



Department of Biochemistry & Microbiology Newsletter Cook College

The Lipman Log

Volume 2 Issue 1
Max M. Häggblom and Kathy Maguire, Editors

July, 2004

News from the Chair: Alan D. Antoine

Greetings to everyone and welcome back to *The Lipman Log*. The Spring semester has ended, and most of us are fully engrossed in our summer research activities. The last six month's activities include new honors and awards, grants, publications, and presentations on the part of the faculty, postdoctoral fellows, students and staff, and many of these activities are described herein. The department's seventeen faculty sponsor nine Post Doctoral Associates, forty graduate and nearly as many undergraduate students, and nine visiting scholars at last count. Undergraduate and graduate course and laboratory instruction continued at a fast pace in all disciplines with nearly 870 students enrolled in 18 different courses. This excludes all independent study, lab rotation and research registrations, which are also significant. The majority of this instruction is at the undergraduate

level. Let me elaborate on this point a little more.

The department faculty can be evenly split into two discipline groups, one focusing on biochemistry and toxicology, the other focusing on biotechnology and microbiology. The majority of the course offerings are listed under the biochemistry and biotechnology curricula that are based at Cook College, although the main undergraduate course in microbiology, i.e. General Microbiology, is currently listed in the Genetics and Microbiology curriculum in the Faculty of Arts and Sciences (previously Rutgers College on Busch campus), but this "curricular ownership" is about to change. In addition, as I noted in the January issue, the department is the home base of the curriculum coordinators for the Biochemistry major (Ted Chase) and for the Biological Sciences major (myself). Both majors administrate in excess of 300 under-

graduate students, and this administrative role will expand for the department this Fall with the startup of the Microbiology major under the coordination of Max Häggblom. Max will tell you more about this latter program. Finally, we do teach other courses as well, but these are mostly Cook College mission courses and select graduate courses.

Whatever the New Jersey State budget turns out to be over the next couple of months, we anticipate running all of our teaching programs next year. A large part of this is due, not to the budget we finally receive, but to the overwhelming energy and devotion to instruction that the department faculty and staff give every semester in so many ways. They are, as always, a great bunch of people to work with in the department.

Have a great summer!

The Microbiology Major comes to Cook: Max Häggblom

The establishment of a new undergraduate major in Microbiology based at Cook College received final approval by the Board of Governors in June. The major will be offered starting Fall 2004.

The program will build on the strong *tradition* of microbiology at Cook College. Microbiology was previously part of the curriculum in Genetics and Microbiology administered by the Faculty of Arts and Sciences Department of Genetics. The reorganization brings Microbiology back to Cook and will provide strong synergy with the existing programs in Biotechnology, Biochemistry and Biological Sciences. Faculty in the Department of Biochemistry

& Microbiology, Environmental Science, Plant Biology and Pathology, Food Science, and Ecology, Evolution and Natural Resources will contribute to the programs. It is exciting to step in as Curriculum coordinator!

The new curriculum provides an organismic focus on microbiology with an emphasis on the uniqueness of microbial biology and the enormous diversity of microbial life. The primary objectives of the program are to broadly educate students on the biology of microorganisms and prepare them for positions in microbial industries and graduate/professional study in life sciences through extensive laboratory, course work and research experience.

The curriculum will examine the diverse roles of microorganisms in the environment and cover the fundamentals of microbial diversity, physiology and genetics, with a focus on microorganisms and microbial processes for *their own sake*. The curriculum examines the nature and activity of microbial populations in aquatic and terrestrial ecosystems, the interactions within microbial communities, and biogeochemical cycles and energy flows. The program also provides students with an understanding of the various applications of microbes in biotechnology, the food industry, agriculture, and medicine.

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Faculty Laboratory Profile

Peter Kahn



Protein biophysics- We study protein folding and the intermolecular interactions between protein subunits of multimolecular complexes, between proteins and small ligands, and between cations and DNA. Particular emphasis is placed on the role(s) of water of hydration. Among the properties of hydrating solvent that differ from those of bulk water is the density. Changes in density manifest as changes in volume, which we measure, along with a variety of spectroscopic and other properties. Both equilibrium and kinetic data are obtained, often from the same experiments. In the refolding of ribonuclease-A, for example, two slow processes are seen which occur concurrently with different time constants and different kinetic responses to altered solution conditions. One entails a rise in volume, while the other yields a fall. Their molecular bases have been tentatively identified. In a collaborative project we have fused a leader sequence to a globular protein which is not normally secreted from the cell. The fusion product folds to the native conformation, but its folding is retarded by the presence of the leader, with implications for the control both of secretion and for folding *in vivo*. Lastly, in theoretical work we have developed methods for the analysis of protein secondary and tertiary structures that will aid in protein design and have implications for folding. This last project is computational and makes heavy use of graphics.

