HIGHLIGHTS FROM THE BIOTECH CENTER
November 2008

Faculty Activities and Accomplishments

Biotech faculty members Michael Lawton, Ilya Raskin, and Gerben Zylstra were asked by Dean Goodman to serve on the SEBS International Programs Committee. They will serve two-year terms under the leadership of Lily Young, Dean of International Programs. Additional members are Ramu Govindasamy, Bingru Huang, and Mark Robson. Dr. Zylstra was also appointed to the New Brunswick Faculty Council as the representative from the New Brunswick Graduate School.

Student Activities and Accomplishments

Dr. Gerben Zylstra coordinated the annual SEBS undergraduate trip to Brazil to participate in the University of Sao Paulo undergraduate research symposium the week of November 3. The seven students presenting posters this year were Joanne Ahn (Max Haggblom lab), Shravan Dave (Lily Young lab), Amy DeMicco (Lori White lab), Ramya Raviram (Lena Struwe lab), Erik Sakowski (Don Kobayashi lab), Dharika Shah (Dawn Brasaemle lab), and Mike Strug (Carol Bagnell lab). The students were accompanied by graduate student Jessica McCormick and faculty member Lori White. The students presented their posters on three campuses of the University of Sao Paulo system: Sao Paulo, Piracicaba, and Ribeirao Preto. Financial support for the trip was obtained from Dean of International Programs Lily Young, Dean of Academic Programs and Research Jerry Kukor, Chair of Plant Biology and Pathology Jim White, and from Dr. Gerben Zylstra's Department of Education undergraduate student exchange grant with Brazil.

On October 30, graduate student David Rotter successfully defended his Ph.D. thesis entitled "Creation of a framework genetic linkage map of colonial bentgrass and the identification of genomic regions associated with dollar spot resistance". David works in the lab of Faith Belanger. He will be leaving in early December to take up a postdoc position at the University of Texas Southwestern Medical Center, where he will work in a cardiac research lab.

Rocky Graziose, a graduate student in Ilya Raskin's lab, presented a seminar on October 27 as part of the Plant Biology Graduate Program series. His topic was "Botanical antimalarials: Past, present, and future."

Not previously reported, four undergraduate students in Max Häggblom's lab received Aresty Fellowships to support their research projects. They are Joanne Ahn, Francis Ortega, Jennifer McConnell and Katherine Parisi. All of the students are Microbiology majors except for Joanne Ahn, who is a Molecular Biology & Biochemistry major and a Rutgers Scholar. Francis Ortega and Jennifer McConnell are GH Honors Scholars.

Grants and Fundraising Efforts

Max Häggblom is leading a new project studying the microbial communities active in Arctic tundra soils. He was awarded a grant of 420,000 Euros from the Academy of Finland for the 4-year study, titled "Impact of climate fluctuations on microbial communities responsible for

carbon and nitrogen cycling in Arctic soils." The project involves collaboration between the Finnish Forest Research Institute, the University of Jyväskylä and Rutgers University.

Additional support was provided by the National Science Foundation for a related study: "Microbial subzero activity and its impact on biogeochemical processes in frozen tundra and permafrost." The project was funded at $538,000 for 3 years and includes collaborators Lee Kerkhof, PI (Rutgers, Institute of Marine and Coastal Sciences), Max Häggblom and Nikolai Panikov (Dartmouth College). In September Max Häggblom and Lee Kerkhof visited Finland for a one-week field experiment in northern Lapland to test the use of stable isotope probing (SIP) for "metabolic fingerprinting" of the microbiota active in carbon and nitrogen cycling. This study will also have broader impact by providing a basis for predicting the effect of long-term temperature changes and global warming on microbial activity in Arctic soils.

Max Häggblom also received funding from the Maj and Tor Nessling Foundation in Finland for a project assessing the potential for anaerobic microbial dechlorination of PCDD/Fs in River Kymijoki Sediments. The project is funded at 25,000 Euros annually, renewable for 3 years, and will support one Ph.D. student at the University of Helsinki supervised by Dr. Häggblom. The project is a collaboration between the University of Helsinki Department of Ecological and Environmental Sciences, the Finnish Environment Institute (SYKE), and Rutgers University.

Elisabetta Bini received one of the Pre-Tenure Career Development Awards provided by the School of Environmental and Biological Sciences. The title of her project is "Effects of metal ions exposure on regulation of oxidative stress pathways and development of genetic tools for its analysis." The award covers the period from November 2008 to June 2009.

Conferences, Seminars, and Other Events

The first NRF/GIBEX-Africa workshop was held in Cape Town, South Africa, from November 3-6, 2008. The focus was to set an agenda for natural product R&D for human health in Africa. The workshop was organized by the University of Cape Town and jointly sponsored by the South African National Research Foundation (NRF) and the Global Institute for BioExploration (GIBEX). Participants came from Canada (1), Ecuador (2), sub-Saharan Africa (26), Switzerland (1), the UK (1), and USA (8). Participating from Rutgers University were Albert Ayeni, Faith Belanger, Slavik Dushenkov, Slavko Komarnytsky, Ilya Raskin, James Simon, and Lena Struwe. Sixteen papers were presented by invited international experts in natural product (NP) R&D highlighting the opportunities in Africa and the challenges facing the discipline at national and institutional levels. At the wrap up session led by Dr. Gordon Cragg (Retired Head of the Natural Products Branch of the US-NCI Developmental Therapeutics Program), the workshop resolved that GIBEX-Africa would adopt a primary focus on discovery and development of plant-based products for treatment of parasitic diseases, especially trypanosomal and heliminth-related diseases.

Nilgun Tumer was an invited seminar speaker at the Department of Cell and Developmental Biology at Oregon Health and Science University (OHSU). On Nov. 10, 2008 she presented a seminar etitled " Ribosome interactions of ricin."