AC 2009-1800: INTERNATIONAL STUDY ABROAD IN ENGINEERING/INDUSTRIAL TECHNOLOGY: THROUGH THE EYES OF STUDENTS

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International Study Abroad in Engineering/Industrial Technology: Through the Eyes of Students

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Faculty and programs in engineering/industrial technology often promote international exchange and study abroad as a desirable component of a university experience—particularly in this increasingly globalized world. But, what do students who have actually had such experiences perceive? How do they view such experiences, before, during and after the event? The following paper evolved from the experiences of four universities collaborating on an EU-FIPSE funded Atlantis project called DETECT that consist of the partnerships shown in Figure 1.

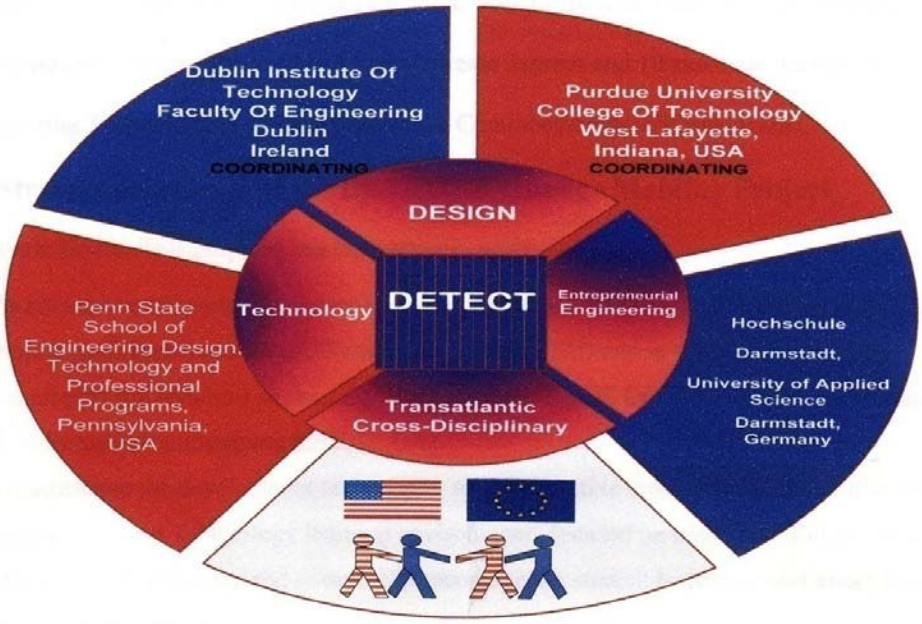

Figure 1: Project DETECT Partnerships

Central to this presentation and paper will be the opportunity to actually hear from students who have experienced both short term and full semester international study abroad experiences. The session will include participation of bachelors degree students from engineering/industrial technology programs from Germany (Hochschule Darmstadt), Ireland (Dublin Institute of Technology), and the USA (Pennsylvania State University & Purdue University).

<u>Student Perspective Topic Areas (addressed as needed and appropriate)</u>

- Student Life
- Housing and Food
- Academic/Class Culture
- Faculty Instructional & Assessment Strategies

- Travel & Transport
- Exchange Mechanics & Details
- Out of Class Benefits and Difficulties
- Recommendations for the Future

To date, according to the *Year I Evaluation Report* (2008) prepared by Dr. James Barnes, students have reported:

> Per interviews with the four participating students, two from Purdue University (PU) and two students from the Dublin Institute of Technology (DIT), during the weeks of May 19 – 23 and May 26 – 30, 2008. All students were either industrial technology or manufacturing engineering majors, for the most part analogous majors.
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> The *Student Evaluation of Exchange Experience* instrument, provided by Purdue University and used by BTILLC, is one that has been used often to interview exchange students and student mobility. Overall, the amount of global experience and how far along students were in their major were significant in the value-added by and appreciate of the exchange experience. The two DIT students had more international travel experience before the exchange experience, which better prepared them for what to expect from the exchange experience. One of the PU students was a sophomore who had not traveled internationally and who felted he was not well prepared for what he encountered during his exchange experience. This student also took general education courses at the Dublin Institute of Technology, while the other three students took courses in their major.
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> **Orientations and Post Debriefing**
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> Both PU and DIT students learned about the EU-US Atlantis DETECT program in similar ways. The students were made aware of the program through department fliers and from faculty who informed them about the opportunity during their classes. Some students found out about the exchange opportunity from the respective International Programs Office. Students at each institution were oriented by the institution's International Program Office and the principal investigators. The students also were provided an orientation by the exchange principal investigators. At each home institution, student orientation addressed:
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> - How to handle travel arrangements
> - Information about typical expenses and currency
> - How courses will be arranged
> - How credit transfer will be handled
> - Housing
> - Transportation
> - A tour of the campus
> - Information about Ireland or the US
> - Information about Dublin or West Lafayette
> - Arranged housing, including a city map and directions
> - Information about key academic contacts

