GEARE CALLOUT

OFFICE OF PROFESSIONAL PRACTICE

THURSDAY, JANUARY 22, 2015

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Global Engineering Alliance for Research and Education (GEARE)

• The premier international opportunity offered to Purdue Engineering students.

• Founded in 2003 in the School of Mechanical Engineering. Originating with programs in Germany and China. Expanded to all Schools within the College of Engineering and available in any country with an Engineering exchange partner.

• The only global engineering program in the country to encompass language study, study abroad, domestic and international professional experiences, and international design team projects.

• Less than 4% of Engineering students in the U.S. will graduate with global engineering experiences. Less than 1% will have a significant global experience the like the one offered through GEARE

• GEARE Video
  https://www.youtube.com/watch?v=NjC2y8ooxAs&feature=youtu.be
Student Experiences

• Nick Dininger - CHE, UK

• Nick Sherck - CHE, Germany

• Austin Saragih - IE, Germany
Austin’s GEARE Global Experience

• US and International Internships
  – IE Intern, Henry Ford Health System, **Detroit, MI**
  – Engineering Intern, Adaro Power, **Jakarta, Indonesia**
  – Purdue Summer Undergraduate Research Fellowship

• Semester Abroad at Karlsruhe Institute of Technology
  – MA 266
  – NUCL 273
  – IE 370
  – IE 490 (7 crs.)

Travel Around Europe
WHY GLOBAL ENGINEERING

Automotive Marketplace

Brand?
USA-Chevy
Market?
Brazil
Design?
Germany-Opel
Production?
Australia
Boeing 787 Dreamliner
Even though math and science concepts are constant, the ways in which the concepts are understood vary between cultures. Approaches to work, prioritization, and deadlines can be vastly different. Communication styles, language barriers, and different concepts of teamwork can cause misunderstandings leading to huge and costly delays.

Example:
Two teams of international engineers worked on NASA’s $125 million Mars Climate Orbiter, which was launched in 1998. For the navigational software, each team was using an incompatible measuring system—metric and imperial. Each team assumed its methods were correct and the leadership did not notice or check. As a result, the Orbiter approached Mars at a much lower altitude than expected, plunged into the planet’s thin atmosphere and incinerated.
The Global Engineer is
• Technically adept
• Broadly knowledgeable
• Multilingual and culturally aware
• Innovative and entrepreneurial
• Knowledgeable about world markets
• Commercially savvy
• Professionally flexible and mobile

(S. Kraft, Continental AG, 10th ACIEE, Nov. 2007)
The Global Engineer

- Treats others with dignity and respect
  - Understands other cultures
  - Respects other cultures
  - Learns language and history
- Is receptive to people and their ideas
- Has experience integrating into a culture different than their own by being flexible and open-minded
- Understand locals are not trying to upsets foreigners, it’s the way they work, and can accept and adapt
- Is less directive outside own culture
- Treats international interaction as an adventure!

(S. Kraft, Continental AG, 10th ACIEE, Nov. 2007)
Students completing GEARE will graduate with

- A Global Engineering Minor
- At least intermediate competency in a foreign language
- Enhanced communication skills
- Enhanced teamwork skills
- Enhanced problem solving skills
- Enhanced organizational skills
- An understanding of various approaches to engineering
- A high level of cultural sensitivity
- Worldwide connections and friendships

Expanded Career Opportunities
Eligibility
• Students must maintain a 3.0 GPA to be a member of GEARE

GEARE Requirements
• Complete 12 credits of a foreign language prior to international work/research experience
• Attendance at 5 GEARE meetings during the Sophomore year
• 1 domestic work/research experience
  o International students may complete domestic internship/research experience in their home country or the U.S.
• 3 one-credit cultural orientation seminars (ENGR 297 prior to international experience, ENGR 397 while abroad, ENGR 497 after return to the U.S.)
• 1 semester of study abroad
• 1 international work/research experience
  o International students may complete international internship/research experience in the U.S. or in another country.
• Global Design Team Project
• GEARE Poster Symposium (Assignment within ENGR 497).
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292 GEARE students have graduated since its creation in 2003.
166 current GEARE students
- 3.46 Avg. GPA
- 66 Females, 100 Males
- 141 U.S. citizens
- 25 International Students from China, Colombia, Costa Rica, India, Indonesia, Kuwait, Thailand, and Turkey
- 103 Sophomore Cohort, 39 Junior cohort, 24 Senior Cohort
- 62 ME, 24 ChE, 19 IE, 15 EE, 15 AAE, 10 CMPE, 8 BME, 8 CE, 3 ABE, 2 EEE, 2 MSE
- Languages studied: 44% Spanish, 38% German, 10% Chinese, 6% French, 1% Japanese, 1% Russian
GEARE STUDY ABROAD LOCATIONS

https://opp.purdue.edu/programs/geare/index.html
GEARE continual expands industrial partnership and opportunities are not limited to the lists below.