Toxicology and environmental science of dioxins and related compounds- In a collaborative project we have developed methods to evaluate past exposure of people to dioxins and related compounds. Studies of Vietnam veterans exposed to Agent Orange during the war have been completed. We have also studied environmental exposure of marine animals which feed on contaminated sediments, the materials through the food chain. Laboratory studies have focused on purification and identification of proteins that bind dioxin. For this purpose we have developed an affinity purification column to which dioxin is covalently attached. An understanding of which proteins may be involved in dioxin binding will help us understand the broad and somewhat nonspecific manifestations of the toxicity caused by these compounds.



Bill Ward

Green fluorescent protein and applications of bioluminescence

Our current research interests fall into two categories: 1) the elucidation of biochemical components in the bioluminescence of coelenterates and 2) the application of this knowledge in developing practical genetically-based assays for gene expression.

1. We are currently completing the characterization of a bioluminescence energy transfer system involving a unique chromoprotein known as the green-fluorescent protein (Chalfie et al., 1994). Fluorescence involves a post-translationally modified tripeptide in the primary sequence of the protein (Cody et al., 1993). We have recently proposed an evolutionary relationship between the biosynthetic pathways of luciferin and GFP (Ward & McCapra, 1993).

2. The GFP gene has been cloned and is expressed as an inheritable fluorescent cell marker in all species tested. (Chalfie et al., 1994). We now have reason to believe that luciferin is also genetically encoded. Thus, it may be possible to establish a nearly universal *in vivo* bioluminescence assay for gene promotion, induction and repression and to design a bioluminescent "Ames test" or "Rec-assay" based on the coelenterate bioluminescence system.



A five and one-half day hands-on laboratory course using the remarkable Green-Fluorescent Protein (GFP), A Novel Marker For Gene Expression, as the source Material. <http://www.rci.rutgers.edu/%7Emeton/protein.html>

FACULTY HONORS AND AWARDS

Tamar Barkay received the Cook/NJAES Research Excellence Award (2004) at the awards ceremony on April 22. This is in recognition of her recent significant contributions in research and scholarship to the microbial ecology profession.

Diane Forsyth Davis, received the Cook/NJAES Academic Innovation & Creativity Award (2004). Davis is the Instructional Laboratory Coordinator, Biochemistry and Microbiology.

Faculty News

Conferences / Symposia/ Workshops

The International Conference on Arctic Microbiology held March 22-25 in Rovaniemi, Finland was a success. The conference, chaired by **Max Häggblom**, was organized by the Arctic Microbiology Research Consortium, together with the Finnish Forest Research Institute and the Arctic Centre, University of Lapland. FEMS was one of the main sponsors of the conference.



This conference brought together scientists working on the physiology, ecology and genetics of psychrophilic and psychrotolerant microorganisms, and their role in biogeochemical cycles and environmental and remedial processes in the Arctic and other cold extreme environments. The conference had over 130 participants from academia, industry and government, representing 15 countries, from Europe, North America and Asia. Approximately one third of the participants were students or Post-Docs.

The Rovaniemi conference was the first comprehensive international meeting held on this topic of microbes in the cold biosphere. There is already a planned continuation to be held two years from now, most likely in Innsbruck, Austria.

Tamar Barkay with Barth Smets from Uconn organized a workshop on "Horizontal gene flow in microbial communities: Evidence from the evolutionary record, relevance for shaping the metabolic prowess of extant microbial communities, and opportunities for environmental management" on June 13 - 16, 2004, in Warrenton VA. The purpose of the workshop was to explore the possibility of integrating concepts and experimental approaches from diverse fields of research with the goal of placing horizontal gene transfer between microorganisms (HGT) within the context of microbial community diversity and metabolic potentials. To achieve this goal 30 scientists and 10 graduate students and postdoctoral fellows with expertise in evolutionary biology, molecular biology, and microbial ecology/environmental microbiology, and with interest in HGT, were invited to spend 2.5 days in presentations and disciplinary and cross-disciplinary discussions.

