergraduate Summer Research Fellowships (UGSRF) program is sponsored by the APS Career Opportunities in Physiology Committee and funded by the APS Council. In 2007, APS doubled the number of fellowships. In 2009, we will again be funding 24 undergraduates for the summer. The program was established in 2000, making this the ninth

year of the program.

These fellowships are to support full-time undergraduate students to work in the laboratory of an established investigator. The intent of this program is to excite and encourage students to pursue a career as a basic or clinical research scientist. Faculty sponsors/advisors must be active members of the APS in good standing but do not have to be US

residents. Past awardees include students from Canada and South America.

These Fellowships provide a \$4,000 summer stipend to the student (10 weeks of support), a \$300 grant to the faculty sponsor/advisor, and up to \$1,300 to the student so that he/she may attend and present their data at the APS annual meeting, Experimental Biology 2010.

Student/Student Institution

John Alexander
Univ. of Cincinnati
Benjamin Barnes
Univ. of Kentucky
Kristen Campbell
Appalachian State Univ.
Katie Collette
Univ. of North Dakota
Emily Cousens
Univ. of Arizona
Trent Evans
Univ. of Wisconsin - Madison
Immaculate Foy
Univ. of Kentucky
Jessica Gatt
Univ. of Michigan
Emily Hall
Univ. of Chicago
Alaina Heltemes
Univ. of Minnesota - Duluth
Shelly Hwang
Dickinson College
Benjamin Iliff
Williams College
Jenna Klein
Michigan Tech Univ.
Omar Lara Garcia
Universidad Veracruzana
Erin Merrell
Skidmore College
Geoffrey Miller
Wartburg College
Stephanie Podolski
Univ. of New England
Christine Seames
Univ. of North Dakota
Daniel Sinden
College of William & Mary
John Stewart
Pacific Union College
Anton Temple
South Dakota State Univ.
Sarah Todd
College of William & Mary
Dawnette Urcuyo
Gettysburg College
Lloyd Wilson
Univ. of Utah

Research Host/Host Institution

Bryan Mackenzie
Univ. of Cincinnati
Esther E. Dupont-Versteegden
Univ. of Kentucky
Scott R. Collier
Appalachian State Univ.
Van A. Doze
Univ. of North Dakota
Eldon J. Braun
Univ. of Arizona
William D. Schrage
Univ. of Wisconsin - Madison
Sean D. Stocker
Univ. of Kentucky
Lori L. Isom
Univ. of Michigan School of Medicine
Dorothy A. Hanck
Univ. of Chicago School of Medicine
Jeffrey S. Gilbert
Univ. of Minnesota - Duluth Medical School
Mark A. Knepper, M.D.
National Institutes of Health
Steven J. Swoap
Williams College
Jason R. Carter
Michigan Tech Univ.
Raul Martinez-Zaguilan
Texas Tech Univ. Health Sciences Center
Thomas H. Reynolds
Skidmore College
Willis K. Samson
Saint Louis Univ. School of Medicine
Markus Frederich
Univ. of New England
Cindy M. Anderson
Univ. of North Dakota College of Nursing
Brian R. Wamhoff
Univ. of Virginia School of Medicine
Lawrence D. Longo, M.D.
Loma Linda Univ. School of Medicine
Richard D. Minshall
Univ. of Illinois, Chicago
Robin C. Looft-Wilson
College of William & Mary
Josef Brandauer
Gettysburg College
J. David Symons
Univ. of Utah School of Medicine

APS Members Host Summer Research Experience for Science Teachers

This spring 18 teachers from across the nation were selected to participate in the year-long 2009 Frontiers in Physiology Professional Development Fellowship Program. One component of the fellowship 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 Research Teachers (RTs) learn first-hand how the research process works allowing them to enhance their own science teaching with their students in the classroom.

In July, the RTs also attended the "APS Science Teaching Forum," an intensive workshop week focused on student-centered teaching methods at the Airlie Center in Warrenton, VA. APS Councillor Barbara Goodman (Univ. of South Dakota) and member Shea Gilliam (Wake Forest Univ.) served as a Physiologists-in-Residence. A leadership team of past RTs served as Mentor/Instructors, including Margaret Shain (Indiana), Rebecca Evans (Ohio), Randy Dix (Kansas), and Robert Manriquez (Louisiana). Together they facilitated sessions using APS curriculum units and exploring inquiry- and equity-based teaching strategies, how to integrate technology into their classroom, and equity 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 2010 in Anaheim, CA.

Frontiers in Physiology (<http://www.frontiersinphys.org>) 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). The following are the Teacher/Research Host teams for 2009, listed alphabetically by the teacher's last name:

Suzanne Banas, South Miami Middle Comm. School, Miami, FL
Nikolaos Tsoukias, Florida International Univ., Miami

Charlene Byrd, John Q. Adams Middle School, Metairie, LA
L. Gabriel Navar, Tulane Univ., New Orleans, LA

Diana Cost, Weymouth High School, Weymouth, MA
Raouf A. Khalil, Brigham & Women's Hospital, Boston, MA

Paula Donham, Olathe East High School, Olathe, KS
Norberto C. Gonzalez, Univ. of Kansas Med. Ctr., Kansas City

Denice Gamper, Bard High School Early College, New York
Samuel C. Silverstein, Columbia Univ., New York

Caroline Guthrie, Githens Middle School, Durham, NC
Jo Rae Wright, and Kristi Williams, Duke Univ., Durham, NC

Thomas Haren, Canton City Schools Digital Acad., Canton, OH
Jacqueline Novak, Walsh Univ., North Canton, OH

Debra Hasan, Cousins Middle School, Covington, GA
Otto Froehlich, Emory Univ., Atlanta, GA

Anne Joy, Clara Driscoll Middle School, San Antonio, TX
Merry L. Lindsey, Univ. of Texas, San Antonio

Todd McDonald, St. Charles West High School, St. Charles, MO
Jonathan S. Fisher, St. Louis Univ., St. Louis, MO

Jennifer Mills, John Q. Adams Middle School, Metairie, LA
Patricia Molina, and Lauri Byerly, Louisiana State Univ.,
New Orleans

Tricia Radojcic, Bella Vista Middle School, Murietta, CA
Theodore Garland, Univ. of California, Riverside

Rona Robinson-Hill, McKinley Classical Leadership Acad.,
St. Louis, MO
Jonathan S. Fisher, St. Louis Univ., St. Louis, MO

Andrea Tracy, Canyon Hills Middle School, El Paso, TX
Kristin L. Gosselink, Univ. of Texas, El Paso

Maria Vibandor, L.W. Higgins High School, Marrero, LA
Patricia Molina, and Lauri Byerly, Louisiana State Univ.
Health Sciences Center, New Orleans

Deborah Wallace, Pilgrim Park Middle School, Elm Grove, WI
John D. Imig, Medical College of Wisconsin, Milwaukee

Audra Brown Ward, Marist School, Atlanta, GA
My N. Helms, Emory Univ., Atlanta, GA

Carol Wheeler, Red River High School, Grand Forks, ND
Cindy M. Anderson, and Joseph Benoit,
Univ. of North Dakota, Grand Forks

Promotion and Tenure Audio/PowerPoints Now Available!

Audio and associated PowerPoint slides from the Careers Symposium on "Rising and Surviving: Elucidating Tenure and Promotion in Multiple Career Paths" presented at EB 2009 are now available online at

<http://www.the-aps.org/careers/careers1/EBSymposia/EB2009symposium.htm>

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

APS members continue to judge and present Science Fair Awards on behalf of the APS at local and regional science fairs for precollege students across the nation. In 2009, 34 requests for a science fair award packet have been received to date, already doubling the number from last year. The student selected to have the best physiology-related project receives an APS t-shirt, an APS researcher pin, and a certificate. The student's teacher receives the APS *Women Life Scientists* book and a K-12 resource packet.

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

Mustafa Iqbal, a senior at John Jay Science and Engineering Academy in San Antonio, TX, received an APS award for the best physiology project at the Exxon Mobil Texas Science and Engineering Fair 2009. APS members Ron Seaman of General Dynamics Ais and Kathy Ryan of US Army Institute were judges on behalf of the APS and presented Iqbal with his award. The title of Mustafa project is "The



The best physiology project was presented to Jacob Lenz at the University of Nebraska's 17th annual Science meet. Summit Kar, APS member David Holtzclaw and APS Past President Irving Zucker presented the award.

Protective Effect of Caffeine Stimulated Ryanodine Stores on Astrocytes." His teacher and sponsor is Jay Sumpter.

Aaron Clark, a fourth grader at Briarcrest Elementary School in St. Ann, MO, received an APS award for the best physiology project at The Greater St. Louis Science Fair. APS member Jessica Clark of Washington University, School of Medicine was a judge on behalf of the APS and presented Clark with his award. The title of Aaron's project is "Wii Sports vs Gym Class." His teacher and sponsor is Ms. Curtis.

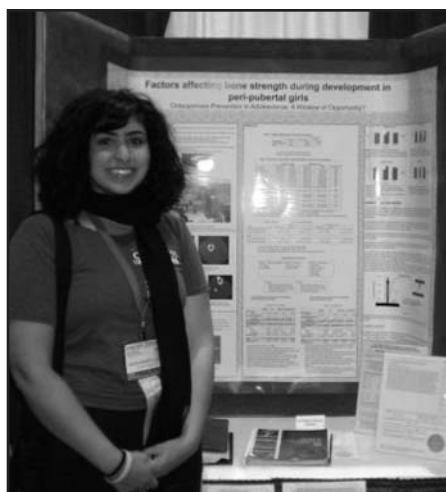
Negin Nematollahi, a senior at Tucson

High Magnet School in Tucson, AZ, received an APS award for the best physiology project at the Arizona Science and Engineering Fair. APS member Layla Al-Nakkash of Midwestern University was a judge on behalf of the APS and presented Nematollahi with her award. The title of Negin's project is "Factors Affecting Bone Strength During Development in Peripubertal Girls." Her teacher and sponsor is Margaret Wilch.

Luke Yokum, a seventh grader at Pendleton County Middle School in Franklin, WV, received an APS award for the best physiology project at the Eastern Regional Science Fair. APS member Shawn Stover of Davis and Elkins College was a judge on behalf of



Dr. George Perry, Dean of the College of Sciences at UTSA, congratulating Mustafa Iqbal on his APS award for an outstanding physiology project at the ExxonMobil Texas Science and Engineering Fair 2009, San Antonio, Texas.



Negin Nematollahi received the award for best physiology project at the Arizona Science and Engineering Fair. APS member Layla Al-Nakkash presented the award.



Jessica Clark presents Aaron Clark with the best physiology project. Aaron is a 4th grader at Briarcrest Elementary School.

the APS and presented Luke with the award. The title of Luke's project is "Does Exercise Lower My Blood Sugar?" The teacher and sponsor is Heather Adams.

William O. Carson, an eighth grader

at Irmo Middle School in Irmo, SC, received an APS award for the best physiology project at the 53rd Annual University of South Carolina Central South Carolina Region II Science and Engineering Fair. APS member Gregory



William Carson was presented an APS award for the best physiology project at The 53rd Annual University of South Carolina Central South Carolina Region II Science and Engineering Fair. The award was presented by APS member Gregory Brower.

Brower of the University of South Carolina, School of Medicine was a judge on behalf of the APS and presented Carson with his award. The title of William's project is "Does School Affect Students' Ability to Get Enough Daily Physical Activity?."

His teacher and sponsor is Cheryl Harrison.

Jacob Lenz, an eighth grader at Papillion Junior High School in Papillion, NE, received an APS award for the best physiology project at the University of Nebraska Medical Center's 17th Annual Science Meet. APS Past President Irving Zucker, and member David Holtzclaw and Sumit Kar of the University of Nebraska were judges on behalf of the APS and presented Lenz with his award. The title of Jacob's project is "Which Liquid will Grow the Longest Radicle?" His teacher and sponsor is Cindy Skarda.

Yiran "Mack" Su, a senior at Clayton High School in St. Louis, MO, received an APS award for the best physiology project at the Greater St. Louis Science Fair-Honors Division. APS member Chaya Gopalan of St. Louis College of Pharmacy was a judge on behalf of the APS and presented Su with his award. The title of Yiran's project is, "The Significance of Phosphorylated Retinoblastoma Protein Levels in Multiple Myeloma Plasma Cells." The teacher and sponsor is Sarah Falkoff. ❖

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Citation of a paper that was first published in Articles in PresS will appear in print as follows:
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After the journal issue is published online and in print, the final version of the paper will come up on search while the Articles in PresS version will be stored in an accessible, permanent archive.



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5-11-09

APS Presents Awards to Outstanding High School Students at the 60th Annual International Science and Engineering Fair

The 60th Annual Intel International Science and Engineering Fair (ISEF), presented by Agilent Technologies, was held in Reno, NV May 11-16, 2009. Nearly 1,600 students from 51 countries, regions, and territories competed in the world's largest pre-college science competition awards. During the two days of awards ceremonies, over \$4 million in scholarships, cash prizes, and awards were distributed in categories ranging from behavioral science to engineering and medicine. More than 500 Intel International Science and Engineering Fair participants received scholarships and prizes for their work. Prizes included scholarships, cash awards, scientific field trips to foreign countries and the grand prizes: three \$50,000 scholarships from Intel. Grand awards included 19 "Best of Category" winners who each received a \$5,000 Intel scholarship and a new laptop. Special Awards are presented by over 70 scientific, professional and educational organizations and include scholarships, summer internships, book and equipment grants and scientific field trips.

