

The Undergraduate Outcomes Assessment Committee, a subcommittee of CAP, met 15 times in 2010-11. Members were Lance Schachterle, Chair, Peter Christopher, secretary (A term), Peter Hansen, secretary (B-D terms), Mustapha Fofana, Art Heinricher, Chrys Demetry (project center assignment D 11), and students Emanuel Jimenez (fall) and Michael Egan (winter and spring).

UOAC concentrated on working with Dean of Undergraduate Studies Heinricher in preparing assessment data from several studies for the NEASC visit in October 2011. Information from these sources was used to update the faculty-approved "UOAC Assessment Plan for Institutional Learning Outcomes," which may be used as a source of data for the new NEASC forms on learning outcomes data.

UOAC's charge is to examine these learning outcomes data to determine, usually by comparisons with student responses from similar programs, if WPI students are reporting learning outcomes at a level significantly below peer groups. When such discrepancies appeared, UOAC discussed if the deltas were large enough for UOAC to suggest to CAP any changes in the WPI curriculum. In 2010-11, a number of negative deltas occurred but, in the opinion of UOAC, none was significant enough to propose curricular or program changes. Details of all UOAC findings were communicated to the whole faculty through our published Minutes.

Principal sources of outcomes data and the UOAC discussion of them included the following.

*Educational Benchmarking Inc surveys. (EBI).* WPI administers the EBI survey to all graduating engineering majors. As in previous years, WPI students reported less exposure to societal issues than some peer groups, while their subjective opinions on their learning on technical subjects was generally higher than the peer groups. Of special concern was lower responses in professional ethics. UOAC thus sponsored a Food for Thought luncheon in C term at which four engineering faculty discussed how they introduce professional ethics issues into classes and projects. The luncheon was well attended, and at least one engineering program is now formally proposing to include these societal outcomes in future MQPs.

Past EBI data has also shown concerns from seniors about their learning in calculus and differential equations. Since students take these courses typically two years before the survey, the time lag needs to be figured into interpreting the data. UOAC understands that the Calculus Committee in the Mathematical Sciences Department is using these data for appropriate revisions.

*The National Survey of Student Engagement (NSSE).* WPI administered this survey several times annually when it began in 2000, and recently has done so in years divisible by three. NSSE is administered to second semester first- and fourth-year students in all majors, and we compare our data not only with all NSSE schools but with a peer group of engineering universities. Again WPI students rate their technical outcomes favorably with respect to other groups, but the benchmark category "Active and Collaborative Learning" discloses lower ratings from WPI students. Since NSSE does not ask specifically about team work in projects, WPI students may not count their IQPs, MQPs, and the new HUA seminars here. Also, active and collaborative learning techniques are central to the new Global Problems Seminars in the first year, which less than half WPI students now take. Our expectation is that as enrollment in the GPS program increases, WPI student responses here will be more positive. Nonetheless, faculty were asked to include more active and collaborative activities, where relevant, in introductory disciplinary classes.

*Noel-Levitz Satisfaction survey.* This survey is conducted through Student Affairs, but some questions bear on academic issues. Generally WPI students were more satisfied than peers with quality and access of faculty, and with institutional reputation. But some evidence appeared that the larger classes is causing more problems in students easily getting the classes they desire, which translated into

dissatisfaction with academic advising and the Registrar's Office. Dean Heinricher and a faculty/staff group are investigating these issues further.

*MQP and IQP peer reviews.* Dean Heinricher made reviews available to UOAC through MyWPI and each UOAC member was asked to review reports in topic areas like communications where these reviews provide data for the UOAC outcomes matrix. Most but not all reports reviewed showed faculty were satisfied with the quality of writing in MQPs.

UOAC devoted one meeting to improving IT and critical thinking skills with senior Library staff (who conduct their own satisfaction surveys). The Library staff indicated undergraduates generally responded that support for their needs, especially for team research assignments, was good. But graduate students appear not to have access to the same level of support, and more staff may be needed to address this issue.

For writing skills, Prof. Jen deWinter attended one meeting to describe proposals to expand the "Writing across the Curriculum" program at WPI, to include designated writing-intensive courses in all departments which members of her program would help disciplinary faculty to prepare. UAOC also discussed the pros and cons of a required writing course for all students, and adopting a WPI-wide manual for writing with emphasis on technical writing. Such a manual, if adopted, would need to be tailored to the needs of each disciplinary department, in recognition that each discipline constructs and communicates knowledge differently.

UAOC believed the issue of writing was worth more study next year, including a survey of the WPI faculty to ascertain their opinions about the quality of student writing and their suggestions for improving communications skills.

Respectfully submitted on behalf of the committee,

Lance Schachterle