Department / Faculty News

The goals of this gathering were the identification of information from microbial genome sequencing projects, research tools, and opportunities for affecting HGT, as they pertain to natural microbial communities in diverse environments.

Data emerging from recent studies on microbial genome sequences and from molecular analysis of microbial communities from diverse environments suggest that HGT occurs frequently, has a significant effect on microbial evolution, and influences the genetic and metabolic diversity of extant microbial communities. This process impacts societal concerns such as environmental integrity, the spread of antibiotic resistance and emergence of new pathogens, and the persistence of toxic and recalcitrant environmental contaminants, because microbial functions that govern these phenomena and processes are often encoded by genes that are subjected to HGT. The workshop, by fostering communication between scientists from seemingly unrelated scientific disciplines, formed new intellectual and conceptual frameworks for the integration of HGT into our view of microbial communities and their activities. Achieving this goal will enhance knowledge and technologies that will result in improved environmental and human health.

Bill Ward has been invited by the **Centennial Committee of the University of Washington's Friday Harbor Laboratories** to organize and coordinate a week-long symposium called, "Calcium-Regulated Photoproteins and Green-Fluorescent Proteins," scheduled for August 29-September 3, 2004. The symposium will be held on the very site where, for almost a century, scientific researchers have collected the luminous jellyfish, *Aequorea*, for studies of its bioluminescence, and for isolation of its two luminous proteins, aequorin and GFP. The symposium website is: <http://depts.washington.edu/fhl/centsymp/index.html>.

Grants

Tamar Barkay received a Rutgers Undergraduate Research fellowship for a project on Isolation and characterization of novel merA sequences from anaerobic mercury resistant microorganisms (\$1,500)

Elisabetta Bini received a University Research Council Grant on "The Effects of metals on growth of the hyperthermophilic archaeon *Sulfolobus* for C/Y 05

Lori White. NIEHS (National Institute of Environmental Health Sciences) that our grant entitled "Role of AhR/Arnt Signaling Pathway in Carcinogenesis."

New in Print

Combs, J.M., and T. Barkay. 2004. Molecular evidence for the evolution of metal homeostasis genes by lateral gene transfer in bacteria from the deep terrestrial subsurface. *Appl. Environ. Microbiol.* 70:1698-1707.

James K. McCarthy, Aleksandra Uzelac, Diane F. Davis, and **Douglas E. Eveleigh**. 2004. Improved Catalytic Efficiency and Active Site Modification of 1,4- β -D-Glucan Glucohydrolase A from *Thermotoga neapolitana* by Directed Evolution. *J. Biol. Chem.* 279: 11495 – 11502

Turpeinen R, Kairesalo T, **Hägglom MM** (2004) Microbial activity and community structure in arsenic, chromium and copper contaminated soils. *FEMS Microbiol. Ecol.* 47:39-50.

Fennell DE, Rhee S-K, Ahn Y-B, **Hägglom MM**, Kerkhof LJ (2004) Detecting the dehalogenating microorganism in a sulfidogenic, 2-bromophenol-utilizing enrichment by T-RFLP fingerprinting of ribosomes. *Appl. Environ. Microbiol.* 70:1169-1175.

Fennell DE, Nijenhuis I, Wilson SF, Zinder SH, **Hägglom MM** (2004) Dehalococcoides ethenogenes strain 195 reductively dechlorinates diverse chlorinated aromatic pollutants. *Environ. Sci. Technol.* 38:2075-2081.

Ruess L, **Hägglom MM**, Langel R, Scheu S (2004) Nitrogen isotope ratios and fatty acid composition as indicators of animal diets in belowground systems. *Oecologia* 139:336-346.

Haubert D, **Hägglom MM**, Scheu S, Ruess L (2004) Effects of fungal food quality and starvation on the fatty acid composition of *Protaphorura fimata* (Collembola). *Comp. Biochem. Physiol. Part B* 138:41-52.

Safarpour H., R. Asiaie and **Stanley Katz**. 2004. Quantitative analysis of imazamox herbicide in environmental water samples by capillary electrophoresis electrospray ionization mass spectrometry. *J. of Chromatography* 1036:217-222

Bill Ward and Catherine Thomson 2004. "A Guide to Green-Fluorescent Protein, Applications in Cell Biology and Drug Discovery" 2004, D & MD Publications, Westborough, MA.

