

7 | INTERNATIONAL PROGRAMS

The ABE department has an extensive history of international involvement. In the 1960s, for example, ABE faculty members were involved in starting the GB Pant University of Agriculture and Technology in India. The ABE department has a cosmopolitan faculty, more than half of whom grew up in other countries. These include Richard Cooke from the West Indies, Grace Danao from the Philippines, Tony Grift from the Netherlands, Al Hansen from Zimbabwe, K.C. Ting from Taiwan, Kaustubh Bhalerao, Prasanta Kalita, and Vijay Singh from India, and Lei Tian, Xinlei Wang, Qin Zhang and Yuanhui Zhang from China. In addition, typically at least half of the post doctoral and graduate students in the department have been from other countries. The department served as host to numerous visiting scholars, most of who were from other countries. A list of visiting scholars is given in the appendix. Also, some departmental students have participated in study-abroad programs and the department has hosted study-abroad students from other countries. Specific examples of departmental international activities are described below.

REPUBLIC OF SOUTH AFRICA

In the summer of 2004, Al Hansen took a group of ABE students on a four-week trip to South Africa to work with students enrolled at

the University of KwaZulu-Natal (UKZN). Similar trips were made in the summers of 2006 and 2008 and future trips are also planned. The objectives of the trips were to expose students to a different culture and to the application of technologies appropriate to South African needs by collaborating on short-term engineering design projects with South African students. In the spring semester preceding each trip, each participant was required to present a paper on an assigned aspect of South Africa and its culture. At the end of the semester, the ABE students met their UKZN counterpart students via a videoconference.

In the summer, Al Hansen flew to South Africa with the students to meet the UKZN counterpart students and begin the project activities. The projects were selected by the ABE students from a list of possible projects submitted by UKZN. The students spent approximately 12 days working intensively on the projects in collaboration with the UKZN students. The students also went on guided excursions to a number of game reserves to see wild animals indigenous to South Africa. They also made visits to mountainous and coastal areas to provide the students with a broad exposure to South African society, culture and its rich ecology and wildlife.

Equipment, software and sensors needed in the research projects were purchased using funds from Deere and Company and from the ABE department. These items were left behind for the use of the UKZN students when the ABE students returned to University of Illinois.

After returning from South Africa, each ABE student completed a survey form to provide feedback. Most students indicated the experience had a beneficial effect; about half said the experience substantially improved their teamwork and interpersonal skills. An example of survey responses was: "Going to South Africa was an awesome experience I will keep with me all of my life. I had a wonderful time learning about the country and its people first hand. I also feel that I may have helped to introduce technology that will help improve their agricultural productivity in the future."

Following is a list of projects and ABE student participants for the three trips to South Africa. Except where indicated in parentheses, each student was an ABE undergraduate engineering student.

Projects 2004

1. Precision agriculture systems
Students: Scott Dixon, Kevin Knapp, Justin Bruns
2. Sugar cane cutter performance
Students: Anthony McCullough, Nick Jones (TSM)
3. Design of a micro-flood irrigation system
Students: Laura Schutte (grad), Geri Wellen
4. Sugar cane crane with automatic weighing system
Students: Seth Wenzel, Zach Waite

Projects 2006

1. Designing and manufacturing a torque meter sensor for closed loop PTO dynamometer testing
Students: Andrew Lenkaitis, Amanda Olsen, Matthew Whyte
2. Design and construction of a pedal-kayak
Students: Paul Davidson (grad), Luke Zwilling
3. Design and construction of a production unit for biodiesel
Students: Jonathon McCrady (grad), Joshua Vonk

Projects 2008

1. Design of a small scale pyrolysis device for cottage industry charcoal production
Students: Jenita Johnson (TSM), Curtis Zurliene
2. Design, construction and testing of a jab planter
Students: Jason Buss, Michael Leick
3. Innovative heating and cooling for a broiler chicken house using a heat pump water heater system
Students: J. Malia Appleford (grad), John Scheider, Jacob Walker
4. Design of a small scale biomass cooking and heating device for low income households
Students: Patrick Malone (TSM), Ryan Richards (TSM)
5. Micro-algae biodiesel production system
Students: Elizabeth Brooks, Rachel Trigger (Australian exchange student)
6. Wastewater treatment at the Shallow Drift/Umgeni Crocodile Farm
Student: Malia Appleford (grad)

GREECE

In the summer of 2009, Steve Zahos took seven Illinois students to Greece on a “Cradle of Democracy” tour. He coordinated the tour with Dr. George Papadakis of the Agricultural University of Athens (AUA). Papadakis’ two research areas were renewable energy and micro-grids for providing power and desalinated sea water. The Illinois students chose projects from among these areas.