For the 14th year, the APS presented four Special Awards in the form of cash prizes, certificates and student subscriptions for the best projects in the physiological sciences. This year's APS judging

team included Robert Hester from the Univ. of Mississippi Medical Center and Mark Knuepfer from St. Louis Univ.

The convention center was packed with posters displaying projects ranging from physiological based research done at home or at large medical schools, to complex robotics complete with computer driven controls. Students spent two days being interviewed by judges representing a variety of disciplines, and participated in a panel discussion featuring several Nobel Laureates. As judges, we previewed almost 80 projects to select 16 that best fit the category of "physiology." We interviewed each of these finalists to evaluate their involvement in the project and to determine their understanding of the science and experimental design behind the project. After two days of judging, we chose the following projects to receive APS awards for excellence in physiological research.

Receiving \$1,500 and first place was Zinan Zhang, 16, a junior at Chamblee Charter High School in Chamblee, GA for his project entitled "Adenosine 2b Receptor: A Novel Therapeutic Target for Irritable Bowel Syndrome." Zhang was also awarded a best of category award for Medicine and Health Sciences-presented by National Institutes of Health receiving a fourth

place award and \$500. Zinan displayed enthusiasm and desire of a young bench scientist.

Jasmine Roberts, 15, of Paul Wharton High School, Tampa, FL received second place and \$1,000. Her project was entitled "Does Chronic Hyperglycemia Have an Effect on Alzheimer's Amyloid-Beta Pathology in the Brain?"

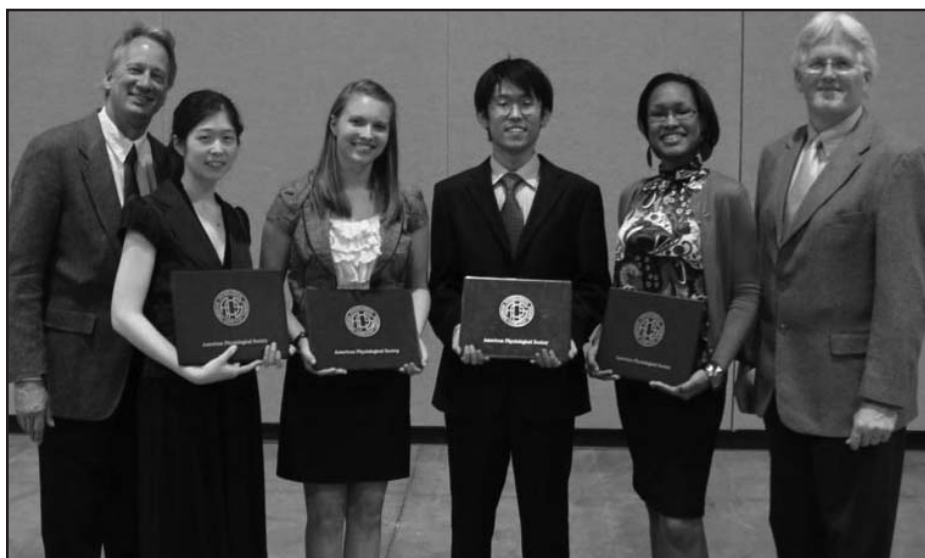
Melissa Mc Dowell, 16, of Saint Joseph's Academy, Baton Rouge, LA was awarded one of the two third place awards of \$500 for her project entitled "Differentiation of Bovine Adipose Derived Adult Stem Cells." McDowell was also awarded a best of category award for Animal Sciences presented by Intel receiving a fourth place award and \$500.

Third place was also awarded to Stephanie Mian Wang, 17, of Roslyn High School in Roslyn Heights, NY. Stephanie's work was titled, "The Novel Property of the Circulating Hormone AM and Its Binding Protein: Neuroprotection in Hypoxia." Wang was also awarded a best of category winner for Medicine and Health Sciences-presented by National Institutes of Health receiving a third place award and \$1,000.

The winners also received a certificate, a t-shirt, and a one-year subscription to APS publications.

These projects are a small example of the many outstanding projects we had the opportunity to judge. The finalists at the fair were outstanding high school students and were extremely knowledgeable and enthusiastic about their projects. The Intel ISEF is a wonderful event and I was honored to represent APS at this celebration of the scientists of tomorrow. ❖

*Robert L. Hester
University of Mississippi
APS Education Committee*



The winners of the APS Special Awards at the 2009 Intel ISEF. Pictured from left to right are Mark Knuepfer, Stephanie Wang, Melissa Mc Dowell, Zinan Zhang, Jasmine Roberts, and Robert Hester.

A String of Pearls – What I Wish Someone Had Told Me When I Started Teaching

Dee U. Silverthorn
Univ. of Texas at Austin

In clinical medicine a pearl is a nugget of wisdom that is passed from generation to generation. In this article, the pearls are the little bits of wisdom that we gather as teachers. Most of them never appear in print, and usually experienced teachers learn them the hard way – by doing the “don’ts” and not doing the “do”s. So in the interest of helping the newest generation of teachers avoid the errors of their elders, I gathered pearls from many colleagues about teaching. What follows are semi-random, mostly pragmatic, bits of advice about teaching. Many are common sense. Not everything will apply to every teaching situation, so take what is helpful and ignore the rest. And be sure to add your own pearls at the Mentoring Forum website!

This article is not a full-fledged “how to teach your first course.” For information on that subject, see the Mentoring Forum column on “Teaching Your First Course” by Jodie Krontiris-Litowitz. One of the most important pieces of advice that Jodie had was about writing the syllabus. Most schools consider the syllabus to be a contract between the instructor and students, and you should consider which of the pearls discussed below are important enough to have a place in the syllabus.

Before the First Class Meets

DO your homework before the first class meeting!

Find the classroom. Time how long it takes you to get there. Double that if you have to go outside in bad weather to get there.

Play with the computer console and make sure you know how to hook up your laptop, download your PowerPoint to the console computer, and start the web browser. Check for logins and passwords and write them down.

Time how long it takes to get everything powered up and functioning. Make sure you get to class each day with that time + 5 minutes to spare.

Find the light controls for the room and test the different settings by putting up a slide and moving around the back of the classroom to make sure it’s visible.

Find out who to call when you have technology problems during class and keep their phone numbers in your class materials. (See Technology DO #1.)



Dee U. Silverthorn

Check out the sound system and how to alter the volume. If there is a portable microphone, figure out how to use it. Bring extra batteries for it if not provided. Decide how you will be standing when talking to the class and put the lapel microphone on the side nearest the audience so that you are talking over it as you look at the audience.

Consider having a dedicated teaching tote bag for each class. Some things to put in it and leave in it: laser pointer, tissues, water, pens, paper, index cards, transparencies and markers in case he computer fails, class roster and photo roster. Include a list of phone numbers for IT, campus police, and other emergencies.

General Classroom Management

DO start your course by being strict and adhering to the rules in your syllabus and institution. It’s easy to loosen up later but impossible to get control in the middle of the semester if you relinquished it at the beginning.

DON’T end class early in the beginning of the course. The students then expect you to do that regularly.

DO end class on time. Respect the students’ time. Many of them have to go to another class or to work, and running overtime is your problem, not theirs. Know what you can omit if you start to run long.

Remember that learning doesn’t happen when you are talking.

Try to remember what it was like to not understand. DON’T ever say “It should be obvious...”

DON’T let the class make critical decisions. Ask for input, but you are in charge.

DON’T ever say “This won’t be on the test.”

When speaking, own every word. This will slow you down and give a different emotional tone to what you are saying.

DON’T let the students see you flinch.

If you give a traditional lecture, rehearse! Lecturing is a performance.

Humor goes a long way but it should be appropriate and kind. DON’T tell jokes if you’re not good at it.

If you have an interactive classroom, get students comfortable with talking by having them talk to each other.

If you want students to behave a certain way in the classroom, such as having them work in small groups, introduce the behavior the first day and make sure you repeat it each session.

When the class is discussing a question in small groups, use the “triple roar” rule. The first roar is, “What’s the question?” The second roar is students discussing the answer. The third roar (and time to call everyone back together) is, “What are you doing tonight?”

If possible, get to class early and chat informally with the students.

If you expect students to turn their cell phones off, make sure you turn yours off, too!

Plan ahead when teaching a class for the first time. Figure out how long you think it will take to put together each lecture. Then double that time or be prepared to stay up all night. Developing a class for the first time always takes longer than you think.

Teaching with Technology

Technology is wonderful until it doesn’t work. DO be prepared for when it fails.

Have a backup plan in case the computer fails or your file won’t open. Bring a duplicate copy of your presentation file. Have a print copy of your slides so that you can use the chalkboard if all media options fail. (In PowerPoint, select the “handouts” option in the

PRINT window to print multiple slides on one page.)

If you're presenting with a classroom computer console:

PowerPoint software versions are not equal. Open your PowerPoint presentation and run through ALL the slides. Look carefully at equations and symbols, and make sure links to websites or video clips work. My embarrassing moment was the lecture where I put up the slide with Poiseuille's law, only to find a telephone, airplane, and happy face in replace of the delta, eta, and pi symbols in the equation.

Test how to switch from your PowerPoint to a web page or to the document camera.

If using your personal laptop, check what you have set for your desktop image and screensaver. It can be embarrassing if your screensaver turns on and starts running through images of your last family vacation at the beach.

Putting together a PowerPoint presentation takes longer than you think it will.

DO learn simple PowerPoint techniques: how to mask out unwanted sections of images, how to add new labels. Simple animations such as making bullet points appear one by one will help you build your story. Make sure your font size and colors are visible from the back of your room.

Never save your PowerPoint as a presentation because you will then be unable to edit it.

Decide whether you are going to post copies of your PowerPoint slides. If students can learn everything by downloading and reading the slides, why are they (and you) bothering to go to class? Consider posting an edited version instead. If you give students a file that has all the images, long definitions, and a skeleton outline, they can print it out and bring it to class to take notes on. This will make class run smoothly but someone who does not come to class will not know everything that was said.

DO consider your policy on student use of laptops, tape recorders, and cell phones in class and make sure it is clearly spelled out in the syllabus. I ban laptops in the classroom because I want my students interacting with each other and not with a computer screen. I've observed too many lectures where students with laptops were surfing, reading email, or otherwise not actively engaged in what was taking place. I also ban cell phones.

DO consider using a personal response system as part of your teaching. Even if you give a traditional lecture, you will find it enlightening to stop at the end of a 10- to 15-minute section and ask a clicker question or two to test whether the audience understood what you just covered.

One of the new technology innovations coming soon will be software that allows students to use their cell phones as "clickers." I have already made the decision that I will hold to my cell phone ban and not use this software.

I turn down requests from students to videotape my class as I have no desire to appear on YouTube. I do allow students to audiotape. This can be particularly helpful for students whose native language is not English. If they use a tape recorder with a counter or timer, they can note the locations of segments that they need to review, which saves having to listen to the entire recording.

For additional pointers on effective presentations, see the Mentoring Forum article by Susan McKarns on "Delivering a Dynamic Job and Chalk Talk."

Teaching Large Classes

Large classes are not merely teaching – they are performances. To communicate effectively, you must project and be larger than life. Unless you have a booming voice that you can sustain for the entire period, a microphone is a necessity (portable is preferred, to give you mobility).

DO try to create a sense of community in the classroom so that the students become less competitive and more willing to help each other learn. This is not as much of an issue at smaller schools or at institutions where students move through the curriculum as a cohort, but it can be a major impediment to creating an interactive classroom at larger universities where a student may not know anyone else in the room.

DO learn student names. It becomes a form of crowd control. If you call someone by name who has never spoken to you, the students will think you have learned everyone's name, and they suddenly become more responsible about showing up for class. It also shows the students you care about them as individuals.

The best way I've found to learn names is from photos of the class. Even if your school provides photo rosters, the photos may be out of date and the students unrecognizable. I like to have students

stand in front of the board in groups of three to four and write their names over their heads, then take a digital photo. The 4x6" prints then make a good set of flashcards for learning names.

Distributing handouts in a large class can eat up time. Try the "cell division" method. Split the handouts into two piles and give one pile each to two students in the front row. Those students take one handout, then split their pile in two and pass the two piles on to students who continue taking one handout and splitting the remainder into two piles.

Handling Questions When You Don't Know the Answer

DON'T pretend to know the answer. If you do, someone in the class will have worked with the expert in that area and you are sure to be exposed as a fraud.

You can always turn the question back to the class: "Interesting question. What do you think?" or "Can anyone answer this?" Or take advantage of the situation to model for students how you would find the answer. There is nothing wrong with admitting (occasionally) that you don't know. There is no way we can all know everything.

