FUTURE PROGRAMS

HONG KONG, CHINA
Topic: Solar energy
Partner Universities: Chinese University of Hong Kong & University of Hong Kong
Faculty: Cynthia Lo & Ruth Chen

CAMPINAS, BRAZIL
Topic: Bioenergy
Partner University: State University of Campinas
Faculty: Yinjie Tang & Ruth Chen

ISTANBUL/ANKARA, TURKEY
Topic: Sustainable management of water resources
Partner Universities: Bogaziçi University & Middle East Technical University
Faculty: Venkat Subramanian & Ruth Chen

SHANGHAI, CHINA
Topic: Transcontinental air pollution patterns & environmental informatics
Partner University: Fudan University
Faculty: Rudy Husar & Ruth Chen

INTERNATIONAL EXPERIENCE REQUIREMENTS
• Undergraduate students must be in good standing with a 3.0 overall GPA
• Applications are due at the end of October of each year
• Scholarship decisions are made in November of each year
• Students are required to participate in the pre-program seminars on environmental informatics, Web technology, energy and environmental topics, and history and culture of the host country
• Each student is responsible for a seminar presentation to the partner university
• Students register for EECE 401 in the fall following the summer experience and present a video documentary of the summer; an individual report on lessons in energy and environment learned and on the culture of the host country
• Students attend weekly classes to discuss research projects developed from the summer; a seminar presentation on the research project in November; and a research report in December

CONTACT INFORMATION
Ruth Chen, MPH, PhD
Professor of the Practice & Program Director
PHONE: (314) 935-6103
E-MAIL: ruth.chen@wustl.edu
eece.wustl.edu/internationalexperiences

MCDONNELL INTERNATIONAL SCHOLARS ACADEMY UNIVERSITY PARTNERS
Bogaziçi University
Budapest University of Technology & Economics
China Agricultural University
Chinese University of Hong Kong
Chulalongkorn University
Fudan University
Indian Institute of Technology Bombay
Interdisciplinary Center Herzliya
Jawaharlal Nehru University
Korea University
Middle East Technical University
National Taiwan University
National University of Singapore
Peking University
Seoul National University
State University of Campinas
Tata Institute of Social Sciences
Technion–Israel Institute of Technology
Tsinghua University
University of Chile
University of Hong Kong
University of Indonesia
University of Tokyo
Utrecht University
Washington University in St. Louis
Yonsei University
The defining characteristic of the School of Engineering & Applied Science is an eagerness to cross boundaries in research and education. Our faculty and students develop innovative solutions for the most urgent challenges facing the world: sustainable energy, a cleaner environment, next-generation information technology, and improved health care. We work with colleagues in medicine, social work, architecture, and the sciences — both on our campus and around the world — to transform our vision of a better world into today’s reality. We create the world of tomorrow, today.

In 2008, the Department of Energy, Environmental & Chemical Engineering (EECE) created several international experiences for students to develop:

- global perspectives in energy and environment
- the ability to work in an international environment
- appreciation of cultural subtleties
- teamwork skills

INTERNATIONAL EXPERIENCE PROGRAM OVERVIEW

The EECE international experience program gives undergraduate students the opportunity to broaden their education by learning about global energy and environmental problems and solutions through the McDonnell International Scholars Academy, a global network and international incubator for new ideas in research and education. Including Washington University, the Academy consists of 26 premier universities from around the world that work together to promote global connectedness, educate future world leaders, and address global challenges in areas such as energy, the environment, public health, and cultural understanding. (mcdonnell.wustl.edu)

The international experience is a three-credit elective course (EECE 401) that spans 13 months. EECE faculty members guide students through pre-program seminars in winter and spring prior to the summer experience. Each student is responsible for a seminar presentation to Washington University and partner-university students and faculty on a project related to energy and environment. Students also visit local industries, regulatory agencies, and testing laboratories.

Upon return to St. Louis, students present their research seminars and submit a detailed research report in December.
RECENT & FUTURE INTERNATIONAL EXPERIENCE PROGRAMS

BEIJING, CHINA

During the inaugural international experience in Beijing, students studied air quality management and the special challenges for air pollution control before the 2008 Summer Olympics. Participants attended lectures by the Chinese representative to the Kyoto Protocol and directors for key laboratories for air pollution control and classes at Tsinghua and Peking universities.

Faculty: Jay Turner & Ruth Chen

Lecture Topics

- Acid rain, ozone, and climate change
- Aerosol pollution in China
- Air quality forecasting for the Olympics
- Electric power generation in China
- Environmental management in China
- Environmental policy & investment
- Health impacts of air pollution
- Mobile sources & air pollution

SEOUL, SOUTH KOREA

The international experience in South Korea focused on the development of nanotechnology and aerosol sciences. Students visited four universities and two national laboratories. While visiting Yonsei University, students gave seminar presentations on water splitting, solid oxide fuel cells, nanomedicine, biomimicry, wastewater treatment, and nanotoxicity.

Faculty: Pratim Biswas & Ruth Chen

Lecture Topics

- Biotechnology & nanoparticles
- Hydrogen fuel cells & solar cells
- Microfluidics
- Nanomanufacturing
- Nanoparticle & aerosol energy
- Nanoparticle & geothermal energy
- Nanoprobes in bioimaging & therapy
- Nanotechnology in energy safety

MUMBAI, INDIA

Students received broad exposure to energy and environmental issues in India by visiting faculty at Indian Institute of Technology, Bombay (IIT Bombay). They also visited multinational corporations, Tata Institute of Social Sciences, and a rural village to observe utilization of biomass as energy sources. Students also traveled to Mumbai, Mahabaleshwar, Bangalore, Agra, and Delhi to visit landmark sites.

Faculty: Pratim Biswas, Daren Chen & Ruth Chen

Lecture Topics

- Air quality in India
- Bioenergy
- Colloids & aerosols
- Control systems
- Electrospray & applications
- Global challenges in aerosol sciences
- Reaction engineering
- Traffic & air pollution