Bill Ward and Catherine Thomson are co-authoring a book with D & MD Publications, "Fluorescent Proteins: Techniques, Applications, and Opportunities for Drug Discovery," due for release in the summer of 2004.

Murphy, K., Villano, C.V., Dorn, R. and **White, L.A.** Retinoic Acid and TCDD interact to induce expression of matrix metalloproteinase-1 (MMP-1) in normal human keratinocytes. *Journal of Biological Chemistry* (in press).

Liu F, Ahn YB, **Hägglom MM**, Fennell DE (2004) Investigation of bacterially-mediated dechlorination in polychlorinated dibenzo-p-dioxin contaminated freshwater sediments. Abstract Q-110. American Society for Microbiology 104th General Meeting, New Orleans, May 23-27, 2004.

Ahn Y, Fennell DE, Kerkhof LJ, **Hägglom MM** (2004) Anaerobic reductive dechlorination of 1,2,3,4-tetrachlorodibenzo-p-dioxin in estuarine sediments is enhanced by various halogenated electron acceptors Abstract Q-335. American Society for Microbiology 104th General Meeting, New Orleans, May 23-27, 2004.

Seminars

C. Vetriani: "Microbial processes at deep-sea vents: Nitrate respiratory metabolism and mercury reduction". Department of Microbiology, University of New Hampshire, Durham, NH, March 4, 2004.

C. Vetriani: "Deep-sea hydrothermal vent systems: Contemporary windows into ancient microbial processes". Astrobiology and Extrasolar Planets Seminar Series, Department of Geosciences, Princeton University, Princeton, NJ, February 2, 2004.

Paula-Marie Ward gave a talk "Population density yields energy independence opportunities: Critical issues in biomass conversion and cost effective technologies" at the 34th Annual Biocycle National Conference Philadelphia, PA, June 22 - Special session: Renewable Energy: Regional Energy Independence.

Our Graduate Students

Awards/ Publications Scholarships/ Seminars

The following student was awarded her doctoral degree:

Beth Ravit, Ph.D. Environmental Sciences. June 2004. "Effects of *Spartina alterniflora* and *Phragmites australis* on brackish sediment microbial communities". Estuarine marsh sediments have become the repository for a wide range of organic contaminants, whose biotransformation is largely dependent on sediment microbial communities. In carbon-limited upland systems microbial communities have been shown to be two- to three- orders of magnitude greater when associated with plant roots than in unvegetated bulk soils. However, much less is known about the affect of vegetation on microbial communities in wetland systems. Eastern U.S. coastal marsh vegetation is currently changing, due to either invasion by aggressive species such as *Phragmites australis* or through marsh restoration activities, which typically replace *Phragmites* with native grasses such as *Spartina alterniflora*. Understanding the affects of vegetation change on sediment microbial community function is a critical component in

enhancing the biotransformation of sediment contaminants. Our comparison of sediments associated with these two grasses demonstrates that microbial composition and functional abilities differ for communities associated with *Phragmites* and *Spartina* and in vegetated versus unvegetated sediments. Marsh restoration projects can be enhanced by considering the impact that vegetation change has on the ability of microbial communities to biotransform sediment contaminants. Advisors: Joan Ehrenfeld and Max Häggblom

Awards

Piyapawn Somsamak was the recipient of a ASM Student Travel Grant to attend the 2004 ASM General Meeting.

Posters

Chatziefthimiou, A., Vetriani, C., and Barkay, T. Isolation and Characterization of Mercury Resistant, Thermophilic, Thiosulfate-Oxidizing Bacteria from a Hot Spring in Mount Amiata, Italy. 104th General Meeting, American Society for Microbiology, New Orleans, LA, May 24-27, 2004.

Hogan, K.A., Sivaprasad, U., Desury, G., Cohick, W. (2004) IGF-I and TGF- α activate different upstream signaling molecules in bovine mammary epithelial cells. Federation of Animal Science Societies Meeting, St.Louis, MO, July 2004.

Narasingarao P, Häggblom M (2004) Physiological characterization of a dissimilatory selenate reducing bacterium, strain AK4OH1. Abstract Q-153. American Society for Microbiology 104th General Meeting, New Orleans, May 23-27, 2004.

Somsamak P, Richnow HH, Häggblom MM (2004) Carbon isotope fractionation during anaerobic MTBE biodegradation. Abstract Q-354. American Society for Microbiology 104th General Meeting, New Orleans, May 23-27, 2004.