If you have internet access in the classroom, go through the steps you normally use to find the information, explaining what you are doing as you go. Introduce the class to Google Scholar and to PubMed as you search. Many students have never been formally trained in how to do an efficient search, so you can take advantage of not knowing the answer to create a teachable moment.

Testing and Grading

DO develop clear guidelines about what constitutes an excused absence for a class or exam and spell it out in the syllabus. DON'T be shy about requiring documentation for a death, illness, or other family crisis. This will help you avoid the "dead grandmother syndrome" that peaks right around exam time. (For a humorous description of this phenomenon, see Mike Adam's essay at <http://www.math.toronto.edu/mpugh/DeadGrandmother.pdf>.)

Decide in advance how you will handle makeup tests for excused absences. In my class, I give cumulative tests, so the final exam is optional for students with a B and required for students with a C or less. If someone has an excused absence for a test, they must take the comprehensive final exam, which then

counts for 50% of their semester grade. (The final is 40% of the grade for other students.) This policy has almost eliminated the problem of absences for a test.

DO write your tests sufficiently in advance that you (and ideally someone else) can proof them. Number each page and check the page and question numbers for duplicates and omissions. Write the key before giving the exam; it's a good way to find your errors. For free-response questions, restrict the amount students can write by giving them an answer box.

DO be consistent in your grading. The students talk to each other and you'll have a rebellion on your hands if half the

class gets credit for an answer that you counted wrong for the other half.

DO develop a grading rubric before you start to grade. Then look at 5-10 random student answers to see how well the answers match your rubric. A revision of the rubric may be necessary. As you grade, make notes of which answers you give partial credit for and how much credit each partially correct answer gets. If you are grading a large number of tests, this step is essential to maintain consistency.

DON'T post a test key until you have finished grading the tests. Early posting means early protests. If you are

giving multiple choice exams that are graded by computer, look at the item analysis to decide if you will throw out a question or allow multiple correct answers.

DON'T hand tests back until you are ready to dismiss the class. No one will hear a word you say once they have their tests in their hands. If you want to talk about the correct answers, do it before you give the tests back.

Returning tests in large classes can be difficult, especially given guidelines for maintaining student privacy. We put a cover sheet on our tests that has the student name near the top. The test starts on page 2 and grades go on page 2. With this system, we can lay out the tests alphabetically and have students come up in groups to get them while keeping grades confidential.

DO require written challenges to grading. This makes the students think through why they believe they should get credit. Often you will uncover their misconceptions in their written challenges.

An efficient and fair process for students to cite or challenge ambiguous or otherwise unanswerable questions (no, or more than one, correct answer) is to add a last page to an exam for this purpose, with instructions to explain the reason for the challenge. You can tear off the pages and collate them, which is especially helpful if you have a team-taught or large class.

Table 1: Getting Started with a TA.

The following checklist describes some of the duties that you may expect of your graduate teaching assistant. You should make an appointment to sit down with your TA to discuss which duties you expect of him/her.

TAs often:

Attend class. Distribute handouts, take attendance, take notes. Administer quizzes. Operate classroom technology.

Run discussion sections (professor not in attendance).

Hold weekly office hours or review sessions prior to tests or both.

Meet weekly with professor and/or other TAs for the class.

Proctor tests, both at scheduled times and for students who need to take them at other times. Help document cheating.

Type and/or photocopy quizzes, tests, handouts.

Grade homework, quizzes, exams. Maintain course grade records.

Proofread and comment on drafts of exams. Write some exam questions.

Advise students on the course, on other academic matters, and on non-academic personal problems.

Assist with class e-mail and class administration

In lab courses, run a lab section without the instructor present. Participate in setup and cleanup.

Accompany field trips.

Run library errands and sometimes other errands.

Specific points to think about and discuss with your TA

The TA may need a copy or access to the class roster for grading purposes.

Do you plan to make old tests available for students to study from?

How are tests administered and who will be present? Any special procedures enforced to prevent cheating, such as alternate test forms, showing IDs, etc.?

Who will do the grading? Who writes the key to the tests?

How are tests handed back? Who handles student questions about grading?

What is your policy on regrades and grade changes? How/where are grades posted?

How do you plan to tell students what their letter grade is during the semester?

FOR DISCUSSION SECTIONS:

Are discussions required or mandatory? Will discussion attendance be counted in the course grade?

Who sets the agenda for discussion section meetings?

FOR LABORATORIES:

In laboratories, who handles stocking materials if the labs run short in the middle of the week?

What special procedures do you need to know, such as safety and checking out equipment?

Cheating

It would be nice to pretend that academic dishonesty doesn't exist, but the sad truth is that it does. Find out if your institution has an honor code and what the policies are for handling suspected cases of academic dishonesty. At my institution you cannot lower a student's grade for cheating without going through a formal procedure in which the student signs paperwork that either accepts the penalty or requests a formal hearing with the Dean of Students office. It seems rather bureaucratic but you do not want to find yourself in the position of the faculty member who was sued for defamation of character after the president of his institution overturned a cheating penalty that had previously been upheld by the faculty member's Chair and Dean.

What are some of the ways students cheat? Probably the most prevalent and insidious is plagiarism. Many students honestly do not understand what consti-

tutes plagiarism, and this problem is compounded by the ease with which people can cut and paste blocks of text from the web. Depending on what kinds of writing assignments you have, you will have to devise methods to make plagiarism more difficult.

One way to prevent plagiarism if you are assigning the equivalent of a term paper is to require the students to do some type of oral presentation (a poster or brief talk) in which they can be questioned. It is also helpful to change the topics for these assignments from semester to semester. In my lab course, that means we rotate experiments from year to year.

Another strategy is to require students to turn in the title page or first page of each article or book cited. I have students write annotated bibliographies for their projects as a way to force them to start their research early, and I had a serious problem with plagiarism of the article abstracts. Once I required students to turn in the title pages with the abstracts, the plagiarism all but disappeared.

How can you find the source if you suspect a paper is plagiarized? Many institutions subscribe to software or web sites that will help with this task. Any easier way is to find a sentence or phrase that you suspect has been lifted from another source and copy it into a Google search box with quotes around it. You will then find any online resources that match the quote. I caught one student who made up a citation and "wrote" his bibliography annotation by lifting a paragraph from a professor's website. Here are some helpful resources for educating students about plagiarism:

Dee Silverthorn is a comparative physiologist and Senior Lecturer in Integrative Biology at the University of Texas at Austin. She teaches a large undergraduate physiology lecture course, where she is incorporates active, inquiry-based, and cooperative learning. Her success with nontraditional approaches has been recognized by a number of university and national teaching awards, including the APS Guyton Physiology Educator of the Year (2001). She also develops investigative laboratories for students and teaches a "preparing future faculty" graduate course. Dee recently completed a six-year term as editor of Advances in Physiology Education and a three-year term on APS Council.

Preventing plagiarism: <http://www.lib.utexas.edu/services/instruction/faculty/plagiarism/preventing.html>.

Interactive tutorial on what constitutes plagiarism: <http://www.lib.utexas.edu/services/instruction/learningmodules/plagiarism/about.html>.

Guide for students, with examples: <http://www.utexas.edu/lbj/students/writing/plagiarism.pdf>.

DO establish a set of rules for testing situations, be explicit about them in the syllabus, and enforce them. Cheating on tests may be worse in large classes where students feel some sense of anonymity. Sometimes the cheater is working alone, but all too often there is collusion. This can range from elaborate systems using cell phones and pagers to communicate to "cheating rings," where students pay other students to take their tests for them. Some testing rules to consider include no talking except to the instructor; students with wandering eyes will cause someone to be moved to another seat; no books, backpacks, coats, etc. at the student's seat; no hats except baseball caps turned backwards. No calculators unless specifically permitted; no memory calculators; no cell phones or pagers. Exams cannot be written in red or pink ink; no "white-out"; exams written in pencil will not be re-graded if there is any evidence that the answer has ever been erased. There must be one empty seat between students. If a student leaves the room once the exam has started, s/he may not return.

If you suspect cheating, you should do whatever you can to stop it (take away notes, move someone) but you should always let the suspect(s) finish the exam. If possible, have someone else in the room to help proctor the exam and ask the second person to witness any suspicious activity. You may not search a student's personal belongings or person without their explicit permission.

DO Know the Rules and Ethics.

Some of these will vary by institution but others are universal.

Know your institution's policies on handling students with disabilities, particularly those that require special classroom or testing accommodations. Some students are allowed double time for tests (unless speed is one of the skills being tested) or must have a low-distraction environment. You usually receive a written notification from the office for students with disabilities that spells out what special considerations a student

needs, and you must meet those accommodations, even if it is inconvenient.

The Family Educational Rights and Privacy Act (FERPA) governs the privacy of student records and academic performance. If a student is over 18, you cannot talk to Mom and Dad about their child unless you have explicit permission from the child. If Mom and Dad get nasty, refer them to the Dean.

Know your institution's resources for students with emotional or psychological problems. Where can you send students who are depressed or suicidal? You should also know the institution's recommendations or rules for handling in-class disturbances. Who do you call when a student who just failed your test puts his fist through the glass door to the classroom?

Most schools have a sexual harassment policy. In general, you should not socialize with students until they are no longer your students. But sexual harassment works both ways, and students who become obsessed with you can be very creepy. Know who to contact if a student starts stalking you.

We recommend to new faculty that they keep their home address and phone number unlisted. Many students are night owls and you may not appreciate a 1:00 AM call from the study group who can't agree on the right answer to a question.

Watch What You Say to Students

If you want information to spread, tell a student. Their communication network is amazing. Unfortunately, the network also can work like the whisper game, where the original message is significantly altered after being filtered through many iterations. Use discretion and never talk about one student to another except in the most general, unidentifiable terms.

Working with Teaching Assistants

Many of you reading this are at institutions that do not use graduate teaching assistants (TA). But if you are at a school where graduate students teach the laboratory classes or extra sessions associated with a lecture class, (called discussions, tutorials, or recitations, depending on the school), you will find that this adds another dimension to your teaching obligations. All too often faculty members do not think about the mechanics of working with a TA. Table 1 is a set of questions that can serve as a guideline to setting expectations for your TAs.

Improving Your Teaching

Find an on-campus mentor, ideally one who has taught in the same area.

Connect with your school's Center for Teaching Excellence (CTE) or equivalent. They can be an invaluable resource. They usually have classes to teach you how to use the campus technology, such as course management software (e.g., Blackboard) and classroom response systems. Many CTEs will video your class, then sit down with you and give constructive feedback on how you might improve your teaching. (Aside: Our CTE profes-

sionals were appalled by how much vocabulary/jargon is used in the average biology class—more per session than in the typical foreign language class.)

Consider giving your class an anonymous, informal mid-semester evaluation of the class and your teaching. It can be as simple as “What do you like best about the class? What do you like least? What can I do to improve the class this semester?” And if the students make constructive suggestions, try to implement them.

In Summary

This sounds like a lot to remember – and it is. The bottom line is that teaching should be fun and exciting, something you look forward to. Don't worry when you make a mistake. We all do (even experienced teachers). Maintain your sense of humor, know your options, and establish a support system of colleagues.

Many thanks to the colleagues who contributed pearls to this article.

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



APS Councillor Joey Granger, University of Mississippi Medical Center, visits a second grade classroom to engage and inspire students in learning about the heart. Granger left the students with PhUn Week sportpack bags and the teachers with PhUn Week t-shirts. Get ready for PhUn Week 2009 by visiting www.PhUnWeek.org and connecting with a teacher now!

PhUn in November!

PLAN FOR THE AMERICAN PHYSIOLOGICAL SOCIETY'S
ANNUAL PHYSIOLOGY UNDERSTANDING WEEK
DURING THE 1ST WEEK IN NOVEMBER...

- **August:** **PARTNER** with a teacher NOW! Visit www.PhUnWeek.org and email phunweek@the-aps.org for program info.
DEVELOP a plan with the teacher.
- **September:** **SUBMIT** the PhUn Week Event Planner. Quantities of freebies are limited. Requests are on a first-come, first-served basis.
- **October 1:** **DEADLINE** for PhUn Week Event Planners.
- **Mid-October:** **PUBLICIZE** in local news outlets.
- **November:** **PhUn Week! VISIT** a classroom!

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ILAR Committee Issues Class B Report

The ILAR Committee on Scientific and Humane Issues in the Use of Random Source Dogs and Cats in Research issued its final report on May 29, 2009. The committee found strong evidence of an ongoing need for random source dogs and cats in several important areas of NIH-funded research. It also called upon researchers to replace Class B dealers as suppliers of these animals due to continuing Animal Welfare Act (AWA) enforcement problems. However, it tempered this suggestion because of evidence that it may be difficult to obtain certain kinds of animals from sources other than Class B dealers: "[I]t is not necessary to obtain random source dogs and cats for NIH research from Class B dealers, provided that alternative sources of animals with similar characteristics can continue to be assured." (1)

The panel did not address needs for random source animals in veterinary testing and research or in medical and veterinary training.