- Basic cultural information
- Connecting with other former exchange students and current exchange students from other institutions
- How telephones work – DIT furnished a cell phone for the PU students
- Information about food and supermarkets
- Information about currency
- Information about traveling in Ireland or Indiana and other European countries or US states, including using local buses
- How to open a bank account
- How to handle sickness and medical problems
- Information about media (newspapers, television and radio)
- Information about the Internet and wireless services
- How to arrange courses and take exams
- How courses are handled within a semester

The students, with the exception of the PU sophomore student, felt that the home and exchange orientations were very informative and helpful. The sophomore student felt that he was not given enough information by his home institution about what he would encounter during his exchange experience. Housing and transportation for the PU students appeared to be a big issue, but not for the DIT students. The PU students felt that the housing arranged by DIT was too far from campus and they felt that the bus system was not very user friendly. To some degree, this dichotomy can be explained because of the vast international travel that the DIT students have experienced. The PU students realized that expenses in Ireland would be more costly than in the US due to current exchange rates. However, the cost turned out to be more than they had anticipated. The travel arrangements for the students were handled differently at each institution. At Purdue, students had to make their own travel arrangements to Dublin. The travel arrangements for the DIT students were arranged by DIT. The PU students received $5,000 which covered their travel and some of their lodging. DIT students received £5,000 which covered their travel, lodging, and because of the current exchange rate, the Dublin students had some money for other exchange activities.

Academic and Intellectual Achievement

Interestingly, all four students felt that the level of courses was at a lower level than at their home institution, but that the appropriateness of content was about right. The only exception was the sophomore student from Purdue. The two DIT students felt that the effectiveness of teaching and laboratory experience was about right. They also were very impressed with the nature of the courses and instruction. However, they were not used to the amount of homework they encountered at PU. Conversely, the PU students did not feel that the effectiveness of teaching and laboratory experience was as good as they typically receive at PU. The comments by the students about their coursework and instruction can, to some degree, be attributed to the different ways courses are scheduled at DIT and PU. All students felt that all the professors at their exchange university were excellent and very open and

helpful in working with them through problems that arose during their exchange studies.

Cross Cultural Understanding and *Weltanschauung* (global perspective)
Gaining a cultural understanding about their exchange city and country was extremely important to all students. In fact, all students indicated that this aspect of their exchange was one of the best aspects of their exchange. The students said that they interacted often with the faculty and staff at their exchange institution and that they felt these sessions were very informative and helpful. They felt comfortable interacting with fellow students in their courses, but indicated that they had more interaction with other exchange students. All students were able to travel and to do sightseeing in their exchange city, state or country.

This presentation will be delivered by several students who have actually engaged in study abroad. Also involved, but in a secondary role, will be faculty who have guided such work on both sides of the Atlantic. The students will highlight, in addition to the above:

- Strengths of the experience
- Key weaknesses and/or difficulties
- Barriers to participation
- Recommendations for enhancement

The presenters, both faculty and student, will address the experiences they found surprising: in terms of the visited program/country's approach to engineering/industrial technology; how the program was taught and organized there; the nature of student—faculty interactions and laboratory activity; and, of course, the cultural differences of student life in terms of living arrangements, entertainment, and student interaction and expectations.

Faculty involved with the presentation will share materials useful to others contemplating such activity. These materials will include planning guidelines and necessary steps for the safety and quality of experience, funding suggestions and hints for minimizing the costs, as well as suggestions for integrating the experiences with the students' program so that the time-to-graduation is not extended and that the student has guidance to capitalize on the experience with additional relevant opportunities such as internships and work experience in global settings.