

### **Breakout Session: Internships, GK-12 Programs**

*Reported by Michael Thoennesen, session chair*

Edward van Keuren (Georgetown) led the discussion based on the Georgetown IGERT Industrial Leadership in Physics (ILP, <http://www.physics.georgetown.edu/graduate.htm>) program. The graduate students are required to take a one-year long industrial internship as part of the Ph.D. program. The program originated from a search by the physics department for a niche market. The industrial internship is typically taken in the year following the candidacy exam. It is important that activities during this year are well aligned with the research at Georgetown. The goal for the time-to-degree is 5 years, however, more realistically it is 6 years. Some of the breadth requirements were eliminated but no concessions to the core were made. In addition, the students take an intense business gateway and a capstone management course. About 10 offers are made each year - selected from 50-100 applicants - and 5-6 students enter the program. The first two students are about to graduate, so it is too early to judge the success of the program.

The program is very similar to the professional science master programs (<http://www.sciencemasters.com>) with the addition of the independent original research performed during the thesis. Bijoy Chatterjee from National Semiconductor remarked that there is a market for both degrees, the additional research experience is certainly valued. The question was raised if such programs are introduced on a broader scale could universities in collaboration with industry agree on a standard of what these programs should look like? It was mentioned that the program is equivalent to professional science masters program.

The formal NSF funded GK-12 programs (<http://www.nsfgk12.org/>) were not discussed in detail. In general it was felt that graduate student involvement in outreach activities is a very positive aspect of the graduate experience. However, it should not be a requirement. Professors should lead by example and encourage their students to participate.