The panel stated that NIH-funded researchers may be able to obtain the animals they need from Class A breeders, pounds and shelters, hobby breeders, and owner donations. At the same time, however, the committee acknowledged potential limitations of each of these alternative sources, particularly with respect to older animals. It, therefore, recommended that Congress provide NIH with funding to develop new sources of supply.

The ILAR report was commissioned to provide Congress with expert advice to help it sort through conflicting claims made by researchers and animal rights groups about the need for Class B dealers. The report does not offer an easy solution since it provides support for both points of view. It observed that there are animal welfare problems with some Class B dealers, but it also pointed out the animals that Class B dealers

provide are scientifically necessary and would be difficult to obtain from other sources.

1. NRC (National Research Council) *Scientific and Humane Issues in the Use of Random Source Dogs and Cats in Research*. Washington, DC: National Academies Press, p. 6.

Applications for Stimulus Funds Strain NIH Peer Review System

The NIH Center for Scientific Review has begun dealing with an unprecedented jump in grant applications as scientists apply for \$10.4 billion of research money made available through the American Recovery and Reinvestment Act of 2009 (ARRA). In June, the NIH Center for Scientific Review (CSR) reported having received more than 20,000 applications for Challenge grants following the April submission deadline.

Challenge grant applications will be evaluated under the new peer review guidelines in a two stage process, following the editorial board model recently piloted by CSR. During the first stage, applications will be sent out to reviewers for initial assessment. The second stage will involve 30 special study sections charged with evaluating overall impact and significance. CSR expects as many as 18,000 reviewers will participate in the Challenge grant review process.

Initial plans at NIH called for funding approximately 200 Challenge grants. However, following the large influx of applications NIH officials are now considering funding another 200 grant applications through the institutes and centers. Given the small number of awards and the large number of applications received, success rates are projected to be low. Consequently, NIH officials expect to see many of the applications incorporated into R01 proposals in future review cycles, which will continue

to strain the peer review system.

In addition to the Challenge grants, NIH is also evaluating applications for competitive revisions, administrative supplements and other applications for ARRA funding. A complete list of funding opportunities is available on the NIH website, as well as a link to awards that have been made with ARRA funds.

Recovery Act Funding at NIH:
<http://grants.nih.gov/recovery/>.

APS Supports the Pro-Test Petition

The American Physiological Society urges its members to sign the Pro-Test Petition at <http://www.raisingvoices.net> to show support for humane animal research. Sponsored by Americans for Medical Progress, Speaking of Research, and UCLA Pro-Test, this petition is a way to publicly demonstrate support for the humane use of animals in research.

The petition states that animal research has contributed and continues to contribute to medical advances; that humanely conducted animal research is morally justified when alternatives are not available; and that violence against researchers is wrong. If you agree with these statements, please consider adding your name to the growing list of researchers standing up to animal rights extremists.

The Pro-Test Petition is modeled after a 2006 petition in the UK that gathered the signatures of over 20,000 people, including then-Prime Minister Tony Blair. The UK petition was an integral part of a movement that turned the tide of public opinion in that country in favor of animal research. As a result, in 2008 Oxford University was able to complete the construction of a research facility laboratory that had been delayed for more than a year due to harassment and intimidation by animal rights extremists. ❖

Moving?

If you have moved or changed your phone, fax or Email address, please notify the APS Membership Office at 301-634-7171 or Fax to 301-634-7241. Your

membership information can also be changed by visiting the Members Only portion of the APS Website at <http://www.the-aps.org>. ❖

Postdoctoral Positions

Postdoctoral Fellowship: Cardiovascular physiology. A two- to three-year postdoctoral position is available in the laboratory of GE Billman at The Ohio State University. Studies are directed toward understanding the mechanisms responsible for ventricular fibrillation. Current studies are evaluating the effects of diet (omega-3 polyunsaturated fatty acids) or endurance exercise training on cardiac autonomic regulation, myocyte electrophysiology, and susceptibility to ventricular fibrillation. Experiments use a chronically instrumented canine model of sudden cardiac death. In addition to the intact animal studies, biochemical and electrophysiological studies are performed on isolated cardiomyocytes. Applicant must have experience preparing large (i.e., non-rodent) models of cardiovascular disease, hold a doctoral degree (PhD, DVM, or MD in physiology or closely related field e.g. pharmacology), and must be a US citizen or permanent resident eligible for NIH training grant support. Salary and benefits will be commensurate with experience and in accordance with NIH guidelines. Submit a letter of application indicating research interests, career goals, a curriculum vitae, and the names with contact information of two references to: George E. Billman, PhD, Department of Physiology and Cell Biology, The Ohio State University, 304 Hamilton Hall, 1645 Neil Ave., Columbus, OH 43210-1218, Email: billman.1@osu.edu. [EEO/AA]

Postdoctoral Position: Position available at the University of Vermont, Department of Obstetrics Gynecology and Reproductive Sciences to conduct NIH-funded research project on cellular and molecular mechanisms of uterine vascular dysfunction in diabetic pregnancy. The successful candidate will use a combination of state-of-the art techniques: pressurised microvessels, fluorescent microscopy, electrophysiology of intact vessels and of isolated cells to characterize the effects of experimental diabetes in rat pregnancy on ion channel function of smooth muscle and endothelial cells of uteroplacental arteries. A MD or PhD in biological sciences with at least two years experience in patch-clamp electrophysiology is required. The

position will remain open until filled. A commitment of at least two years is required. Salary and benefits will be commensurate with experience and in accordance with NIH guidelines. Interested applicants should email a letter of application, current curriculum vitae or resume, and the names and contact information (including email addresses) of three professional references to Dr. Natalia I. Gokina at Natalia.Gokina@uvm.edu.

Postdoctoral Position: A postdoctoral position is immediately available in the laboratory of Walter Boron at the Case Western Reserve University, Cleveland, OH, Department of Physiology & Biophysics. The successful candidate should have a strong electrophysiology background, preferably with experience in patch clamping. Please send a cover letter, CV and a list of three references with contact information by Email to: Walter F. Boron, MD, Ph.D. (walter.boron@case.edu). In employment, as in education, Case Western Reserve University is committed to Equal Opportunity and Diversity. CWRU is a recipient of a National Science Foundation ADVANCE Institutional Transformation Grant to increase the participation of women in Science and Engineering.

Postdoctoral Position: Position available to study the transcriptional regulation and function of myosin light chain kinase (MLCK) in vascular smooth muscle and endothelial cells. The overall goal of our laboratory is to better understand the mechanisms that control the differentiation and contractility of smooth muscle cells. Toward this goal we are analyzing the transcriptional pathways that regulate expression of smooth muscle contractile proteins and how these pathways are controlled by epigenetic mechanisms. To do this we are using a combination of in vitro cell culture experiments together with tissue specific mouse knockout models. The position available would be focused primarily on determining the role of the 130kDa isoform of MLCK in regulating smooth muscle contractility, migration and proliferation. Using a cre/loxP system to delete key regulatory elements within the 130kDa MLCK promoter we will be able to specifically ablate expression of this isoform of MLCK without

affecting the expression of other products of the mylk1 gene. The applicant will also have the opportunity to participate in other ongoing projects within the laboratory. This is an NIH-funded position that is initially available for two years. Priority will be given to US citizens and permanent residents. Interested applicants please send a CV and list of references to Dr. Paul Herring, Department of Cellular and Integrative Physiology, Indiana University School of Medicine, 635 Barnhill Drive, Indianapolis, IN 46202. Email: pherring@iupui.edu. Website: <http://medicine.iu.edu/body.cfm?id=4882&TopID=5065>.

Postdoctoral Position: Applications are invited for a Research Associate (postdoctoral) to join a team of investigators in the Molecular Cardiovascular Research Program in the Department of Physiology at the University of Arizona led by John P. Konhilas, PhD. Specific studies investigate the mechanisms underlying the impact of sex/gender, disease and exercise on molecular and cellular biology of the heart and how it affects cardiac contractile function and myocellular signaling. These include investigating mediators of myocellular energy balance and contractile energetics. A variety of cellular, molecular and physiology techniques are employed to address these studies. The applicant must be able to independently plan and execute research activities including data collection, evaluation and analyses. The preferred applicant will be required to have already gained expertise either in biochemistry, molecular and cellular cardiac biology or capable of performing mechanical measurements of cardiac function at the cellular and whole heart level. The post is available as soon as possible and will continue indefinitely. Applicant must hold a doctoral degree (PhD, DVM, or MD in closely related field). Salary and benefits will be commensurate with experience and in accordance with NIH guidelines. Submit a letter of application indicating research interests, career goals, a curriculum vitae, and the names with contact information of two references to: John P. Konhilas, PhD, University of Arizona, PO Box 245051, 1656 E Mabel St, Tucson, AZ 85724. Or, visit the University of Arizona Human Resources Website (<https://www.uacareertrack.com/>) and search for Job Number 42887 to apply online.

Postdoctoral Scholar: A Postdoctoral Scholar position in Cardiovascular Physiology Research is available immediately in the Department of Physiology at Brody School of Medicine, East Carolina University in Greenville, North Carolina, in the laboratory of Dr. David A. Tulis, F.A.H.A., Associate Professor. The overall research focus in our laboratory is vascular smooth muscle physiology and pathology. Specifically, we are investigating molecular, cellular, and functional mechanisms that underlie abnormal growth of vascular smooth muscle as integral to cardiovascular disease and injury. Cyclic nucleotide signaling is of particular interest in these studies, as these events regulate a wide range of homeostatic and pathophysiological actions. Specific areas of study include elucidation of cyclic GMP- versus cyclic AMP-dependent processes, identification and characterization of potential cyclic nucleotide-regulating systems, identification of unique downstream kinase events, potential impact on matrix/MMP and gap junction biology, and general elucidation of the functional impact of these signals on vascular physiology. Experimental approaches in these studies include a variety of functional, molecular, cellular, and genetic assays and consist of whole animal models, in vitro cell culture, and ex vivo tissue explants. Salary and benefits will be commensurate with experience and in accordance with NIH guidelines. Women and minorities are encouraged to apply. Review of applications will begin immediately and will continue until the position is filled. Please visit <http://www.ecu.edu/cs-dhs/physiology/tulisd.cfm> for more information. Please send an updated C.V., a statement of research interests, and contact information for three references to tulisd@ecu.edu, and include "Post-doctoral Scholar" in the subject line.

Faculty Positions

Physiology and Research, Full Time Faculty: Founded in 1908, Texas Chiropractic College is the fourth oldest chiropractic college in the nation and recognized as one of the very best. TCC is accredited as a Level V doctoral degree granting institution by the Southern Association of Colleges and Schools. TCC has also maintained continuous accreditation Council on

Chiropractic Education and enjoys a stable and secure financial condition, as well. Its first-of-its-kind Hospital Rotations Program is a pioneer in the integrated health care field. The program provides interns the opportunity to rotate in hospitals and clinics throughout the Houston metropolitan area, including the world-renowned Texas Medical Center. Texas Chiropractic College is the Future in Health Care. Position Summary: Faculty members teach in their appropriate division and department and participate in all committees assigned. Responsibility generally includes teaching in two of the three following areas: Cellular and Cardiovascular Physiology: an overview of the structural and functional aspects of membrane transport and muscle physiology; Endocrine and Neurophysiology: studies the endocrine and nervous systems, their relationship to control and regulation of the internal environment and their contribution of homeostasis; Renal, Respiratory and Gastroenteric Physiology: relates the mechanisms of renal, respiratory, gastroenteric and metabolic functions with an emphasis on clinical as well as normal functions; teach a full time load as defined by letter of appointment; represent the college in the local and academic community; evaluate/design improved curricula in area(s) of expertise. Qualifications: PhD in Physiology, Biology or related field of study, per CCE requirements; teaching experience preferred; capacity for close, regular interaction/guidance with students; ability to develop evaluation instruments and assist with curricular development; ability to assess performance/learning with documentation; ability to work closely with other course instructors; willingness to expand his/her own knowledge base to fit the needs of the institution. Job Conditions: A standard part-time course load as defined by the letter of appointment. Ability to handle pressures of balancing the time required to deal with individual problems of students with completing the necessary planning, reports, meetings and teaching responsibilities is expected. Standard classroom and office conditions. Salary: based on experience. Contact: Sue Arnold, Director of Human Resources, Office 281.998.6003, Fax 281.998.5788, or Email sarnold@txchiro.edu.