Voordeckers, J., Häggblom, M., and Vetriani, C. Isolation and Characterization of Novel Thermophilic, Chemolithoautotrophic, Nitrate-reducing Isolates from Deep-Sea Hydrothermal Vents that Belong to the Genus *Caminibacter*. 104th General Meeting, American Society for Microbiology, New Orleans, LA, May 24-27, 2004.

Wong, R. and Vetriani, C. Isolation of Alkane-Oxidizing Bacteria from Deep-Sea Hydrothermal Vents and Identification of Alkane Hydroxylase Encoding Genes. 104th General Meeting, American Society for Microbiology, New Orleans, LA, May 24-27, 2004.

"Novel mercuric reductase genes found in anaerobic communities of mercury contaminated sediments" by **Sinéad Ní Chadhain, Jeffra Schaefer, Sharron Hicks, Tamar Barkay, and Gerben Zylstra.**

7th International Conference on Mercury as a Global Pollutant in Ljubljana, Slovenia, June 27 – July 2, 2004. "The role of the bacterial enzyme, organomercurial lyase, in controlling methylmercury accumulation in mercury contaminated natural waters" by **Jeffra Schaefer, Jane Yagi, Tamara Cardona-Marek, Kristie Ellickson, Shoshi Tel-Or, John Reinfelder, and Tamar Barkay.** "Mercury isotopic fractionation observed during the reduction of Hg(II) to Hg(0) by the bacterial mercuric reductase" by **Kritee, Bjorn Klaue, Tamar Barkay, and Joel Blum.**

In Print

Sivaprasad, U., Fleming, J., Verma, P.S., **Hogan, K.A.**, Desury, G., Cohick, W.S. (2004) Stimulation of IGF Binding Protein-3 Synthesis by IGF-I and TGF- α is Mediated by Both Phosphatidylinositol-3 Kinase (PI3K) and MAPK Pathways in Mammary Epithelial Cells *Endocrinology*. (Accepted).

Fleming J.M., **Hogan K.A.**, Cohick, W.S. Activation of the MAPK Pathway Suppresses the Ability of Growth Factors to Stimulate IGF Binding Protein-5 Expression in Mammary Epithelial Cells. The Endocrine Society Meeting, New Orleans, LA, June 2004.

Our Undergraduate Students

Jennifer Kist - Jennifer is the Woodruff Fellow for Fall 04/Spring 05. She is a College undergraduate who majored in Biological Sciences receiving high honors in her major and honors from Cook College. She was a George H. Cook Scholar whose project was done under the supervision of Dr. Robert Tate of Environmental Sciences Dept. She previously worked with Drs. Doug Eveleigh and Max Häggblom on the History of Microbiology at Cook College.

2004-2005 \$3,000 Philip Alampi Scholarship students

Brandy Houser, Biochemistry, Class 2005, Recommended by **R.D. Poretz**, Biochemistry and Microbiology and Randall McKinnon, UMDNJ-Robert Wood Johnson Medical School

Victoria Prince, Biochemistry, Class 2005, Recommended by **Theodore Chase, Jr.**, Biochemistry and Microbiology

Rita Theofanopoulos, Biotechnology, Class 2005, Recommended by **Heather Wiatrowski**, Biochemistry and Microbiology

**

Adenrele (Dee) Akintobi - Douglass undergraduate student in Lori White's Laboratory won the Paul Robeson Leadership Award. She was also awarded a Rutgers Undergraduate Research Fellowship for next year.

Undergraduate **Jennifer Chien** won the Science Communication Poster Award for her poster on her George H. Cook thesis research with Professor Gerben Zylstra. *Design and construction of an alkane hydroxylase gene expression system for functional analyses of monooxygenases identified in microbial genome sequences.* She additionally won the Theobald Smith Society's Undergraduate Poster Award at the annual Meeting-in-Miniature.

Maria Cruz, also working in Dr. Zylstra's laboratory, won the Graduate Poster Award at the annual TSS Meeting. *Genetic analysis of phenylalanine and tyrosine by Burkholderia cepacia DB01.*

Elyse Engelhardt, an undergraduate research student in Ted Chase's lab, won the New Jersey Academy of Sciences Award for Achievement in Research in Biochemistry for her presentation at the 49th Annual Meeting of the NJAS, April 3, 2004, at Fairleigh Dickinson University - Madison. Title of the paper: Purification of p-Nitrobenzoate Reductase of *Ralstonia pickettii*.

