Breakout Session on Adoption of New Teaching Methods  
Notes from Bob Hilborn, AAPT

Several chairs noted that universities’ Teaching and Learning Centers (or equivalent) were often helpful in providing advice to physics faculty as they adopt new teaching methods by providing both expert and peer mentoring.

One chair at a major research university thought that most of the physics faculty in that department were totally unaware of innovative teaching methods and evidence for their effectiveness. Other chairs suggested sending faculty to the Physics and Astronomy New Faculty Workshop or to AAPT national meetings. Others suggested bringing in speakers with expertise in PER or innovative teaching methods or holding weekly brown bag lunches to discuss teaching.

Several chairs thought that senior faculty often advised junior faculty not to spend much time on teaching since tenure and promotion depend primarily on research productivity.

Several chairs suggested recruiting faculty from other departments such as chemistry or materials science to help with peer-evaluation of teaching. Develop a cadre of “master faculty members” who are trained to do peer-evaluation.

One chair suggested setting up departmental teaching awards for faculty to signal that the department values excellent teaching. Having a departmental culture that supports innovations in teaching is very important.

One chair described in innovative first-semester introductory physics course focusing on programming in VPython to allow students to tackle exciting problems. The course seems to be very successful in attracting students to the physics majors program.

Several chairs were worried about the possible impact of Massive Open Online Courses on enrollments in their service courses for engineers and life science students. They felt that the department needed to demonstrate value-added by classroom (face-to-face) activities.

Many chairs were concerned about finding out what engineers really want students to take away from introductory physics courses. Several described how they used surveys or one-on-one conversations to find out what the engineers wanted.

Many chairs were concerned that having multiple “tracks” for physics majors would dilute the physics degree. They wanted to have a specified core that all physics majors would take and that would define the minimum needed for a “real” physics degree.

Several chairs noted that a barrier to teaching innovation is the commonly held notion that each faculty member “owns” his or her courses and can do whatever she or he wants with them. Others noted it was important for the department as a whole to have responsibility for content and pedagogy but to allow for some flexibility for each faculty member to make minor modifications to courses as long as the major learning objectives were being met.