Visiting Faculty Position in Biology: The Department of Biology at Washington & Lee University is seeking

applications for a one-year visiting faculty position in animal physiology, starting Fall Semester 2009. Among the courses to be taught are animal physiology with lab, and two courses related to the person's area of expertise (e.g., reproductive physiology, neuroendocrinology, endocrinology, nutrition, microanatomy, neurobiology, etc). Completion of the PhD is preferred, but we will consider well-qualified ABD applicants. A complete description of the Department of Biology is accessible from the university web site: <http://www.wlu.edu>. Applications will be considered immediately and until the position is filled. Applicants should submit a letter of application, including curriculum vitae and statements of teaching goals and interests, to iansonh@wlu.edu. In addition, signed hard copies of three reference letters should be sent by referees directly to: Dr. Helen I'Anson, Department of Biology, Howe Hall, Washington & Lee University, Lexington, VA 24450. Women and minorities are encouraged to apply. [AA/EOE]

Faulty Post: Ross University School of Medicine, located on the beautiful Caribbean island of Dominica in the West Indies, invites applications for a faculty post at any rank in the Department of Physiology. Our mission is to prepare highly dedicated students to become effective, successful physicians in the United States. Basic science coursework is taught in Dominica and students then complete their clinical studies in the United States. After passing all prerequisite examinations, Ross graduates are licensed to practice medicine in all 50 states of the US. Ross University School of Medicine is a division of DeVry, Inc., (NYSE:DV). Education is the primary focus of the faculty. The academic year is divided into three semesters with a new class of students admitted each semester. Lectures and other educational responsibilities continue throughout the year. Effective teachers are sought, particularly individuals who are interested in improving medical education and who work well on a team. Research opportunities exist, primarily in the area of medical education. Essential Duties and Responsibilities: the preparation of course material (handouts etc.); the delivery of effective lectures; the preparation, administration, marking and reporting of examinations; undergo

training to qualify as a facilitator in the problem-based learning program; supervise educational activities of students under actual or simulated situations; prepare instructional plans and career analyses to reflect current changes in the field; advise individuals or groups of students in academic matters and exercise professional judgment in referring students to appropriate personnel; develop new instructional materials and teaching techniques with participation in on-going reviews and revision of curriculum planning; actively participate in relevant professional activities in order to improve teaching and subject matter competence; serve on faculty committees as appointed or elected, and confer with advisory groups in order to modify course content; prepare, administer and evaluate examinations to assess the development of student accomplishments; participate in other activities as assigned by the department chair or executive dean. Qualifications: content expertise in endocrine, reproductive, respiratory, renal or GI physiology; ability to relate physiology to clinical scenarios; experience in computer-assisted delivery of course content; excellent communication skills in English; strong teaching skills and experience or evidence of potential; interest in medical education; desire for self improvement; flexibility and ability to work well on a team. Education, Experience, Knowledge and Skills: PhD, MD or MD/PhD degree in physiology; enthusiastic teacher with previous teaching experience at a North American or United Kingdom medical school. Ross University offers a competitive potentially tax-free annual salary, relocation assistance to and from the island, a deferred pension program, tuition assistance benefit, scholarship program for dependents, 100% medical benefits paid for the employee, travel benefits, a living allowance, 35 days of paid annual leave is provided along with opportunities for professional development, which includes a conference and book allowance. To apply, please visit our website <http://www.rossu.edu>; select Careers and complete our online application process. [EOE]

Master Educator Training Program (METP) - Dominica: Ross University School of Medicine is pleased to announce that it is seeking applicants for a one-year Master Educator Training Program. This program is open to indi-

viduals who graduated recently with an MD or a PhD in one of the basic sciences. Training is offered in the following departments: Anatomy, Behavioral Science, Biochemistry, Clinical Medicine, Microbiology/Immunology, Pathology, Pharmacology, and Physiology. The training program affords the opportunity to receive hands-on experience in large group, small group, problem-based-learning and one-on-one teaching. In addition, trainees participate in workshops that provide skills in learner and program evaluation, curriculum design, educational theory, leadership and mentoring. Finally, trainees will be exposed to educational research either through participation in an on-going project or by the development of their own project. After successful completion of the program, trainees are awarded a certificate of achievement. Ross University School of Medicine is located on the beautiful Caribbean island of Dominica overlooking Prince Rupert Bay near the city of Portsmouth. Each trainee will receive an annual stipend of US \$40,000 and health care coverage. In addition, there is a book and an educational meeting allowance. Transportation to and from Dominica for the trainee (and spouse or partner) at the beginning and end of the program is provided. Qualifications: A strong interest in medical education as part of one's career; MDs or PhDs who have graduated from an accredited US university (preference will be given to those who have graduated within the last three years); a desire to improve educational skills; excellent interpersonal and communication skills; flexibility in being able to adapt to life in a developing country. How to apply: Individuals interested in applying for the Master Educator Training Program should submit the following: a copy of an official transcript from the school that awarded the MD or PhD degree; a resume/CV plus current contact information; a letter of intent (two to three pages) that outlines: why you have applied, your educational philosophy, previous teaching experience, how this training will benefit your long-term career goals, if known, a potential educational research topic; contact information (name, title, mailing address, email address, phone number) for two individuals who can speak to your interest in education. At least one of these individuals must have worked closely with you during training for your advanced degree (e.g., faculty

mentor or thesis advisor). Please Email all materials to Jyostna Pandey, MD/PhD at jpandey@rossmed.edu.dm Competitive applicants will be invited to the school for an interview after review of the submitted material by the METP Steering Committee.

Research Position

Research Interdisciplinary (Research): Supervisory Research Nutritionist/Research Psychologist/Research Physiologist (Research Leader), GS-0630/0180/0413-14/15, GS-14: \$95,010 - \$123,519 (per annum), GS-15 111,760-\$145,290(per annum): The USDA, Agricultural Research Service (ARS), is seeking a permanent, full-time scientist to serve as Research Leader of the Nutritional Determinants of Health Management Research Unit at the Grand Forks Human Nutrition Research Center in Grand Forks, ND. The incumbent will be responsible for conducting independent research and leading a multidisciplinary research unit focused on the health roles of foods and food factors, with emphasis on food habits, physical activity, and other lifestyle factors relevant to obesity prevention and maintenance of healthy body weight. The incumbent plans, implements, and reports the results of research on the roles of mediating factors for individuals that influence behaviors, including eating and physical activity behaviors, important to achieving and maintaining a healthy body weight. A comprehensive benefits package includes paid sick leave and annual leave, life and health insurance, a savings and investment plan (401K type), and a Federal retirement plan. For more information on the research program and/or position, or to have a copy of the announcement mailed to you, please contact, Ms. Susan Sorum at 701-795-8358. Complete information and application procedures may be obtained at <http://www.afm.ars.usda.gov/divisions/hrd/vacancy/VAC2.HTM>. Send applications to: USDA, Agricultural Research Service, Human Resources Division, Attn: Catherine Beck, 5601 Sunnyside Avenue, Stop 5106, Beltsville, MD 20705-5106, Fax: (301) 504-1573; Email: scirecruit@ars.usda.gov. Applications must be marked ARS-X9W-0211 and postmarked by August 3, 2009. US Citizenship is required and must be verified before entrance on duty. [EOE]. ❖

Daniel C. Tosteson (1925-2009)

Daniel C. Tosteson, who served as the American Physiological Society's 46th President (1973-1974), died of complications from Parkinson's Disease on May 27, 2009. A native of Milwaukee, WI, he was 84 years old.

Dan Tosteson had a long and distinguished career as a scientific investigator, educator, and science policy-maker. He completed his undergraduate studies at Harvard College in 1944 and graduated from Harvard Medical School in 1949. He did his internship and residency at the Presbyterian Hospital in New York City. From 1951-1957, he was a Resident Fellow at the Brookhaven National Laboratory, the National Heart Institute, the Biological Isotope Research Laboratory in Copenhagen, and the Physiological Laboratory in Cambridge, England. Thereafter, he was appointed Associate Professor in the Department of Physiology at Washington University in St. Louis and, three years later, accepted the Chairmanship of the Department of Physiology and Pharmacology at Duke University Medical Center. Ten years later, he was named James B. Duke Distinguished Professor. In 1975, Tosteson became the Lowell T. Coggeshall Professor of Medical Sciences and Dean of the Division of Biological Sciences in the Pritzker School of Medicine and Vice President of the medical center at the University of Chicago. Two years later, he relocated to Harvard as Dean of the faculty of medicine, President of the Harvard Medical Center, and the Caroline Shields Walker Distinguished Professor of Physiology and, later, Cell Biology. He remained as the Caroline Shields Walker Distinguished Professor of Cell Biology until he stepped down as Dean.

Tosteson's research interests. Tosteson's research interests were in the area of general physiology. Specifically, he had a long-standing interest in cellular functions and molecular mechanisms of ion transport across biological membranes. This interest originated during his education at Harvard, where he studied under the instruction of Professors Landis, Davenport, Hastings, and Pappenheimer (Landis, Davenport, and Pappenheimer were all APS Presidents and A.B Hastings served from 1945-1946 as President of the American Society of Biochemistry and



Daniel C. Tosteson

Molecular Biology). It was while Tosteson was a medical resident in New York City, that he began his studies of ion transport across red cell membranes. Later, during his postdoctoral years, he became well acquainted with Drs. Ponder, Parpart, Jacobs, Ussing, Hodgkin, Keynes, Glynn, Van Slyke, and others. It was then that he also met Joe Hoffman. This meeting was critical because it spawned a collaboration that resulted in a paradigm-defining, classic concept in physiology; namely, the "pump leak" hypothesis (Regulation of cell volume by active cation transport in high and low potassium sheep red blood cells. *J Gen Physiol* 44:169-194, 1960). It was in this work that the pump leak hypothesis was first introduced into the literature.

Tosteson as a transformer. With the publication of this paper, Tosteson established himself as a transformer in the field of ion transport. His research subsequent to the publication of this article extended this tradition. Many investigators traveled to Durham, Chicago, and Boston to work in his laboratory. He established a culture of transport that continues to this day: from students and associates and, in turn, their students. Not only was he a transformer in this important area of research, but he was also a transformer of both medical and graduate education. It was through Tosteson's vision, determination, and persistence, that the new pathway for medical education was introduced in

1985 at the Harvard Medical School. Tosteson recognized well before then that there would be an exponential explosion in biomedical information that would be available to practicing physicians and scientists. He also understood that the complete mastery of all this information was, is, and will be, far beyond the capabilities of any single person. Moreover, information available today would be obsolete in the future. He also believed that active learning, inquiry, discovery, and the ability to ask appropriate questions, would serve future physicians and scientists in the best capacity possible. In other words, he strongly believed that a biomedical physician or scientist should be able to frame hypotheses and test them to learn how to arrive at solutions without a complete repertoire of information being available. Thus, developing and refining skills of inquiry and research were essential for lifelong learning, flexibility, and encounters with both patients and scientific problems (which he saw as a continuum). As he finished his tenure as Dean, he wrote "...the 21st century will be the era of biology and medicine. We have learned the chemical basis of inheritance. We now know that one genetic code is used by all forms of life that we have yet encountered. We have developed a conceptual and technical tool to identify all of the molecules present in each of the cells in the human body and how they interact and perform the dance of life. During the next century, we will learn much more clearly, our place in the biosphere of planet Earth. This understanding will transform fundamentally how we think about human health and disease. It will enable a medicine that is now impossible for us to imagine." To cope with this fundamental change, he encouraged interdisciplinary and inter-institutional research initiatives. He created the Harvard Institutes of Medicine, the Harvard Center for Structural Biology, The Harvard Institute of Human Genetics, as well as the creation de novo of new departments of Genetics, Cell Biology, Molecular Pharmacology, Health Care Policy, and Social Medicine. In addition to the New Pathway for General and Medical Education, during his tenure as Dean, he also reorganized graduate studies and established an integrated biological and biomedical sciences program that offered

a unified approach to the study of the biological sciences basic to medicine.

Tosteson belonged to several distinguished scientific societies other than The American Physiological Society. These included the Association of American Physicians and the American Academy of Arts and Sciences. He was also a fellow of the American Association for the Advancement of Science. He served on many national and international committees and boards, including the Dupont Scientific Advisory Board and the Pew Scholar's Program. He served as Director of the Washington Advisory Group until his death. He was Chairman of the Association of Medical Colleges as well as several of its committees, including the task force on physician supply. He was also a member and President of the Institute of Medicine of the National Academy of Sciences and


served as President of the American Academy of Arts and Sciences, and the Society of General Physiologists.

Tosteson was the recipient of many honors and awards, including the Abraham Flexner Award for Distinguished Service to Medical Education, awarded in 1991, and an Honorary Doctorate of science from New York University in 1992, Honorary Doctorate of Humane Letters from John Hopkins in 1993, a Doctorate Honoris Causa from the Universite Catholique de Louvain in 1996, an Honorary Doctor of Science from Duke University in 1996, and a Doctor of Science Honoris Causa from Emory, also in 1996, among others.


Tosteson will be remembered for his keen intellect, his passion for science and medicine, and the ease with which he could speak on nearly any topic of

biomedicine, art, literature, poetry, or politics. He was particularly fond of the poetry of Robert Frost. He understood that the creative arts and medicine were more alike than different, and that each "medical encounter is unique in a personal, social and biologic sense. ... Each patient lives in a specific social context. Each patient is the expression of a genome that has never existed before." He could make scientists and physicians of all stature feel important, and talk easily and comfortably with students, faculty, politicians, patients, business men and women, and the lay public. Daniel Tosteson was a true Renaissance man and visionary. His enthusiasm and commitment to those around him will be sorely missed. Tosteson is survived by his wife, Magdalena, his five children, and his five grandchildren. ❖


WE ARE ALL PHYSIOLOGISTS



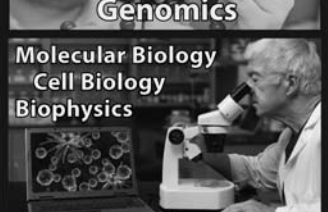
Medical Sciences




Biochemistry




Comparative & Evolutionary




Molecular Biology
Cell Biology
Biophysics




Neuroscience



Pharmacology
Drug Discovery



Genomics




Sports
Medicine

OUR RESEARCH INCLUDES:

- Biochemistry
- Cell Biology
- Genomics
- Molecular Biology
- Biomathematics
- Comparative & Evolutionary
- Medical & Veterinary Sciences
- Neuroscience
- Biophysics
- Pharmacology

APS Members are individuals worldwide whose work focuses on a wide variety of disciplines devoted to human and animal health and function—including systems biology, genomics, translational research and all other life sciences.

