

HIGHLIGHTS FROM THE BIOTECH CENTER

June 2009

Faculty Activities and Accomplishments

Albert Ayeni (Plant Biology & Pathology) visited Nigeria and Kenya May 22-June 4 as Co-PI of the International Science and Education (ISE) initiative funded by USDA/CSREES with matching funds from Rutgers/NJAES. **Michael Lawton** (Plant Biology & Pathology; Biotech Center for Agriculture and the Environment) and **Jim Simon** (Plant Biology & Pathology) are also Co-PIs on the project, which is designed to identify new crops (ethnic vegetables and biofuel crops) for New Jersey and the US, and to strengthen the international content of SEBS' agricultural curriculum. Collaborating institutions in Africa are the University of Ibadan (UI), Nigeria, and the Kenya Agricultural Research Institute at Thika (KARI-Thika), Kenya. Dr. Ayeni met with the ISE coordinators and administrators at both institutions to discuss project implementation details as well as the hosting of Rutgers students who will be spending part of summers in 2009 and 2010 as interns at these institutions. Dr. Ayeni also observed some of the major cultivated and wild vegetables on local farms with local experts. *Solanum* spp. and *Gynandropsis* spp. were very common in both the Nigerian and Kenyan agricultural food systems, and local people highlighted the therapeutic qualities of these species in addition to their nutritional values. Potential biofuel plants observed were elephant or (Napier) grass (*Pennisetum purpureum*) in Nigeria and Kenya, and Guinea grass (*Panicum maximum*) in Nigeria. *Jatropha* sp., a potential biodiesel plant, was being researched at UI, Nigeria.

Eric Lam (Plant Biology & Pathology; Director of the Biotech Center for Agriculture and the Environment) was invited by Applied Biosystems China (now part of Life Technologies) to deliver a lecture entitled "Characterizing the epigenome in plants via ChIP-seq with NextGen sequencing" at the Beijing Institute of Genomics (part of the Chinese Academy of Sciences) on June 12th, and in the College of Life Sciences and Technology of Guangxi University (Nanning, China) on June 16th. Together with Assistant Research Professor **Rong Di** of the Biotech Center and Assistant Professor **Todd Michael** of the Waksman Institute of Microbiology, he also visited Guangxi Academy of Sciences in Nanning and Kunming Institute of Botany, Chinese Academy of Sciences in the Yunnan province, June 14th- 20th. During this time, Prof. Lam gave 2 lectures entitled "Smart Plants: creating more fermentable plants for biofuels through genetic engineering" in the two locations while Rong Di gave 2 lectures entitled "Detection of Shiga toxins and E. coli O157:H7 by surface plasmon resonance." This visit to Guangxi and Yunnan also served as a critical step in drafting Memoranda of Understanding and Cooperative Research Agreements between Rutgers University/Biotech Center and the research programs in the two Chinese institutions. The legal documents should be completed in the next two months.

Student Activities and Accomplishments

Graduate student Elyse Rodgers-Vieira (Zylstra laboratory, Biotech Center for Agriculture and the Environment) attended the Theoretical and Practical Course on Molecular Approaches for in situ Biodegradation at the University of Oklahoma, May 24 to June 7. Only 24 students were invited to participate in the course out of 84 applicants. Twelve were from the U.S. and twelve were from the E.U., in order to foster the idea of transatlantic cooperation in young scientists as they begin their careers. The Oklahoma short course was modeled after the highly successful

course offered at Rutgers in 1998 and in Madrid in 2003. Drs. **Jerome Kukor**, **Lily Young**, and **Gerben Zylstra** of the Biotech Center are three of the seven U.S. members of the Joint U.S.-E.U. Transatlantic Environmental Biotechnology Task Force responsible for sponsoring the short courses, and helped to plan the Oklahoma event.

Conferences, Seminars, and Other Events

A wide-ranging symposium was presented at SEBS May 27-28 on the “New Biology of Environment and Health,” with about 150 participants attending. Nine outstanding external speakers in the areas of health, environment, and energy spoke about how systems-wide analysis of biology is revolutionizing our ability to understand how these fields interact. Speakers included Rita Colwell (Canon US Life Sciences), Robert Strausberg (Craig Venter Institute), Ron Mazumder (Merck), Janet Jansson (Lawrence Berkeley National Lab), Colleen Cavanaugh (Harvard), Roger Beachy (Danforth Plant Science Center), Christoph Benning (Michigan State), Tom Jeffries (USDA Forest Products Lab), and Martin Keller (Oak Ridge National Lab). Program details can be found at: <http://biotech.rutgers.edu/envhealthsymposium/index.html>. The symposium involved collaboration across campuses and was sponsored by contributions from Rutgers central administration, SEBS, the Biotech Center, the Department of Biochemistry and Microbiology, and the Waksman Institute. Members of the symposium coordinating committee were **Max Häggblom**, **Eric Lam**, **Wendie Cohick**, and **Ilya Raskin**.

Faculty member **Lily Young** (Environmental Sciences; Biotechnology Center for Agriculture and the Environment) and her graduate student **Amita Oka** attended the Goldschmidt Geochemistry Conference in Davos, Switzerland June 21-26. Amita gave an oral presentation on "Evidence for anaerobic biodegradation of hydrocarbons in the subsurface environment."