

## HIGHLIGHTS FROM THE BIOTECH CENTER

August 2008

### **Faculty Activities and Accomplishments**

After serving as Director of the Biotech Center since October 2001, Professor Gerben Zylstra has stepped down as of June 30. Dr. Zylstra has been active in all aspects of the Center's programs from building infrastructure to research, teaching, outreach, and international exchange programs. Dr. Zylstra founded and managed the biorobotics lab, the DNA sequencing core facility, the biotech equipment shared facility, and the Foran Hall computer classroom; as well as providing support for major equipment shared with other departments on the Cook campus. As a result, the Biotech Center's facilities and the strength of its research program have been instrumental in recruiting new faculty to SEBS. Dr. Zylstra also encouraged a major increase in international research collaboration, participating actively in research projects with Central Asia, Brazil, South Korea, and the European Community, while continuing his own very productive research program with major federal support and more than 60 publications in the last 7 years. In addition, he obtained federal grants to fund graduate fellowships in Microbiology (DoEd-GAANN), U.S.-Brazil undergraduate exchange (DoEd-FIPSE), and biotechnology undergraduate fellowships (NSF-SSTEM), while carrying a heavy teaching load of 4 or more undergraduate courses per year and supervising numerous graduate and undergraduate students in his own lab. He has been a member of the Rutgers Graduate School Executive Committee since 2006, served on the self-study committee for the Middle States Reaccreditation, and served as faculty advisor to the Designer Genes club since 2005, among countless other committees within Rutgers as well as outside. Dr. Zylstra is taking a year's leave before resuming his regular teaching and research responsibilities as a member of the Biotech Center and the Department of Biochemistry and Microbiology.

Professor Eric Lam (Plant Biology and Pathology) has been appointed by Dean Goodman to serve as director of the Biotech Center during a transition period of 2 years during which an international search is planned to recruit a new director for the Center. In addition, Dr. Lam will focus on opportunities to expand the Center's mission in SEBS and promote greater interactions with the University community, with input from Center faculty and SEBS leadership.

Dr. Gerben Zylstra traveled to Kazakhstan and Kyrgyzstan August 9-21 as part of his NIH funded FIRCA grant to work with Kyrgyz colleagues and the Biotech Center's NIH-funded ICBG project in Central Asia. In Kazakhstan he met with research collaborators and discussed the status and direction of the microbiology portion of the ICBG project. Dr. Zylstra returned to the U.S. with actinomycete cultures isolated by the Kazakh scientists for further work on identification and utility of the microorganisms. Dr. Zylstra also met with the new director of the Kazakstan Institute of Microbiology and Virology to discuss future collaborative research projects, the possibility of advanced training of Kazakh microbiologists at Rutgers, and how to obtain funding for various joint research projects. In Kyrgyzstan Dr. Zylstra spent four days at the Kyrgyz Turkish International University discussing research progress, future directions, and training students and faculty on new techniques for their joint NIH-funded FIRCA project. In addition, Dr. Zylstra spent four days with his collaborator Dr. Tinatin Doolotkeldieva collecting soil in the Issyk-Kul region for microbial analysis at Rutgers.

### **Student Activities and Accomplishments**

On August 9 the Biotech Center high school internship program organized by Dr. Gerben Zylstra came to a close with a symposium where each of the twelve students gave a presentation on his or her work. This internship program stems from long term collaboration between the Monmouth County Biotechnology High School and Dr. Zylstra, who is on the High School Advisory Board. The twelve high school students spent five weeks working in the laboratories of Biotech Center faculty Drs. Bagnell, Haggblom, Lawton, Leustek, Tumer, Young, and Zylstra.

In addition to the students from Monmouth County, Dr. Michael Lawton also hosted a high school student from The Pingry School in Bernards Township. Jared Cohen worked on induced immunity in *C. elegans* together with undergraduate student Veeran Rajah. This is the second year Dr. Lawton has hosted a student from Pingry.

### **Conferences, Seminars, and Other Events**

Not previously reported, Michael Lawton (Plant Biology and Pathology) attended the Pan-American Congress on Plants and BioEnergy, in Mérida, Mexico, June 22–25, 2008. He met there with colleagues from University of Sao Paulo (USP) Brazil to plan and coordinate activities in biofuels and to focus on areas that can benefit from joint research activities. This meeting was very helpful in defining the agenda of upcoming workshops in Cellulosic Ethanol and Biofuels that will include participants from Rutgers, USP and Ohio State University. It is clear that biofuels is emerging as a critical area for joint research between USP and Rutgers with opportunities for additional research activities as well as expanding joint training and teaching programs at the graduate and undergraduate levels.

Drs. Michael Lawton and Research Assistant Hemalatha Saidasan attended a meeting on “*C. elegans* Aging, Stress, Pathogenesis and Heterochrony,” held August 3-6, 2008 at the University of Wisconsin-Madison. This meeting allowed them to showcase their work on host:pathogen interactions which was supported from a grant by the Charles and Johanna Busch Foundation. Dr. Lawton presented a talk entitled "Genetic dissection of pathogenic interactions of *Lysobacter enzymogenes* with *C. elegans*". Dr. Saidasan presented a poster entitled "Mode of action of microbial toxins in *C. elegans*". Feedback from both presentations was very positive. As a result, they will establish collaborations with researchers at The Burnham Institute and UCSD (San Diego), Princeton University (NJ) and the Centre d'Immunologie de Marseille-Luminy, INSERM/CNRS (Marseille, France). Dr. Lawton notes that his work on *C. elegans* is the result of collaboration with the labs of Don Kobayashi and Brad Hillman (Plant Biology and Plant Pathology, Cook, SEBS) and Monica Driscoll and Barth Grant (Molecular Biology and Biochemistry, Busch, SAS).

Dr. Nilgun Tumer attended the XII International Congress of Mycology in Istanbul, Turkey August 5-9 and gave an oral presentation. Assistant Research Professor Rong Di from Dr. Tumer's lab joined her in attending the XIV International Congress of Virology, Aug. 10-15, also in Istanbul, Turkey. Dr. Tumer gave a presentation titled "Endoplasmic reticulum targeted

toxins inhibit activation of the unfolded protein response by preventing splicing of the Hac1 mRNA". Dr. Di's presentation was titled "Inhibition of Hepatitis C virus internal ribosome entry site by pokeweed antiviral protein non-toxic mutants" in the session on Hepatitis C virus.