The majority of this international membership hold doctoral degrees in physiology, medicine, or other health professions; and they are employed in universities, hospitals, industrial organizations, medical schools, private foundations, and government. APS also has Student and Affiliate members.



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Campbell Presented with March of Dimes Prize

APS Member, Kevin P. Campbell, was one of two scientists presented with the 2009 March of Dimes Prize in Developmental Biology for work which has led to new and better ways to diagnose and potentially treat muscular dystrophy have been chosen to receive. Campbell's pioneering work helped identify the genes and proteins that cause muscular dystrophy, a disorder in which the muscles progressively degenerate. Campbell is a Howard Hughes Medical Institute investigator, professor and head of Molecular Physiology and Biophysics at the University of Iowa Roy J. and Lucille A. Carver College of Medicine. He is also the Roy J. Carver Chair of Molecular Physiology and Biophysics and Director of the Senator Paul D. Wellstone Muscular Dystrophy Cooperative Research Center.

John Faulkner Honored for Service to the University of Michigan

Family, friends, and colleagues recently celebrated "John Faulkner Day" in recognition of John Faulkner's 49 years-and counting-of service to the University of Michigan. A congratulatory luncheon was hosted on June 4, 2009 by Bishr Omary, Chair of the Department of Molecular & Integrative Physiology. Faulkner joined the faculty of the University of Michigan in the School of Education in 1960 and moved to the Physiology Department as an Associate Professor in 1966. He currently holds the title of Professor of Physiology and Biomedical Engineering. Faulkner has also been a member of the American Physiological Society (APS) for over 41 years.

APS President Gary Sieck and APS Executive Director Martin Frank were both in attendance at the luncheon and read a proclamation issued by the Society acknowledging the extensive and important contributions made by Faulkner to research, teaching, and mentoring in the field of Physiology. Faulkner was presented with a commemorative plaque engraved with the APS proclamation. Remarks were also given during the celebration by James Woolliscroft, Dean of the Medical School and University President Mary Sue Coleman, who honored Faulkner with a



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APS President Gary Sieck and APS Executive Director Martin Frank congratulate APS member John Faulkner on 49 years of service to the University of Michigan.

Lifetime Service Award as the longest-serving active faculty member of the Medical School.

A fiercely loyal Wolverine football fan, Faulkner was also presented with a University of Michigan football helmet by former Head Football Coach, Lloyd Carr. The highlight of the event for attendees was a lecture presented by Faulkner describing the unlikely path that brought him to the University of Michigan over 50 years ago and how he has sustained a 49-year career at Michigan. The story included accounts of his childhood as a working class kid in Ottawa, Ontario, his perilous years as a Spitfire pilot in England during WWII, and a chance encounter with an acquaintance that was headed off to university at a time when Faulkner was completely undecided about what to do after the war.

Faulkner also spoke of returning to the high school, from which he barely graduated, as a teacher, of his trips between Ontario and Ann Arbor as he pursued his graduate studies, his years at the University of Western Ontario as a faculty member and swim coach, and his ultimate move to Michigan where he finished his PhD and has remained an integral member of the University of Michigan community for half a century.

APS Receives Donation of Artwork from Felix Bronner

Did you listen to the Living History interview of APS member, Felix Bronner, University of Connecticut Health



APS member Felix Bronner admires his personal artwork which was donated to the APS by his family and hung in the Society's offices.

Center, Farmington, which is available at <http://www.the-aps.org/livinghistory/>. If you did, you would have discovered that not only is Bronner an outstanding physiologist, but he is also an accomplished artist. Indeed, his works can be viewed at <http://www.felixbronner.com/>. As was noted in a 2003 review in ARTnews, his work is described as a “studied homage to the Abstract Expressionists, evoking Adolph Gottlieb, William Baziotis, and Mark Rothko in particular....Bronner layers transparent shapes over expanses of softened colors, with the occasional opaque geometric forms dominating the canvas...”

The Society is pleased to announce that Dr. Bronner and his family have generously donated two of his works which are now on display in the reception area of the APS Offices. The works are titled “Playing with Shapes” and “Verspielt (Lost in Play).” Recently, Felix Bronner visited the APS Offices to view the hanging of the pictures. The APS thanks the Bronner family for their generous donation.

Purvis H. Bedenbaugh is Assistant Professor of the Department of Engineering, East Carolina University, Greenville, NC. Prior to this position Dr. Bedenbaugh was Assistant Professor of the Department of Neuroscience and Otolaryngology, University of Florida, Gainesville, FL.

Lewis Longtang Chen is Associate Professor in the Department of Otolaryngology and Communicative Science at University of Mississippi Medical Center, Jackson, MS. Prior to this position Dr. Chen was Assistant Professor of the Department otolaryngology at University of Texas Medical Branch, Galveston, TX.

Wei R. Chen is presently an Associate Professor at the University of Texas

Health Science Center, Houston, Department of Neurobiology and Anatomy, Houston, TX. Prior to this position, Chen was Assistant Professor at Yale University, Department of Neurobiology, New Haven CT.

James W. Gnadt has moved to NINDS/NIH, Neuroscience Center, Bethesda, MD. Prior to this position Dr. Gnadt was in the Department of Physiology and Biophysics at Howard University College of Medicine, Washington, DC.

Harry Holthofer is Professor of Centre for Bioanalytical Sciences at Dublin City University, Dublin, Ireland. Prior to this position Dr. Holthofer was Director in the Department for Molecular Medicine at University of Helsinki, Helsinki, Finland.

Charles C. Horn is currently working at the University of Pittsburgh Cancer Institute, Pittsburgh, PA. Prior to this position Dr. Horn was Assistant Member at Monell Chemical Senses Center, Philadelphia, PA.

Akichika Mikami has taken a position as Professor at Chubu Gakuin University, Seki-City Gifu Japan. Previously, Mikami was in the Department of Behavior & Brain Sciences at the Primate Research Institute, Kyoto University, Inuyama, Japan.

Sean C. Newcomer is currently an Assistant Professor at Purdue University, West Lafayette IN. Previously, Newcomer was a Postdoc Fellow at the University of Missouri, Department of Vet Biomedical Sciences Columbia MO.

Colleen J. Nolan is currently the Dean of Shepherd University's School of Natural Sciences & Mathematics, Shepherdstown, WV. Prior to this posi-

tion, Nolan was Professor and Chair at Saint Mary's University, Department of Biological Sciences, San Antonio TX.

Naro Ohashi has moved to the First Department of Medicine at Hamamatsu University School of Medicine, Hamamatsu, Japan. Prior to this position Dr. Ohashi was in the Department of Physiology at Tulane University Health Science Center, Tulane, LA.

Kazunobu Okazaki is currently Associate Professor, Research Center for Urban Health and Sports, Osaka City University, Osaka, Japan. Prior to this position Dr. Okazaki was Assistant Professor in the Department of Sports Medicine Science, Shinshu University Graduate School of Medicine, Matsumoto, Nagano, Japan.

Jingsong Ou has moved to The First Affiliated Hospital, Sun Yat-sen University, Division of Cardiac Surgery, Guangzhou, People's Republic of China. Prior to this move Dr. Ou was at Guangzhou First Municipal People's Hospital, Department of Surgery and Cardiothoracic Surgery, in Guangzhou, People's Republic of China.

Brett A. Simon is currently Professor, Chair at Beth Israel Deaconess Medical Center, Department of Anesthesiology and Critical Care & Pain Medicine, Boston, MA. Previously, Simon was an Associate Professor at Johns Hopkins University, Department of Anesthesiology & Critical Care Medicine, Baltimore, MD.

Yasuhito Uezono is now Chief at National Cancer Center Research Institute of Cancer Pathophysiology, Tokyo, Japan. Prior to this position Uezono was an Associate Professor at Nagasaki University, Nagasaki, Japan. ❖

Renal Physiology Audio/PowerPoints Now Available!

Audio and associated PowerPoint slides from the Refresher Course on Renal Physiology presented at EB 2009 are now available online at

<http://www.the-aps.org/education/refresher/RenalPhysiology.htm>.

Letter to William Dantzer

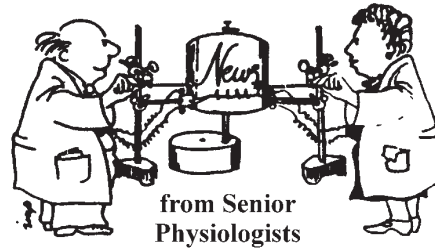
Gerald F. DiBona writes: "Since (and beginning a few years before) formal retirement from the University of Iowa College of Medicine in 2004, I have spent the period between December 1 and May 1 of each academic year as a Foreign Adjunct Professor at Karolinska Institute, Stockholm, Sweden. My collaborator, in whose laboratory I work, is Professor Anita Aperia; we share interests in dopamine and catecholamine (neural) regulation of renal function. Our research interaction has been fruitful and we share a research grant from the Swedish Heart-Lung Foundation for 2009-2010. While in Stockholm, I am involved in guiding several graduate students and postdoctoral research fellows. In addition, I participate in the teaching of renal physiology to the medical students and teaching clinical renal physiology to the clinical nephrology fellows who will soon be required to sit for written specialty certifying examinations.

"My wife, Ulla Kopp, is still working full-time as Professor of Internal Medicine and Pharmacology at the University of Iowa, College of Medicine. During our Stockholm period, she enjoys a very productive research collaboration with Professor Tomas Hökfelt, Institute of Neuroscience, Karolinska Institute, Stockholm, Sweden.

"In addition, I am a Visiting Professor at the Institute of Biomedical Sciences, University of Copenhagen, Copenhagen, Denmark under the auspices of the Danish Cardiovascular Research Academy (DaCRA). During my visits there (which precede and follow the time in Stockholm), I review and evaluate the progress of graduate students and postdoctoral research fellows who are supported by DaCRA.

"My penchant for doing manuscript reviews immediately on receipt has continued to result in regular requests for such activity. I have been able to expand college level interests and abilities in signal processing and time series analysis to collaborate with colleagues interested in the impaired autoregulation observed in the earliest phase of experimental diabetes mellitus and septic shock.

"It appears that my life-long research interest in the renal sympathetic neural control of renal function, especially in disease states such as hypertension and congestive heart failure, may have some



clinical application. In a proof of principle experiment in hypertensive human subjects, delivery of radiofrequency energy via a renal artery catheter (thermal injury to the renal nerves) caused a reduction in renal norepinephrine spillover (evidence of renal denervation) and a significant decrease in arterial pressure which was sustained for 12 months (*Lancet* 272:1275-1281, 2009).

"As a result of the international interactions noted above, I have developed medical (and biomedicine) student exchange programs between the University of Iowa College of Medicine and Karolinska Institute and University of Copenhagen. These permit final year Iowa medical students to take clinical elective rotations in either Stockholm or Copenhagen and vice versa. More recently, this has extended to the University of Göteborg, Göteborg, Sweden and the University of Greifswald, Greifswald, Germany.

"From approximately June 1 to October 31, I am at our summer home in Castine, ME on Penobscot Bay. Ulla is able to be in Castine for approximately two months during that time. Kaprifol, a Hallberg-Rassy 34 foot sloop, lies in Castine Harbor. We cruise the northeast coast between Cape Cod and the Canadian border, often together with sailing friends from both USA and Sweden.

"I have become sufficiently fluent in Swedish so that, while in Sweden, I function only in Swedish, including lectures and small group sessions with medical students. This has also helped develop an increasing circle of friends and colleagues in Sweden. We take advantage of the extensive social and cultural offerings of Stockholm and enjoy providing visiting friends and colleagues from USA with a well informed tour of Stockholm.

"Thus, all in all, life continues to be intellectually stimulating and challenging, as well as socially and culturally interesting and expanding.

"Am not sufficiently wise to have any words of my own wisdom to pass on but would convey those few words of wisdom from my father that I actually have faithfully followed: 'You don't get paid extra for not taking all of your vacation.'"

Marc Jaeger writes: "Thank you so much for your note. I just had my 80th birthday, but I try to remain fit by taking long walks in the close forests. My Chairman is kind enough to let me use an office and so I am at the office at 7 every day.

"My specialty, Mechanics of Breathing, is long out of fashion and I was not able to readjust to modern physiology. But I teamed up with a local engineer in the early 1980s and we worked on the physics of gas-flow in oscillating currents. He devised the theory and I did the experiments designed to separate gases by diffusion in oscillating fluid. We published together several papers in engineering journals.