**Domestic and International internship employers**: Mercedes, Daimler, Cummins, Eastman Chemical, P & G, Bechtel, Dow Chemical, John Deere, United Technologies, Cummins, GE Aviation, Alcoa, Parker Hannifin, Walsh

**International internship employers**: Siemens, Thyssenkrupp Steel, Eaton, Bosch, DLR, Kimberly Clark, Behr, Rockwell Automation, Schlumberger,
1. After being accepted to GEARE, update your resume regularly. The Office of Professional Practice will highlight GEARE students to participating companies.
2. Research companies. Target companies operating in the U.S. and your intended host country.
3. Utilize the Center for Career Opportunities to aid with your search.
4. Network with faculty, advisors, and older GEARE students to inquire about their industrial and institutional connections.
5. Attend Career Fairs such as Industrial Roundtable and Professional Practice Days.
6. Be attentive and set up job search habits.
GEARE is a cost neutral program

- Students will study abroad at Purdue exchange partners and pay their normal tuition to Purdue.
- Students will be responsible for room and board in their host country. Room and board expenses will be similar to the cost of living on campus in most locations.
- While participating in international internships, most companies will provide enough financial support to support housing and meal expenses.
- Students will pay $400 Professional Practice Fee to register for domestic and international work experiences.

Scholarships and aid available

- Students may use their current financial aid packages to support study abroad.
- All students are eligible for one $3,000 scholarship from Purdue to support a semester of study abroad.
- GEARE students may apply to the Office of Professional Practice for travel assistance grants ranging from $500-$1,500.
- Students are encouraged to apply for outside study abroad scholarships. The OPP office will help direct students to available opportunities.
1. Visit GEARE on the Professional Practice Website- https://opp.purdue.edu
2. Apply online, upload transcript and resume
3. Must have a 3.0 GPA and be able to obtain 12 credits of a foreign language prior to the international internship
4. Applications will be sent to GEARE coordinators within the student’s academic major. GEARE coordinators will evaluate application and possibly interview students before choosing the students to admit to the program.
5. First year students apply by February 28th
Second year students apply by September 30th
(Sophomores must have earned/tested out of at least 3 credits of a foreign language
GEARE Responsibilities

Student Responsibilities
• Acquire domestic and international work/research experiences
• Work with GEARE coordinator to complete plan of study
• Complete all program requirements

OPP Responsibilities
• Establish relationships with companies and institutions to provide opportunities for student work/research and recommend students for internships at GEARE partner companies.
• Maintain GEARE student records and recommend those who complete all requirements be awarded a global minor
• Provide career and cultural training

GEARE Coordinator Responsibilities
• Review applicants and admit students into the program
• Advise students on a plan of study
• Assist students in finding internship placements

Office of Study Abroad Responsibilities
• Provide information about available study abroad programs
• Assist with transfer credits
• Assist in training students for foreign travel and answer all questions related to study abroad
AAE: Prof. Marc Williams & Prof. Bill Anderson
ABE: Prof. John Lumkes & Prof. Martin Okos
BME: Prof. Andrew Brightman & Jeremy Hale
ChE: Prof. Zoltan Nagy & Karissa Raderstorf
ECE: Prof. Jeff Gray & Cindy Quillen
EE/IDE: Prof. Philip Wankat
EEE: Prof. John Sutherland & Tammy Thayer
IE: Prof. Vince Duffy & Pat Brunese
MSE: Vicki Cline
ME: Prof. Chuck Krousgrill & Jerry Matthews
NE: Prof. Anter El-Azab & Chrystal Randler
GEARE can be combined with Co-Op!

- Finish first semester with a GPA eligible for both GEARE and Co-Op.
- Come to the Co-op callout in January
- Apply for GEARE in February if a First-Year student or in September if a Second-Year student.
- Work with GEARE and Co-op Coordinators to align a plan of study
- Work with company to organize an international rotation.

Companies like Mercedes and Daimler are already hiring for a combined Co-op/GEARE program, and this can be organized at other companies as well.
# GEARE + Co-Op Schedule

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12 Credit Hours of Study Abroad
Int’l Internship/ 2nd Co-op rotation (12 week min)
Global Design Team
ENGR 497 and GEARE Poster Symposium

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**Sophomore meetings**

**Sophomore meetings**

**ENGR 297**

**ENGR 497 and GEARE Poster Symposium**
JUMPSTART YOUR GEARE EXPERIENCE

• Start taking foreign language courses as soon as possible

• Search for a summer internship for the summer after your freshman year.

• Participate in Office of Professional Practice Summer Programs
  • Experience German Engineering Maymester Program
  • UCDC Summer Internship Program

• Participate in a Summer Study Abroad Program like:
  • Stuttgart Summer University
  • LALS Abroad: Global Internship (Colombia)
  • Lima Internship and Study Abroad (Peru)
  • Introduction to Intercultural Teamwork in China
  • Other Language Oriented Summer Study Abroad Programs
**WHO we are:** GEARE leaders who are **DEDICATED** and interested in **GLOBAL ENGINEERING**.

**WHAT we do:**
- Advance GEARE **BRAND** to students, alumni & employers
  - Presenting to Freshman classes, hosting tables at events such as Purdue’s For Me, Career Fairs and Study Abroad Fair.
- Promotes **BONDS** in GEARE
  - at least 3 social events each semester which include soccer, international potluck, GEARE BBQ, Study Breaks, etc.
- Improve students’ Overall GEARE program **EXPERIENCE**
  - Pass down course information, country survival guides, travel tips, etc.
  - Interact with international exchange students at Purdue
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