Executive Summary

International Experience 2008 Beijing

The inaugural International Experience in Energy, Environmental and Chemical Engineering (EECE) took place in the summer of 2008 in Beijing, China. The unique feature that sets this program apart from other programs is the for-credit study of a timely issue in energy and environment: air pollution control for the 2008 Beijing Olympics, which forms the basis for current sustainability initiatives in China. The success of the program is due to: a) the strength of the expertise of the partner universities of the McDonnell International Scholars Academy in China; b) the timely topic of the instruction; and c) the quality and preparation of the students from Washington University in St. Louis (WUSTL) and the students from the partner universities.

The partner universities are Tsinghua and Peking Universities. Tsinghua University is the premier Chinese technological institute. It was originally funded by Boxer Rebellion indemnity money paid to the United States by imperial China that provided for Chinese students to study in the U.S. In a twist of history, most of the Tsinghua professors who taught the WUSTL students had been educated in the United States. Peking University is the premier Chinese comprehensive university. Historically Peking University has been a leader of progressive reform, especially academic freedom and diverse intellect in Chinese higher education.

The topic of this three-credit course, EECE 401, was air pollution control for the Beijing Olympics. The timeliness of environmental concern and the excitement for this premier global athletic competition provided tremendous interest from the faculty and students. Tsinghua and Peking Universities have two of the leading Chinese State Key Laboratories of Air Pollution Control appointed by the Chinese government. In addition to air quality forecasting and control for the Olympics, the topics of the lectures in which our students participated included environmental management, environmental policy and investment, mobile sources and electric power generation, nanoparticle aerosol sciences, health impact, and Chinese perspectives on ozone and climate change.

The eleven selected students were all from the School of Engineering & Applied Science at WUSTL. They included two members of our NCAA Division III national championship men’s basketball team, the top EECE sophomore, a Danforth Scholar, a Hispanic youth mentor, peer advisors, musicians, dancers, and Iranian Cultural Society officers. The preparation in the spring and summer 2008 included seminars in Chinese language, modern history and politics, global patterns and intercontinental transport of air pollution, power options of rural China, environmental informatics and Web technologies. Three students had already taken Chinese language classes. Each successfully completed a seminar presentation in November and a research paper in December on diverse topics of energy and environment.

The benefits the students derived from international experience can first be seen from their interest in returning to China to tackle environmental and energy issues in the future. To that end they have built meaningful academic and career networks based on their contacts with Chinese academic leaders in and out of the classroom. The combination of high quality education from WUSTL and a meaningful exposure to the Chinese model of solving pressing environmental problems will serve them well in functioning as productive engineers and world citizens.