"When this ended, I started a new venture and studied American history, a reasonable choice for an immigrant from Switzerland. I got very interested in the period of Paul Revere and later of that of Lewis and Clark.

"Now, I have changed my field again: I just finished a 'play' entitled, 'Shakespeare and Rembrandt,' in which I imagine a meeting of minds past the centuries between these two giants of European culture.

"Thanks again for the inquiry."

Letter to Frank Knox

Roy Shepard writes: "Thank you for your kind invitation. I am glad to confirm that I continue in reasonably good health, although my attendance at meetings has been limited for the past few years because of some leg problems secondary to irradiation for prostate cancer. My wife and I now live at Brackendale, in rural British Columbia, near to our younger daughter, and thanks to the wonders of the Internet and electronic journals I continue to do a lot of writing and reviewing from our beautiful but somewhat remote location.

"In the last couple of years, I have been active with the Canadian Society of Exercise Physiology in revising the *Canadian Guidelines for Exercise* in health and various diseases, and am also involved in a project to expand the capability and automate the PAR-Q and

PAR-Med-X clearance procedures for exercise candidates.

"I have written several major reviews for *Sports Medicine*, the *British Journal of Sports Medicine* and the *European Journal of Applied Physiology*, and am currently preparing *Histories of Exercise Immunology and Exercise Physiology* in Canada. I also have on-going projects on exercise for children (with colleagues in Trois Rivieres), exercise and health in the elderly (with colleagues in Japan), and Exercise during Ramadan (with colleagues in Tunisia).

"You can find a recent Curriculum Vitae at: <http://www.members.shaw.ca/royjshep/index.htm>."

Letter to Clark Blatteis

Daniel Richardson writes: "It was a bit of a jolt to receive your letter reminding me that I had turned 70, an auspicious occasion that I had sort of put out of my mind. Anyway, you wanted me to submit something for *The Physiologist* about what I have been up to lately. Most of my current activities are things like mucking out horse stalls, chain-sawing dead trees from last winters storm damage, pressing wine (my wife and I work for a winery part-time) and gardening, none of which relate much to physiology. However, I still do a bit of teaching in the fall semester, and one of the more interesting courses I think would be of interest, particularly to senior physiologists looking for a way to keep connected to the discipline. My 'adventures' with this course are described below.

"An Adventure in Teaching: My most challenging experience as a health science educator has been teaching a 100 level course in basic body functions to first semester undergraduate freshmen, most of whom are non-science majors. This adventure began a few years before retirement and has continued into a post-retirement phase of part-time teaching.

"This course is one of several in the University of Kentucky's Discovery Seminar Program (DSP) for incoming freshmen. The DSP supports about 30 elective courses divided into social sciences, natural sciences and humanities, with each course having a 25 student limit. Students earning a BA degree at the University of Kentucky are required to have a certain number of hours in each of these categories, and courses within the DSP program count toward

partial fulfillment of requirements in these areas. However, each student may select only one DSP course among the total course offerings in the program. Perhaps for this reason, a given student will tend to select a particular DSP course that counts toward fulfilling requirements outside her or his major area of study. The course I teach is in the natural science area and tends to be populated by students in the social sciences and humanities. Largely because of the extreme academic diversity of the students, this is one of the most interesting, challenging and fun courses that I have taught in my 40 plus year career.

"What makes this particular DSP course both challenging and fun is best described in comparison to the type of courses we APS folks usually teach. We are accustomed to students who are either in professional health care programs or planning to enter such programs. As such, their backgrounds in biology and the physical sciences tend to be strong, and they usually have established reasonable classroom skills and study habits. In brief, they tend to be homogeneous in the background knowledge and skills necessary to take on a course like physiology.

"In contrast, first semester freshmen, most of whom will not be science majors, are markedly heterogeneous in their science backgrounds. While some have a good understand of the structure and function of things like DNA, others aren't sure what a molecule is. While some are quite good at interpreting a graph, others see graphs and such as abstract art. While some are highly skilled writers (better than their instructor in many cases), others have had little, if any, experience in writing either in high school or elsewhere. Furthermore, in many cases students who are skilled in one area are deficient in another. The student who understands graphs and charts may not have written much, if anything, in high school. The student who writes beautiful essays may be the one who sees graphs and charts as abstract art, or gives you a deer-in-the-headlights look when describing a glucose molecule.

"To manage a course with such a diverse body of students, it really helps to be at the senior (in age) level where you can call on your life's experiences, both personal and professional. This is no doubt one of the reasons why the majority of profs in the DSP program are either tenured or retired. A big dis-

advantage is that many incoming freshmen are going to be intimidated by you at the onset not only because you are a college prof, but also because you are the same age as their grandparents. So, the first few class periods are critical in getting to know the students and getting them to feel safe and not threatened by you or the classroom environment.

"The best way to get the students to open up to you is to first open up to them by telling them something about yourself. And I don't mean things like where you got your PhD. That is a for sure snore-snore. Tell them about where you grew up, what you were doing when you were their age, what you like to do when you are not thinking physiology. Reiterate a monumental life experience. The one I like to tell about is the first time I drove a team of mules at age 10. That always gets their attention, and the very thought of a college prof driving a team of mules quickly topples you from any pedestal that they may have envisioned you being on. Whatever you tell your students about yourself, the point is to get them feel comfortable with you and to see you as 'normal'.

"Then ask the students to do something like tell us one thing you (the student) would like for the rest of the class to know about you. But whatever you do, DON'T ask them those boring questions recommended in all the teaching manuals, such as 'Why are you taking this course?' or 'What do you expect to get out of this class?' When asking the latter of one very wise student (before I knew better) his thoughtful response was, 'How in the hell should I know, you're the one teaching the course.'

"After establishing a comfortable and non-threatening classroom environment, you can get down to business. But again, what do you do to teach a difficult topic like physiology to such an academically diverse class? One thing you don't do is to make it a lecture-based course, like you might if this were a med school class. There is no way you are going to be able to design a standard 50-minute lecture that more than a handful of students will follow. No matter at what level you pitch it, your lecture will bore some to tears while flying over the heads of others. On the other hand, the students do need some explanation of complex physiological functions. By trial and error, mostly the latter, the procedure I have settled on is a combination of 'mini-lectures'—lectures of 10 to 15 minute duration on a single topic, and

small group activities based on the mini-lecture information. The group activities are selected from the multitude of those described in the many texts and manuscripts on active learning, and these vary from year to year based on what works best for a particular class. The disadvantage of having most of your class time devoted to small group work is that you can only take on a fraction of the material covered in a lecture based course. But, for a non-majors course this is not a critical consideration. However, careful forethought should be given as to topic selection so as to give the course continuity and cohesiveness. The title of the course I teach is, 'The Stability of Life in an Unstable World.' Under this rubric, homeostasis is used as a focal concept (stability in an unstable world) which enables tying in most any physiological function.

"Particular topics vary from year to year based on current issues in health and medicine, but the one topic that has been a constant is basic genetics: What is a gene? What do genes do? How do they do it? Related topics include: What is cloning? What is a stem cell? Why all the fuss over stem cell research? And so on. The reason for such a strong emphasis on genetics is that it is the foundation of future medicine, their future, and every

college graduate, no matter what their major, should know the basics of genetics. It is simply an integral part of being an educated person in the 21st century.

"Reference and reading materials are for the most part selected from the abundant supply found on the internet. In some cases instructors select the material and in others students research the web and/or the library and 'discover' the information for themselves. In either case, I find this method far better than using any of the current text books on the market, none of which are appropriate for a course of this nature, not to mention that most of them come with an outrageous price tag.

"Finally, when it comes to evaluating the students for the purpose of assigning grades, I use a series of writing assignments, some of which are done in class while others are based on internet/library research. It has been my experience that this levels the playing field between science and non-science students much better than do objective exams. The disadvantage, of course, is that you spend considerable time with grading, particularly if you critique the essays on the basis of composition, as well as science. But it's an enjoyable activity because it helps you to know the students better, and by acting

as a de-facto English composition instructor you are helping the students to become successful in college.

"The rewards and personal satisfaction of teaching a non-majors course are numerous, but at the top of the list is seeing the students gain confidence and self assurance, and to know that you played at least a small part in that. Those with weak science backgrounds gain confidence in their ability to understand science and, hence, a deeper appreciation for how science affects their lives. Generally, those with strong science backgrounds are the ones with little writing experience, and it is satisfying to see their writing skills improve and to see them gain self confidence in their ability to communicate in this manner—a critical skill for success in college.

"So, for all you emeritus types out there, if you are looking for a new adventure that will keep you connected to physiology while at the same time being useful, give teaching a non-majors class a try. And if wherever you have your emeritus appointment doesn't have such a thing, then start one or contact your local high school. They would be glad to have you. If you have any questions or comments, let me know. My email is: drichar@uky.edu." ❖

Call for Nominations

2010 Bodil M. Schmidt-Nielsen, Distinguished Mentor and Scientist Award

The Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Award honors a member (male or female) of the American Physiological Society who is judged to have 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 and made outstanding contributions to physiological research.

The award was established in 2004 to recognize Dr. Bodil M. Schmidt-Nielsen, the first woman President of the Society and a distinguished physiologist who has made significant contributions in her field. The award of \$1,000 and a commemorative plaque are presented at the annual Experimental Biology meeting where the awardee meets with APS

members and young scientists.

Nominations can be submitted to the Women in Physiology Committee by any member of the American Physiological Society. The nomination should include the following:

1. A letter stating the basis for nomination with a synopsis of the nominee's scientific contributions and mentoring skills and evidence related to the criteria, such as:
 - assisting students with research funding or job placement;
 - success of graduates;
 - publications and presentations of graduate students;
 - participation in graduate education activities;
 - successful role model;
 - teaching awards;
 - descriptions of innovative teaching methods, etc.
2. A list of current and former trainees and their current positions and any awards they received.
3. Support letters - successful nomi-

nations usually contain 8-10 letters. No more than three letters can be from colleagues, with the remainder from current or former trainees. Trainee letters should be from a variety of institutions that are different from that of the nominee. No more than 10 letters can be submitted. Nominee's current curriculum vitae.

4. Nominee's current curriculum vitae, listing honors or awards, positions, grants, or papers; current and past grant support; and teaching activities.

The nomination packet should be submitted by either a nominator(s) or by a nominator and the nominee.

Applications can be sent to the following address: Bodil Schmidt-Nielsen Distinguished Mentor and Scientist Award, American Physiological Society, Education Office, 9650 Rockville Pike, Bethesda, MD 20814-3991.

Applications are due by September 15.

For questions, please contact the APS Education Office at 301-634-7132 or education@the-aps.org. ❖

Pharmacology for the Health Care Professions

Christine M. Thorp
New Jersey, USA: Wiley Publishers
2008, 364 pp. illus, index, \$50.00
ISBN: 047051017X

Pharmacology for the Health Care Professions, as the title suggests, is written for those involved in the care of patients, particularly those involved with prescription of administration of medicines. Part I, pharmacokinetic and pharmacodynamic principles, and Part II, systemic pharmacology covering the major organ systems, are written to provide knowledge of pharmacology to students in any health care profession. Part III, describing both the legislation and practice of prescription, specifically addresses the needs of physical therapists, podiatrists and radiologic technologists.

This book presents basic concepts of pharmacology required to safely administer medications. Chapters begin with an overview of the topic, and in the systemic pharmacology chapters, this section provides the physiology background necessary to understand the pharmacology. Although this book is not intended to be a physiology textbook, it nicely details basic concepts. If a student requires additional background there are websites listed at the end of each

chapter. Drug classes are presented within the framework of organ systems. The text focuses on common drugs prescribed and administered in long-term-, community-, and acute-care settings, and are listed in an appendix for easy reference. Occasionally, in the description of a drug class, information that has not been covered yet is referred to, without a clear definition or reference to the section where the topic is explained. For instance, it is stated that cyclophosphamide is often administered jointly with a 5HT₃ antagonist, yet serotonin and serotonin receptors are discussed in the following chapter. There are numerous useful tables and illustrations that help categorize mechanisms of action and that effectively illustrate essential points. At the end of each chapter is a series of case studies that provide real world situations the student may encounter in the health care profession, and that are answerable with information provided in the chapter. It requires the student to apply the knowledge and go beyond the text book information and should help the student remain enthusiastic and excited to learn. In addition, there are chapter review questions to highlight the important take home points. Notably missing from each chapter are the primary sources used for the material. This information is, however, presented in a bibliography for the entire book, but it is not entirely clear

which sources were utilized for each chapter.

Areas covered include disorders of the cardiovascular system and blood, the respiratory system, the endocrine system, the musculoskeletal system, the skin, and the central nervous system. Also included are drugs targeting infectious diseases, cancer, anesthesia and analgesia, and contrast agents used in radiography. The immune system and inflammation do not receive a separate section, however, are covered in multiple sections. Notably absent is information on the renal system.