Illinois students Eric Stein, Cris Noble and Shikhank Sharma studied mini-grids, micro-grids and smart grids. Sarah Sotiropoulos and Emmy Riley studied biofuels. Amy Balek and Brent Dirks studied photovoltaic power and solar thermal energy storage. Each Illinois student team worked with one or two AUA graduate students.

Zahos and the Illinois students also spent time on educational and cultural excursions. One trip was to the University of Thessaly to observe the making of stove fuel pellets from agricultural materials. They also visited TERRA, Greece’s largest manufacturer of agricultural equipment. Another trip was to the island of Kythnos to see a photovoltaic hybrid system developed by the European Union. The system uses solar and wind energy to power houses on the island. Since Dr. Papadakis had a summer house on the island, the students were able to enjoy the local beach.

Other cultural outings included trips to the Olympic Stadium, the Parthenon, the Acropolis and the islands of Crete and Santorini. Santorini has a dormant volcano off the coast. Gasses from the volcano heats the sea water and visitors can see water swirling as the hot water contacts the cold water of the sea.

At the time of writing, Zahos was planning to conduct a similar tour to Greece in 2010.

INDIA

An experience in India began when, in the Spring of 2006, students in Prasanta Kalita’s ABE 456 course decided to write a grant proposal instead of a research paper. The proposal, on bio-remediation of agricultural chemicals to protect groundwater, was submitted to the EPA P3 (People – Prosperity – Planet) project and was funded in the amount of \$10,000. The funds enabled the class graduate and undergraduate students to compete in a Sustainable Design Experience in Washington,

DC, in April, 2007. When it concluded, the EPA director announced that the ABE team was one of 6 (out of 50) winners of a \$75,000 grant for additional work. The team also had breakfast with Illinois senators Durbin and Obama.

The additional funds enabled the team to add an international element to their project on biofiltration. In December, 2007, Kalita and his students traveled to India to visit the GB Pant University of Agriculture and Technology. This university was started as part of the University of Illinois extension mission in the 1960s. Despite struggling with a language barrier and a scarcity of tools, the ABE team installed a biofiltration system during the visit. They also visited numerous historical sites, including the Taj Mahal and also had an opportunity to learn about the people and culture of India.

The participants in the India experience included the following; all except one (a student from Purdue) were from the University of Illinois:

1. Stephen Anderson - Graduate Student , ABE
2. J. Malia Appleford - Graduate Student, ABE
3. Elizabeth Brooks - Undergraduate Student , ABE
4. Paul Davidson - Graduate Student, ABE
5. Joseph Good - Undergraduate Student, CEE
6. Gregory Goodwin, Graduate Student, ABE
7. Daniel Koch, Graduate Student, ABE
8. Amanda Olsen, Undergraduate Student, ABE
9. Curtis Zurliene, Undergraduate Student, ABE
10. Luke Zwilling, Undergraduate Student, ABE
11. Debapriya Mazumdar, Grad Student, Dept of Chemistry, UIUC
12. Lindsey Birt, Graduate Student, ABE, Purdue
13. Richard Cooke, ABE faculty
14. Laura Hahn, Center for Teaching Excellence
15. Cheelan Bo-Linn, Center for Teaching Excellence
16. Prasanta Kalita, ABE faculty

EGYPT

Phil Buriak visited Egypt three times as an agricultural mechanization consultant. He worked with selected Egyptian faculty members

in preparing instructional materials to enhance practical and technical training in selected agricultural mechanization courses for the 50 Agricultural Technical Schools (ATSs) in Egypt. The materials were for development of psychomotor skills, skill sheets, job descriptions for functions in Upper Egypt, task title glossaries and evaluation rubrics. Counterpart Egyptian faculty members will introduce the new teaching materials to enhance the capacity of ATS teachers to provide practical skill training to their students. Education for employment was the principal goal.

