

**Iowa State University  
College of Engineering  
Ames, Iowa  
International Multi-Partner Action (IMPACT) Initiative**

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Funding from a private grant made it possible to initiate a new program within the College of Engineering in 2000. This faculty-focused program was developed to support the college's international education and experiential learning program, and has made a step-function improvement in our ability to attain our international program goals. These goals state that over 60% of our faculty and 33% of our students will have an international experience. (College of Engineering Blueprint, n.d.)

The International Multi-Partner Action (IMPACT) program (see Appendix A) was created to utilize this grant. Under the IMPACT program, grant funds have been used to support approximately 60 faculty who have visited 36 universities and industry in 14 countries around the world over the past three years. These cross-departmental teams of three to five faculty are lead by a faculty member. Prior to departure, the team creates goals which reflect the College's mission to grow and expand international partnerships and opportunities for our faculty and students.

As noted in the attached IMPACT "Key Initiatives Criteria," faculty are encouraged to incorporate the following into their international visits:

- Research Opportunities
- Course Credit Compatibility
- Faculty & Students Exchanges
- Industry Visits
- Investigation of Large Group Programs
- Experiencing the Culture

The following are examples of the results from IMPACT team visits:

- The number of students participating in an international experience is up 90% since receiving IMPACT funds in fall 2000; nearly doubling student participation.
- Five new 6-week summer programs have been developed, with more in the planning process. This is in comparison to having one summer program available to Chemical Engr. students since 1990.
- New research collaborations have been initiated in:
  - o Civil Engineering
  - o VRAC
  - o Industrial & Mfg. Systems Engineering
  - Construction Engineering
  - Materials Science & Engineering
  - Chemical Engineering

- Faculty Exchanges/Sabbaticals were completed in the following areas:
  - o Materials Science Engineering – England
  - o Mechanical Engineering – Australia

Countries visited through the support of IMPACT funds:

- |                                     |               |
|-------------------------------------|---------------|
| - Australia                         | - Japan       |
| - China                             | - Mexico      |
| - Denmark                           | - Netherlands |
| - United Kingdom: England, Scotland | - Singapore   |
| - France                            | - Spain       |
| - Germany                           | - Switzerland |
| - Ireland                           | - Turkey      |

The IMPACT program continues to be a huge success.

- The inter-departmental collaboration has created networking and synergy between College of Engineering departments.
- The increased number of faculty who are now more informed about the countries and programs that they visited are valuable resources to our students.
- Faculty are excited about the many outcomes they experienced beyond their expected goals.
- Many new research collaboration opportunities have been discovered.
- We have increased and strengthened our industry networking and collaborations.
- We have increased the number of faculty and students who have a broader more global vision, who see the value of having an international experience and are willing to work hard to promote the same.

The following faculty comments provide an excellent summary of the value and success of this program:

"The trip to Singapore gave me the opportunity to discuss numerous potential interactions with NUS and NTU, in academia, research, and distance learning. The trip has resulted in the involvement of two of my faculty in research projects and the discussion of PhD student exchanges as a method of improving research collaborations. Without this initial trip, the faculty and I would not have considered Asia as a viable place to do collaborative research; indeed, we seem to have "forgotten" this area of the world as a source of ideas and challenges. A valuable eye-opener." - Pat Patterson, Chair, Industrial and Manufacturing Systems Engineering

"My time spent [on an industrial sabbatical] was extremely rewarding and I consider it one of the greatest educational experiences of my life. I gained a greater appreciation for the ways of

industry as well as a large amount of practical experience in failure analysis. I plan to use this knowledge to better instruct our undergraduates in the future.” - Scott Chumbley, Material Sciences and Engineering

“It is important that those [faculty] who coordinate exchange programs visit the cooperating institutions occasionally to 1) maintain personal relationships with those they work with; 2) orient those coming here, and 3) interview those Iowa State students about their experiences while they are still abroad. Last May I visited Lausanne with IMPACT funding for four days, and was able to meet all three goals. This trip gave us the opportunity for peer mentoring between Dr. Elia and myself and program building. Without IMPACT funds, this trip would not have been possible.” - Peter Reilly, Chemical Engineering

“Over the next academic year, I will be on a Faculty Professional Development Leave in Canberra, Australia. This opportunity for research with colleagues overseas is a direct result of the IMPACT trip to Australia May 2002. Aside from developing the details of international student exchanges with University of Sydney, University of New South Wales, Sydney, and the Australian National University, I also had the opportunity to meet with professors there, to see their research first hand, and to present important aspects of my research to them. This led to discussions about faculty exchanges, and as a result, I will be spending some time there working to develop theory related to robotics and teleoperation over the Internet. IMPACT support for my trip to Australia gave me a great opportunity to leverage research funds and made this trip possible.” Greg Luecke, Mechanical Engineering

Appendix A

**Iowa State University - College of Engineering**

**PROJECT *IMPACT***

<b>International Multi-Partner Action FY 2003 - 2004</b> <b>Key Initiatives Criteria</b>
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The “Key Initiatives Criteria” creates a process for us to positively impact the following student and faculty objectives:

- More than 60% of the faculty will have at least three months of engineering-related experience in another country.
- At least 33% of bachelor’s graduates will have at least six weeks of engineering-related work or educational experience in another country.

To be designated as an **IMPACT** project for FY 2003-2004, an International Project must meet the following criteria:

**INFRASTRUCTURE:**

- A signed and active Memorandum of Agreement (MOA) is in place or approval has been given to development a new agreement.
- Language barriers are addressed and resolved with innovative solutions.
- The project is lead by an ISU Faculty Exchange Program Coordinator that is energized about the partnership. The Coordinator will recruit and lead a team of three to five faculty (preferably from other departments) who will work collaboratively to ensure the growth of the program with our partnering institution to enhance faculty and student exchange opportunities.

**FACULTY:**

- Enhances opportunities for our faculty to teach/give seminars at the partnering institution and collaborate with faculty and vice versa.
- Enhances opportunities for our faculty to conduct research projects at the institution and vice versa.
- Enhances opportunities for our faculty to have an international industrial or technology transfer experience.
- Professional Development Activities are leveraged to build long-term relationships and create opportunities for others.
- Other sources of money being contributed to the project are identified to reflect matching dollars.

**STUDENTS:**

- The project is with a partnering institution with comparable breadth and stature as ISU.
- Enhances opportunities for our students to study at a partnering institution within the guidelines of the MOA. Course credit transfers are in place.
- Partnering institution must have an employer base that mirrors ours and/or has employers who have locations in the U.S. and are interested in co-operative education for students going both ways.
- Partnering institution is a good candidate for creating Learning Communities, Summer Programs or other programs that would involve groups of ISU students at one time.

Action:

IMPACT Grant Application Due Date: September 15, 2003:

Purpose and Goals of Trip  
IMPACT Team Members  
Timing of initiative  
Location of initiative  
Estimated cost with matching funds  
Oral Team Report  
Written Team Summary Report  
  
Submit to: J. Apple-Smith (japlsmith@iastate.edu)