Overall, this book provides a survey of pharmacology with an emphasis on providing information necessary for accreditation programs. Although presentation of information is very superficial, it is targeted for those in the health care profession who may not miss detailed mechanisms of action descriptions. Instructors of such a survey course will find this to be a possible required text book. While specifically written for physical therapists, podiatrists and radiologic technologists, introductory students in other disciplines needing an overview of pharmacology will find this book a useful resource and easy read.

Colleen C. Hegg

Books Received

An Odyssey With Animals: A Veterinarian's Reflections on the Animals Rights & Welfare Debate
Adrian R. Morrison
New York, USA: Oxford
Univ. Press, July 2009, 272
pp, index, \$ 29.95
ISBN: 978-0-19-537444-5.

Clinical Physiology and Pharmacology: The Essentials
Farideh Javid and Janice
McCurrie
New Jersey, USA: Wiley
Publishers, 2008, 341 pp,
index, illus., \$55
ISBN: 0470518537.

Clinical Neurophysiology,
3rd Edition
Edited by Jasper R. Daube
and Devon I. Rubin
New York, USA: Oxford
Univ. Press, April 2009, 928
pp, index, illus., \$145
ISBN: 978-0-19-538511-3.

An Introduction to Biomedical Science in Professional and Clinical Practice
Sarah J. Pitt and James M.
Cunningham
New Jersey, USA: Wiley
Publishers, 2009, 225 pp,
index, illus., \$55
ISBN: 0470057157.

Wine Wizard

International month this month. I just hope you can find some of these. Don't forget to ask your wine shop dealer and also to explore the web for sources.

Whites: 2007 Burgans Albarino "Rias Baixas", Spain \$11 The albarino grape does well in Spain and this particular bottle is a fine example. The nose and palate are similar with apricot and citrus in combination. The palate is rich but still light with refreshing acidity and is very clean. The length is quite good as well. Sipped pretty cool, a great summer wine.

2008 Kirkland Sauvignon Blanc "Ti Point," Marlborough, New Zealand \$9. This is the current version of the Costco label NZSB (i.e., available only at Costco), and is once again great value as NZSB prices drift slowly and inexorably upward. Grassy and herbal with gooseberry, clean and bracingly tart with a lemony finish. It is better with food than sipped alone because of the acidity.

2008 Dashwood Sauvignon Blanc, Marlborough, New Zealand \$8. This wine has the same flavors as above—gooseberry mostly. Its distinguishing feature is its lower acidity that many will like. It makes the wine seem richer, but if you like classical tart NZSB, you may not like this one as much. Your choice.

Reds: 2008 Colosi Nero d'Avola, Sicily \$8.50 This is a young wine with plums and stems on the nose. The up front fruit is excellent, with plums and dark



Peter Wagner

berries. There is a little sweet vanilla, a touch of stems and herbal characters to balance the sweet ripeness of the grapes, and medium acid and tannin. Good value.

2007 Almira Garnacha/Syrah "Campo de Borja," Spain \$6. For this price, buy a case. This wine has a briary, perfumed nose with black pepper and red berries (all typical of Rhone blends like this—garnacha=grenache). The palate is light and lively with strong red berry fruit, spice, briar and black pepper. It is clean,

the acidity is balanced, and the tannins are light. Great very slightly chilled in the early evening with tapas. Calling my travel agent right now for flights to Barcelona.

2007 Tres Ojos old vine garnacha "Calatayud" Spain \$7. For this price, buy a case. The nose is perfumed with raspberry and black pepper. The palate is full and rich with red berries, sage, and black pepper. Light tannins, good acidity and very good length, this is mouthfilling and (too) easy to drink.

2005 Bodegas Muga Rioja Reserva, Spain \$24. Did not see the grape(s) that went into this wine. This wine has a lot of American oak in the nose (dill, coconut, vanilla) but also a lot of raspberry fruit to cope with the oak. The palate shows a big, structured wine with moderate tannins lots of sweet, ripe raspberry fruit, some American oak and excellent length.

2006 Numanthia-Termes "Toro Termes", Spain \$24. Don't have a clue what's in this wine either except alcohol at 15%. All I know is Toro means bull, and the label claims a grape called "Tinta de Toro". Definitely lost in translation. The wine is however not (lost, that is). The nose is complex with green olive, earth, plums and mint. The palate is rich and silky-smooth. It is plummy and you do notice the ethanol. Medium tannins, some American oak flavors, good acidity and nice length. This wine was given a very high score (93) by the Wine Spectator. ❖

Bowditch Award Lecture

The Bowditch Lectureship is awarded to a regular member, under 42 years of age, for original and outstanding accomplishments in the field of physiology. Selected by the APS President, the recipient presents a lecture at the Experimental Biology meeting, which is considered for publication in the Society journal of their choosing. The recipient receives an honorarium of \$2,500, reimbursement of expenses incurred while participating in the Experimental Biology meeting, and a plaque. The membership is invited to submit nominations for the Bowditch Lecturer. A nomination shall be accompanied by a candidate's curriculum vitae and one letter detailing the individual's status, contributions, and potential.

More information on the award and nomination procedures are available at <http://www.the-aps.org>. Nominations should be submitted online at <http://www.the-aps.org/awardapps>.

Physiology in Perspective

Walter B. Cannon Memorial Lecture

The Cannon Memorial Lecture, sponsored by the Grass Foundation, honors Walter B. Cannon, President of the Society from 1913-1916, and is presented annually at the spring meeting to an outstanding physiological scientist, domestic or foreign, as selected by the President-Elect with the consent of Council. The recipient presents a lecture on "Physiology in Perspective," addressing Cannon's concepts of "The Wisdom of the Body." The lecture is considered for publication in the Society journal of their choosing. The recipient receives an honorarium of \$4,000, a plaque, and reimbursement of expenses incurred in association with delivery of the lecture. The membership is invited to submit nominations for this lecture. A nomination shall be accompanied by a candidate's curriculum vitae and one letter detailing the individual's status and contributions.

More information on the award and nomination procedures are available at <http://www.the-aps.org>. Nominations should be submitted online at <http://www.the-aps.org/awardapps>.

September 1-4

ISAN2009, Sydney, Australia, Information: Internet: <http://www.iceaustralia.com/isan2009/>.

September 4-8

8th World Congress on Neurohypophysial Hormones (WCNH2009), Kitakyushu, Japan. Information: Email: wchn2009@mbbox.med.uoeh-u.ac.jp; Internet: <http://www.wcnh2009.jp>.

September 6-8

Epithelia & Membrane Transport Themed Meeting, Newcastle, United Kingdom. Information: Tel.: +44 (0) 207269 5710; Email: meetings@physoc.org; Internet: <http://www.physoc.org/meetings>.

September 9-13

Joint International Meeting of The Physiological Society and the Society of General Physiologists - Basic Biology and Disease of Muscle, Woods Hole, MA. Information: Tel.: +44 (0) 207269 5710; Email: meetings@physoc.org; Internet: <http://www.physoc.org/meetings>.

September 15-18

The 9th Annual Meeting of the Safety Pharmacology Society, Strasbourg, France. Information: Internet: <http://www.safetypharmacology.org/am2009/>.

September 18-21

Workshop on Multi-Scale Muscle Mechanics, Woods Hole, MA. Information: Internet: <http://muscle.ucsd.edu/NSMRC/workshops/main.shtml>.

September 26-30

The 23rd Scientific Meeting of the International Society of Hypertension "Global Cardiovascular Risk Reduction", Vancouver, Canada. Information: Kazia Ekelund, ISH 2010 Meeting Secretariat, C/O Sea to Sky Meeting Management Inc., Professional Conference Organizer. Tel.: +1 604-984-6455; Fax: +1 604-984-6434; Email: kazia@seatoskymeetings.com; Internet: <http://www.vancouverhypertension2010.com>.

October 6-9

Placenta: The Key to Pregnancy Success (IFPA Meeting 2009), Adelaide, Australia. Information: Nina Cosgrove, IFPA 2009 Conference Secretariat, Elsevier, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK. Tel.: +44 (0) 1865 843297; Fax: +44 (0) 1865 843958; Email: n.cosgrove@elsevier.com; Internet: <http://www.ifpaconference.org/2009>.

October 15-16

Synaptic Inhibition in Health and Disease, Chicago, IL. Internet: <http://www.abcam.com/go.cfm?p=3815>.

October 16-17

Frontiers in Microcirculation: Control Processes and Clinical Applications, Columbia, MO. Information: Internet: http://muconf.missouri.edu/mcs_mu2009/.

October 17-19

The 2nd International congress on Image and Signal Processing (CISP 2009) and the 2nd International Conference on BioMedical Engineering and Informatic (BMEI 2009), Tianjin, China. Information: Email: cisp2009@tjut.edu.cn; Internet: <http://www.tjut.edu.cn/cisp-bmei2009>.

October 27-30

2nd International Fascia Research Congress, Amsterdam, The Netherlands. Information: Faculty of Human Movement Sciences, Van der Boechorststraat 9, NL - 1081 BT Amsterdam. Tel.: +31 20 59 82000; Fax: +31 20 59 88529; Email: info@fasciacongress.org; Internet: <http://www.fasciacongress.org/2009>.

November 2-5

Microbial Biotechnology for Development, Marrakech, Morocco. Information: Internet: <http://www.ucam.ac.ma/microbional/>.

November 16-19

Chromatin: Structure & Function Conference 2009, Guanacaste, Costa Rica. Information: Internet: <http://www.abcam.com/go.cfm?p=4406>.

December 5-9

49th Annual Meeting of the American Society for Cell Biology, San Diego, CA. Information: Internet: <http://www.ascb.org/meetings/>.

December 14-16

Cellular & Integrative Neuroscience Themed Meeting, Cardiff, United Kingdom. Information: Tel.: +44 (0) 207269 5710; Email: meetings@physoc.org; Internet: <http://www.physoc.org/meetings>.

2010

February 15-18

The Con-Joint Meetings of Biology and Synchrotron Radiation (BSR) and Medical Applications of Synchrotron Radiation (MASR), Melbourne, Australia. Information: Internet: <http://www.masr2010.org>.

March 17-20

XVIII World International Family Therapy Association (IFTA) Congress, Buenos Aires, Argentina. Information: Victoria Tomskey, CLA 2010 - Industry Liaison & Sales, Paragon Conventions - Part of Liberty International Group, 18 Avenue Louis Casai, 1209 Genève, Switzerland. Tel: +41 (0)22-5330-948; Fax: +41(0) 22-5802-953; Email: vtomskey@paragon-conventions.com; Internet: <http://www.paragon-conventions.net/IFTA2010/>.

March 21-25

6th World Congress for Neurorehabilitation, Vienna, Austria. Information: Internet: <http://www.wcnr2010.org>.

September 2-4

6th International Muscle Symposium, Vienna, Austria. Information: Internet: <http://www.musclesymposium2010.at>.

Meetings & Conferences

of the American Physiological Society

2009 APS Conference:

ET-11: APS International Conference on Endothelin

September 9-12, 2009 • Montréal, Canada

Experimental Biology 2010

April 24-28, 2010 • Anaheim, California

2010 APS Intersociety Meeting:

Global Change and Global Science:

Comparative Physiology in a Changing World

August 4-7, 2010 • Westminster, Colorado

2010 APS Conference:

Inflammation, Immunity and Cardiovascular Disease

August 25-28, 2010 • Westminster, Colorado

Experimental Biology 2011

April 9-13, 2011 • Washington DC

2011 APS Conference:

**7th International Symposium on Aldosterone
the ENaC/degeneration Family of Ion Channels:
Molecular Mechanisms and Pathophysiology**

Date and Location to be Determined



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



MEMBERSHIP APPLICATION FORM

The American Physiological Society

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

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

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

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

5. Institution Street Address _____

6. City/State/Zip/Country _____

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

8. Work Phone _____ Home Phone _____

9. Fax _____ E-mail _____

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

Dates** Degree Institution Major Field Advisor

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

- | | | |
|--|--|--|
| <input type="checkbox"/> Cardiovascular | <input type="checkbox"/> Endocrinology & Metabolism | <input type="checkbox"/> Renal Physiology |
| <input type="checkbox"/> Cell & Molecular Physiology | <input type="checkbox"/> Environmental & Exercise Physiology | <input type="checkbox"/> Respiration Physiology |
| <input type="checkbox"/> Central Nervous System | <input type="checkbox"/> Gastrointestinal & Liver Physiology | <input type="checkbox"/> Teaching of Physiology |
| <input type="checkbox"/> Comparative & Evolutionary Physiology | <input type="checkbox"/> Neural Control & Autonomic Regulation | <input type="checkbox"/> 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 _____

#2 Sponsor Name _____

Mailing Address _____

Mailing Address _____

Phone _____

Phone _____

Fax _____

Fax _____

E-mail _____

E-mail _____

Sponsor Signature* _____

Sponsor Signature* _____

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

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

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

14. OCCUPATIONAL HISTORY [Check if student

Current Position:

Dates	Title	Institution	Department	Supervisor
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Prior Positions:

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

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

16. DOCTORAL DISSERTATION TITLE (if applicable):

17. POSTDOCTORAL RESEARCH TOPIC (if applicable):

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

Mailer Meeting (Which meeting? _____) Colleague Other _____

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