PRESENTATION FOR WEPAN'S INTERNATIONAL PANEL

May 25, 1993
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The goal of this panel is to encourage engineering schools to promote study abroad by their students, to prepare them for the international careers of the 21st century. The need for U.S. students to have international academic experience is not just an Engineering school problem, although engineering students are more hampered than most students in pursuing study abroad opportunities, due to their limited time for electives and tightly sequenced required courses. But U.S. higher education generally has failed to include study abroad as a serious part of the students' programs, and has not made it easy for students to go abroad and receive credit for work done there.

There are over 420,000 foreign students in the U.S. this year, most pursuing undergraduate and graduate degrees. Less than 100,000 Americans study abroad, mostly for just one summer or semester. Only a handful are engineering students. Most are middle-class caucasian female students in the humanities. In the study abroad field, unlike in engineering, when we talk of "under-represented groups" we include male students,

along with minorities and those in science and technology fields as target audiences whose participation should be increased.

Male students -- and especially engineering students -- just don't see study abroad as a career priority. Where men do see a career advantage in overseas exposure, they find ways to go. The explosion of study programs in Japan demonstrate this interest. And enrollment in some Japan programs are two-thirds male, as compared with the normal two-thirds female enrollment pattern for U.S. study abroad programs in Europe.

Let me reassure you that engineering students can go abroad, if they plan ahead and if they are supported and encouraged by their faculty. A new amendment to the reauthorization of the Higher Education Act lets all federal grants and loans for study at home be used abroad too. The new Boren National Security Education Act will create large pool of funds for language and area study to insure that enough Americans are competent in fields and languages where our security interests may be at stake.

The Fulbright Pre-doctoral Fellowship Program has openings for U.S. students in all fields - over 700 a year - to study abroad. Not just graduate students, but also graduating seniors. IIE administers this program for USIA; I've brought copies of the Fulbright brochure for you. You should note that some of these Fulbright Fellowship opportunities are not so

competitive as others. We have indicated in the brochure those host countries with less than a 5 to 1 ratio of applicants to winners. In the Near East/South Asia region, for example, there were 40 grants made available last year and only 41 applicants. Pretty good odds! 60 grants will be available next year.

IIE also publishes annual directories of study abroad opportunities - "Academic Year Abroad" and "Vacation Study Abroad" - which list over 3,000 programs open to U.S. students. Their indexes list over 200 programs offering coursework aimed at engineering students, along with the many others offering language, cultural courses and courses in business politics, economics, etc.

Finally, let me describe an IIE-sponsored program specifically for engineers -- a trilateral effort by Canada/Mexico/US schools to swap students in key fields whose careers will be profoundly affected by North American Free Trade Agreement. This is a three year pilot program funded by the U.S. Department of Education's Fund for the Improvement of Post-secondary Education (FIPSE) and started last fall with five engineering schools in each country, for a total 15 schools in year one. In the second year, 8 more engineering schools will be added and the program will also be expanded to 15 business schools. In year three, again we'll expand the

engineering and business participation and add a new program focus on environmental studies.

We began the pilot program with engineering, since we felt that this field would be the hardest, but also had the most "can do" task-oriented faculty. At a 2-day planning meeting in October 1992, there was an in depth discussion of issues and exchange of syllabi among participating schools. Later in the year, the schools nominated undergraduate and graduate student candidates to begin study abroad in fall 1993. In year two will be the actual exchange of students. ABET will help to evaluate the program in years two and three. One of the problems inherent in these exchanges is each side developing trust in each other's standards. After two days of meetings, one Canadian got up the courage to ask the Mexicans how they could be sure the courses in Mexico would be up to Canadian standards. David Reyes-Guerra of ABET was able to reassure the Canadians that the five Mexican institutions in the program offered solid instruction that would be perfectly appropriate for the Canadian undergraduates. But some of the Mexicans were doubtless offended by the question. There was also a problem of getting students to apply, a problem of engaging faculty support, a problem of not involving international student offices soon enough. Inevitably, there are problems of finances and of time commitment by the

interested students. At the end of spring 1993, 35 students had applied to participate for fall 1993, and 21 of them were accepted by host institutions.

There are lots of problems, but the time is right and the need is urgent to move ahead in this area. In Europe, all higher education graduates will be competent in two EC languages other than their own by the end of the 1990's. With support from the European Community, 10% of European students will study in another European country through ERASMUS and other programs. Currently, less than 1% of students in the US go abroad for study - and we are notoriously monolingual, despite the growing opportunities in multinational corporations. We must broaden our students' horizons and their international skills, if they are to function effectively in the marketplace of the 21st century.