Help protect the future of physiology

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Without effective role models, how can we expect to maintain a pool of students to draw from for our future physiologists? The television and motion picture industries are currently replete with scientific role models. From emergency room doctors and surgical residents, to forensic scientists and even numerologists, the entire entertainment industry is portraying science and scientists to be cool. That is obviously great news for science in general. Unfortunately, as yet, there is no television show or movie that chronicles the trials and tribulations of a physiologist.

During the K–12 years, students are constantly formulating their opinions about what they find interesting and exciting and what they think they might want to pursue as a career. They often consider the science they learn in school to be boring and tedious. Elementary school science education tends to be less hands on and inquiry based and more involved with the rote memorization of science “facts.” By the time they reach the middle school years, many students have come to a firm and sometimes irrevocable acceptance that they either “hate” science or that they are “bad at it,” essentially shutting the door on that option for the future. Those few who hold on to some interest in science through high school tend to be directed into classic science career choices, such as medicine and engineering. Anatomy, physiology, and other advanced biology courses are rarely taught at the high school level and are increasingly vulnerable to budget cuts. How are students to know if they might have an interest in physiology when they have little to no exposure to it in school or in the media? How can we expect the future of physiology to remain bright when students have no understanding of the discipline and no role models to look toward?

In 2004, the American Physiology Society (APS) Council approved and funded a pilot member outreach program developed by the APS Education Committee. Physiology Understanding (PhUn) Week was designed to encourage its members to get out into the community once a year with the goal of informing and exciting students about physiology as a discipline and as a potential career (Fig. 1). PhUn Week was modeled after highly successful outreach efforts by other scientific societies, such as Brain Awareness Week (Society for Neuroscience) and Chemistry Week (American Chemical Society).

In November 2005, the PhUn Week pilot was implemented in 4 states (Wisconsin, New Mexico, North Carolina, and Washington) at 7 schools, reaching 539 students in grades 2–12. In addition to informing students about education and career opportunities in physiology, APS members led the students in entertaining, interactive physiology “experiments” and learning activities that highlighted the relevance of physiology in their everyday lives. Exercise was chosen as the theme, and the physiological responses and adaptations to physical activity were explored with the students in ways that they could personally relate to. Teachers and students alike were extremely enthusiastic about the presentations, and most teachers were interested in the possibility of participating in the program in future years. Teachers planned to incorporate concepts covered in the presentations into their curricula, and education and career planning materials were made available to teachers and guidance counselors. The results of the pilot indicated that PhUn Week has the potential to be a successful and productive outreach program for the society.

For 2006, the APS Council has approved a moderate expansion of the pilot with full implementation of the program by 2007. The immediate goal is to develop an effective website that researchers, teachers, and students will be able to use as a resource. The website will help to facilitate the formation of partnerships between APS members and K–12 science teachers interested in hosting their school visit. All materials required by the society members for the planning and execution of their presentation will be available on the website as downloadable PDF files. The website will also feature engaging information and tools for students and teachers including pre- and postvisit activities and career information. In addition, the 2006 expansion calls for the recruitment of additional APS member presenters so that increased numbers of students can be reached.

PhUn Week 2006 will take place again this November utilizing the exercise theme. Any APS member who would like to become involved should contact a local school and speak to the teacher who is the chair of the science department or one who teaches life science and let them know that s/he is willing to visit with a class or classes some time in November. This should be done early so that the teacher(s) can fit the visit into their schedule. The APS PhUn Week website (http://www.the-aps.org/education/phunweek.htm)
has plenty of ideas and resources for presentations and interactive activities for various grade levels. The researcher and teacher can discuss the types of activities that would be best for the visit. Society members can discuss their research or how and why they first got interested in physiology. They can show them a motivational and informative PowerPoint presentation compiled by the APS Careers Opportunities in Physiology Committee describing what a physiologist does and how to become one. Several exercise-related interactive physiology activities are available to carry out with the students. The visit could be the basis for a laboratory outing, where graduate students and postdoctoral fellows assist the principal investigator in the presentation, allowing students to observe physiologists at many levels of education and experience. While the PhUn week website provides many helpful ideas, there really are no set rules on what can be covered or how the presentation should be done. Whatever the APS members decide on, it is important to have fun with it and explore something they find interesting because if the presenter is having fun, the students will as well.

With deadline upon deadline to meet in our professional lives, taking half a day to make a presentation at a local school might seem ludicrous to some APS members. However, the effort is really not as daunting as it seems, and if every one of our members would take the time to visit one classroom, the results would be momentous. The future of physiology really might depend on it.