

American Physical Society

Committee on Education

2012 Annual Report

Meetings

Teleconferences took place on January 31 and July 23. Face-to-face meetings were held on April 19, 2012 (College Park) and September 29, 2012 (Denver). Of the 12 committee members (not counting APS staff and visitors) an average of 11 people participated in both the teleconferences and face-to-face meetings. At these meetings we had representation from AAPT (Executive Director), APS Forum on Graduate Student Affairs (Chair-Elect), and APS Outreach (Head of Public Outreach).

Subcommittees communicated with each other via email, a wiki-structure and via teleconference. Subcommittees were encouraged to meet and conduct business to report at the quarterly COE meetings. The subcommittee chairs coordinated their efforts with the Chair (Finkelstein) and APS staff (Hodapp and Ratnikova).

Committee Organization

The division of labor between the overarching committee and subcommittee structure (K-12 Education, Undergraduate Education, and Graduate Education) initially established in 2009 continued to work well, allowing for more work to be conducted, and for productive quarterly meetings. Additionally these working groups informed the education policy subcommittee, designed to focus on policy for APS regarding issues of education.

The **K-12 Education subcommittee** consisted of Rebecca Christianson (Chair), Paul Cottle, Jean Krisch, Mary Lanzerotti and Alan WP Poon. The **Undergraduate Education subcommittee** included: Andrew Zwicker (Chair), Eric Brewster, Rebecca Christianson, and David A Craig. The **Graduate Education subcommittee** included: Michael Thoennessen (Chair), Renee Diehl, Chandralekha Singh, and R Steven Turley

An **Education Policy working group** continued this year: Peter Collings (chair, and immediate past COE chair), Michael Marder, Noah Finkelstein, and Ted Hodapp. Christianson also attended and contributed to some of these meetings.

We established a new, hopefully standing, protocol for the COE and Education Policy Committee to report at the APS quarterly PPC (public policy committee) meetings. This occurred at the Spring (March 2) and Summer PPC (August 3) meetings.

Summary of Activities/ Outcomes:

The K12 work of COE focused on several issues to promote physics in K12. A draft of a revised APS Statement on Teaching of Physics in K12 Schools has been drafted and will be proposed to update/replace the statement from 2000. Other areas explored included providing a mechanism to couple physicists to the classroom and support career changers into teaching. The K12 subcommittee is exploring Industrial Partnerships in K12, by linking with the industrial forum and identifying industrial engagement in K12. We participated in the engineering education conference, with the explicit goal of identifying action for collaborations between engineering and physics partnerships in K12, especially in light of the Next Generation Science Standards. The committee did explore but opted to not currently engage in participating in professional development of physics teachers, and taking a position on informal K12 and alternative licensure.

At the Undergraduate level, APS COE offered the second year of its Award for Improving Undergraduate Physics Education. The program has been successful with several dozen applications, and high quality awardees (4 in each of the last two years). COE is in the process of providing resources for departmental reviews – providing guidelines and a match-making service for departments and reviewers. COE is continuing to provide resources for educational practice and will highlight the tools of the PER (Physics Education Research) Users Guide which is about to launch. The undergrad subcommittee continues to supervise the PER speakers list database. The committee has revised an APS Statement on Undergraduate Research that is being sent to POPA. Finally, the undergrad committee is working with AAPT on a joint taskforce on defining the outcomes and mechanisms for effective undergraduate courses and major (Undergraduate Curriculum Task Force).

At the Graduate level, the COE is supporting the *2nd Graduate Education in Physics Conference* being held January 31 –February 2, 2013 in College Park, MD. This effort represents securing funds from NSF, conceiving, organizing and running the event. Additional areas of work have been explored: efforts in graduate physics education research (linked with the Forum on Education), writing postdoc mentoring plans for NSF proposals, supporting the APS Bridge Program, and helping graduate students prepare for qualifying exams (in coordination with the Forum on Graduate Student Affairs).

At the policy level, the committee has continually worked on maintaining policy priorities. In the past year the committee has established dedicated staff time from APS DC office in education policy, and produced updates / priorities for the DC office and PPC. The education policy group has been working with and supporting a group building the new APS Topical Group in Physics Education Research (GPER). The working group drafted and has secured leadership from the Taskforce on Teacher Education in Physics for a Statement on Quality Teaching in Physics. The Taskforce is considering whether / how APS engages in certification of physics programs. Additionally the policy group has been linking with and supporting the efforts of the 100kIn10, AAU, and APLU initiatives in STEM education.

Collectively the Committee on Education has been reviewing the APS Strategic Plan and aligning its own efforts, and considering how it may address calls in the Strategic Plan.

COE maintains and seeks to expand its strong ties with other APS communities, hosting CIP representatives and sending a representative to CIP and PPC meetings, including members of Outreach and FGSA to COE meetings, and seeks to establish ties with FOEP. COE seeks to continue supporting PhysTEC, the APS Bridge Program, the new PAIR effort at APS, and the AAPT.

New Members have been nominated to join COE for 2013 and COE thanks those rotating off this committee for their significant service: Jean Krisch, Mary Lanzerotti, Andrew P Zwicker , and Chandralekha Singh. Paul Cottle has been nominated by this committee to assume chair for next year, as I will be rotating off this committee. It has been a pleasure to participate on and chair this committee.

Noah Finkelstein, Chair COE 2012