EDUCATION COMMITTEE

ADINSTRUMENTS MACKNIGHT PROGRESSIVE EDUCATOR AWARD
The Education Committee received six applications for 2013 and recommended APS member Margarita Curra-Macknight of the University of California, Riverside, as the 2013 awardee. Her application included a description of a course she developed, “Educational Training in Neuroscience Outreach” to empower senior neuroscience majors at UCR with teaching skills and her use of various types of technology in the classroom.

EB REFRESHER COURSE
The 2013 Refresher Course focused on immunology. Consistent with previous years, the sessions were well-attended. Session feedback rated the sessions highly. The session presentations are being prepared for the web and publication in Advances. The collection of resources from the 2013 refresher course can be viewed in the Archive.

PROFESSIONAL SKILLS COURSES
The Education Office and Publications Department, in collaboration with the Society for Biological Engineers and Biomedical Engineering Society, received funding from NSF to support the development of professional skills training modules on publication ethics. The modules will provide a relevant and current knowledge of and appreciation for the facts and principles of the eight most common publication ethics issues, as well as the tools needed to integrate and apply the guidelines to actual situations using professional standards of practice. The education modules will serve as tools for use by higher education institutions, laboratory groups, individuals, and professional societies and will incorporate proven materials and methods, as well as novel approaches. They will be effective for US and international graduate students in science and engineering programs and will integrate easily into Responsible Conduct of Research (RCR) training.

The project will also develop an online Community of Practice (COP) designed to engage trainees and experienced scientists and engineers in ongoing discussions about scientific publishing, publication ethics, and professional standards of practice in these areas. Over the past year, the project staff has developed topics and learning objectives for modules on: authorship, conflicts of interest, data falsification/fabrication, duplicate publication of data and redundant publication, figure preparation/presentation, plagiarism, and animal-human subjects welfare. The draft modules are being developed for field testing at a workshop in conjunction with the January 2014 PST in Orlando, FL.

MEDICAL PHYSIOLOGY LEARNING OBJECTIVES (MPLO) PROJECT
In conjunction with the ACDP and APS sections, the learning objectives were updated and republished in 2012. They are available in PDF format at the APS website. Also, APS Archive resources are coded and searchable by each MPLO; changes in objectives for the 2012 edition were also created in the Archive and related teaching resources were recoded appropriately.

HUMAN ANATOMY AND PHYSIOLOGY SOCIETY (HAPS) COLLABORATION
The 2013 HAPS Conference was held May 25-27 in Las Vegas, NV. APS member Hannah Carey, Ph.D., University of Wisconsin gave a presentation entitled “Unraveling Mysteries of Hibernation.”

National Association of Biology Teachers (NABT) Professional Development Conference
The 2012 NABT Professional Development Conference was held October 31-Nov. 2 in Dallas, TX. APS member Stephen Secor, University of Alabam, gave the presentation, “The Python: Mystery of Nature, Model of Science”. “Junkyard Digestion,” an activity developed by an APS Frontiers Fellow was the focus of the hands-on workshop that followed Secor’s talk. The 2013 conference will be the NABT 75th Anniversary Conference in Atlanta, GA in mid-November. Gordan Geisbrecht, University of Manitoba, will serve as the APS keynote speaker.

APS Archive of Teaching Resources
The Archive added 588 new resources since January 1, 2013 and now includes more than 6,000 peer reviewed teaching resources. More than 6,700 Archive Users have registered. In 2013, the Archive added new community features including a user profile and user badges. User profiles are generated for each registered user of the Archive and are only viewable by registered Archive users. In the profile, users can upload a photo and share information on the courses they teach. User badges are also featured in the profile and elsewhere in the site. Badges can be earned by taking part in a number of activities within the Archive such as rating resources, sharing resources, creating collections, and taking part in the Archive Scholars Program. In addition to implementing the new profiles, the Archive also launched a monthly e-newsletter for all registered Archive users. This e-newsletter highlights high school and undergraduate resources that can be found in the Archive as well as current news and Archive updates.