POLAND

Kent Mitchell was a Visiting Professor in the Department of Hydraulic Structures, Faculty of Land Reclamation and Environmental Engineering, Warsaw Agricultural University (WAU), Warsaw, Poland from August to early December, 1998. He worked with with Dr. Kazimierz Banasik, who was involved in the hydrology of agricultural watersheds, rivers and reservoirs, and investigations and physical modeling of hydraulic structures. Mitchell also chaired a technical session and presented a paper at the 3rd International Conference on Hydrosience and Engineering in Cottbus, Germany and at the Conference on Environmental and Technical Problems of Water Management for Sustainable Development at WAU. He gave lectures to classes on Erosion Mechanics, Erosion and Water Quality and Erosion Control. He presented the lecture for Inauguration Ceremonies for The Inter Faculty Program of Environmental Studies, WAU, and Radom College. He was also involved in many other research and teaching activities. Mitchell was also an invited guest speaker at Institute of Geophysics, Polish Academy of Sciences, Warsaw, Poland.

In 2001, the Honorary Badge, Warsaw Agricultural University, Warsaw, Poland for “recognition of meritorious service to Warsaw Agricultural University” was conferred on Mitchell by the WAU Senate.

In 2002, Mitchell was invited to chair a session at the Fifth International Conference on Hydro-science and Engineering, Warsaw, Poland. In 2004, he was invited to chair a session at the Sixth International Conference on Hydro-science and Engineering, Brisbane, Australia.

From June to December, 191, Elizabeth Bruns was an International 4H exchange student to Poland.

CHINA

For more than two decades, Robert Easter worked with the American Soybean Association and the US Soybean Export Council office in Beijing to bring practical swine production workshops to Chinese livestock producers, feed company technical consultants, the Ministry of Agriculture and provincial extension agents. These workshops continued after Easter became ACES dean. Ted Funk was the swine facilities agricultural engineer on a four-person team for five summer trips of two weeks each in the period, 2004–2008. The other members on the team were experts on genetics and meat quality, nutrition, and veterinary medicine. The teams also included four translators. Each team performed farm visits, workshops and seminars in three different locations for a total of six locations reached each year.

Funk observed many local swine facilities with their construction and management practices, and made recommendations based on his experiences in North American and elsewhere. He taught workshop segments on confinement building ventilation, building management, flooring, manure handling systems, remodeling, biosecurity, and building security.

ENGLAND

During the period that Silsoe College offered undergraduate degrees in Agricultural Engineering, the ABE department at Illinois had an exchange program with Silsoe College. Students from the ABE department would spend a semester or two studying at Silsoe College and students from Silsoe College would spend a semester or two studying in the ABE department at Illinois. Careful advising was used to allow these study abroad experiences without delaying the earning of the BS degrees. A summary of these study abroad experiences is given below.

Table 7.1 Students from Silsoe to ABE at Illinois

Name	Time	Program*	Institution*
Mark Johnston	July-Sept 1980	IAESTE	NCAE, Silsoe, UK
Stephen Hickman	July-Sept 1981	IAESTE	NCAE, Silsoe, UK
Edmund J Hughes	July-Sept 1989	IAESTE	Silsoe College, CU
Ravia Bhusia	July-Sept 1990	IAESTE	Silsoe College, CU
Jonathan Richard Miller	June-Dec 1992	IAESTE	Silsoe College, CU
Jonathan Mark Treagust	Aug-Dec 1992	IAESTE	Silsoe College, CU
Georgios Barzis	Aug-Dec 1992	IAESTE	Silsoe College, CU
Victoria Emerson	July-Dec 1993	IAESTE	Silsoe College, CU
Almudena Lorenzo	Jan-July 1994	IAESTE	Silsoe College, CU
Lindsey Anne Stewart	June 1995-Sept 1996	Study Abroad	CU at Silsoe
Joanne Francesca Philpot	Aug 1996-July 1997	Study Abroad	CU at Silsoe
Ian Wayman	Aug 1997-Aug 1998	Study Abroad	CU at Silsoe
Stewart Mitchell	Aug 1997-July 1998	Study Abroad	CU at Silsoe
Mark Peter Wheeler	Apr-Oct 1999	ASET/CEA	CU at Silsoe

*Programs: IAESTE – International Association for the Exchange of Students for Technical Experience. Study Abroad – study abroad agreement between UIUC and Silsoe College, ASET/CEA – Association for Sandwich Education and Training/Cooperative Education Association; Institutions: NCAE – National College of Agricultural Engineering, CU – Cranfield University.

Table 7.2 Students from ABE at Illinois to Silsoe

Name	Time	Program
Claire Ann Eldridge	June-Dec 1984	IAESTE
Joe Frazee	1992-1993	Study Abroad
Mike Boston	uncertain	Study Abroad
Candice Rutter	1994-1995	Study Abroad

In addition to the exchange program with Silsoe College, ABE students participated in the numerous other exchange programs listed in Table 7.3