Archive Scholars Program
With support from NSF, the Archive has implemented a professional development program for K-12 and undergraduate educators. The Archive Scholars program is an online fellowship focused on finding and using digital resources to enhance science teaching and learning. To date, the Archive has run two Archive Scholars programs, one for high school educators and one for undergraduate educators. The Archive Scholars Program for High School Educators took place in the fall of 2012 and had 8 teachers participating from across the US. Teachers learned how to search for and share resources in the Archive, how to submit collections and resources used in their classroom, and the basic tenants of Six Star Science, the APS research-based science education approach. The Archive Vision and Change Scholars Program took place in the spring of 2013 and had 18 undergraduate faculty members participating from across the US. Faculty learned how to search for and share resources in the Archive, how to submit collections and resources used in their classroom, and the basic tenants of Vision and Change in Undergraduate Education Report created by NSF and AAAS. Evaluations from both programs are currently being reviewed with both programs scheduled to run again in October 2013.

David Bruce Awards
In 2013, 79 applications were received and 26 Undergraduate Abstract Awardees were selected. In addition to support from the APS, the David S. Bruce Award program has received generous contributions from Dr. Isis, the APS Central Nervous System Section, and individual APS
members Marlowe W. Eldridge, John M. Horowitz, Barbara A. Horwitz, Ida J. Llewellyn-Smith, and Thomas Pressley. This support is gratefully acknowledged.

**Experimental Biology Undergraduate Poster Session**
In 2013, approximately 200 APS members came to see more than 150 undergraduate physiology posters and to talk with the students. In addition, students from the American Association of Anatomists (AAA) presented their research. This year, 11 institutions and departments paid a $250 fee for table space to promote their graduate programs to the undergraduate students at the session, providing $2,750 to help cover the session costs. Students and departments came 30 minutes early to allow uninterrupted time for the departmental representatives to discuss their graduate opportunities with the students.

**APS Frontiers in Physiology Professional Development Program for Teachers**
The comparative study of the online and comprehensive programs showed that the pedagogy skills learned at the Science Teaching Forum could be effectively taught online. However, teachers who did not have the summer research experience did not gain the in depth knowledge of the processes of basic research as did teachers who only did an online unit about basic and clinical research. Therefore, for 2012-2013, the APS returned to the comprehensive Frontiers in Physiology Summer Research Teacher Fellowship, including the laboratory experience and online professional development but not the week-long Science Teaching Forum workshop. From a pool of 37 applicants, the Education Committee selected 14 teacher fellows to participate in this program.

**Physiology Understanding Week**
In 2012, more than 11,000 students were reached at 72 event sites across the nation and Puerto Rico. This effort involved 61 APS member Lead Coordinators and a total of 527 scientists presenting and partnering with 263 classroom teachers and educators. The program exceeded its 2012 goal with outreach to 11,540 students. Distribution by grades included nearly 30% in high school classrooms, 40% in the primary and elementary classrooms, and 30% in middle school classrooms.

**International Science and Engineering Fair (ISEF)**
The 2013 Intel ISEF was held in Phoenix, AZ May 12-17th. More than 1,500 students from about 70 countries, regions, and territories presented their research. During the two evenings of awards ceremonies, more than $3 million in scholarships, cash prizes, and awards were distributed in categories ranging from behavioral science to engineering and medicine. This year’s APS judging team included Catharine Clark, Cornell University; Lila LaGrange, University of the Incarnate World; Johana Vallejo-Elias, Midwestern University; and Larry Alexander, Midwestern University. The APS judging team evaluated 50 projects based on students’ abstracts and selected 12 candidates to interview at their posters.

The first place APS award was presented to Ari Shi Gao, Texas Academy of Mathematics and Science for his project titled “Somatostatin Type 3 Receptors Mediate Protective Effects Against Seizures.” The second place APS award was presented to Ingrid Nieves Zippe, Hathaway Brown School for her project titled “Selective Oligodendrocyte Apoptosis as a Model for Multiple Sclerosis.” The third place APS award was won by Jay Kumar, duPont Manual Magnet
High School, for his project titled “What Are the Mechanisms Underlying Nicotine Induced Neutrophil Apoptosis?” The APS Exceptional Science Award was won by James Nathan Hilt, Middleburg High School (Middleburg, Florida) for his project titled “Pumper's Paradise: Which Fast-Acting Insulin Analog Is the Most Efficient?”