**

Jasmine Ashraf (class of 2005) has been named a Rutgers Undergraduate Research Fellow. Her project title is: "*Application of Fluorescent In-Situ Hybridization (FISH) for the Quantitative Detection of Nitrate-Reducing Bacteria at Deep-Sea Hydrothermal Vents*". (Advisor C. Vetriani)

Undergraduate students **John Dittmar**, **Brandon Saks**, **Rita Theofanopoulos**, and **Christine Garruto** received summer internships from the 2004 Biotechnology Research Intern Program, and are working on research projects in the laboratories of Dr. Elisabetta Bini, Max Häggblom, Tamar Barkay and Gerben Zylstra.

Undergraduate student **Kevin George** will be working on the project anaerobic biodegradation of the bactericide triclosan with \$1500 in funding from the Rutgers Undergraduate Research Fellows Program. (Max Haggblom's Lab)

David Kingary, a recent biochemistry graduate from Cook and a student who has worked in Bill Ward's lab for the past year, has been accepted into graduate school at Yale University.

Ronald Wong (class of 2004), a G. H. Cook Scholar, graduated with honors and defended a thesis entitled: "*Microbial Oxidation of n-Alkanes: Isolation and Characterization of Organisms From Deep-Sea Vents and Cold Seeps*". (Advisor C. Vetriani)

Visiting Scientists at the Department



Catherine Thomson paid us a visit from Scotland in May. Catherine continues to maintain her affiliation with the Center for Research and Education in Bioluminescence and Biotechnology (CREEB) as a co-author and private consultant. She will be in the Boston area in early August, exhibiting, with Bill Ward, two new books at the Drug Discovery Technology meetings, and in late August at the FHL Symposium.

The department welcomes back **Dr. Eunghin Kim**, now an Associate Professor at Yonsei University in Seoul, South Korea. Dr. Kim earned his Ph.D. with Dr. Zylstra in 1996 and is returning in July for a one year sabbatical leave.

Dr. Liliane Ruess, University of Darmstadt, Germany (January/February and June 2004) visiting the Häggblom Lab.



Sébastien Blard completed a 3-month internship with Dr. Max Häggblom for his M.S. degree from Ecole Polytechnique, Palaiseau, one of the most prestigious engineering schools in France. Sébastien worked on anaerobic dechlorination of dioxins in contaminated sediments under the supervision of Drs. Youn-Beom Ahn and Max Häggblom.

Spring 2004 Distinguished Lecture Series

February 4: Liliane Ruess, Institute of Zoology
Technical University of Darmstadt, Schnittspahnstr, Germany
“Fatty acids as biomarkers for trophic interactions in soil food webs”
**

February 18: Colomban de Vargas, Marine and Coastal Sciences
Cook College, Rutgers University
“Toward a natural history of microbes”
**

March 3: Robert Austin, Dept. of Physics
Princeton University
“Maxwell demons and intelligent behavior in *E. coli*”
**

March 24: Jeffra Schaefer, Biochemistry & Microbiology
Cook College, Rutgers University
“The role of Hg resistance (*mer*) genes in controlling methylmercury accumulation in NJ waters”
**

April 7: James W. Ammerman, Marine and Coastal Sciences
Cook College, Rutgers University
“The case for phosphorus limitation in the Mississippi River plume”
**

April 21: Beth Ravit, Biochemistry & Microbiology
Cook College, Rutgers University
“Macrophytes and Microbes: Salt marsh grasses affect sediment microbial community function”

What's Shaking?



Lucille Pasquale

RU luncheon honors longevity: **Lucille Pasquale** was recently recognized for 30 full-time years of service. Her employment with Rutgers (Cook College) actually goes back to September, 1965, when she started part-time in the Department of Biochemistry & Microbiology where she remains today. One of her greatest joys in working for the University is taking the "campus bus" to work each day, and stopping in town! **Emilia Rus** was also honored for 10 years of service at Rutgers University (Cook College) in the Department of Biochemistry and Microbiology.

The Department welcomes three new TA's:

Ruyang "Sunny" Han - Sunny was the Woodruff Fellow for Fall 02 and Spring 03 and last year was the Department Graduate Assistant. Sunny will TA for General Microbiology. He is in the Microbiology and Molecular Genetics Program and does his research in **Dr. Zylstra's** lab. **Karen Pesce** - She will TA **Bill Ward's** Intro to Biochem Lab, and also be involved with **Dr. Zylstra's** Seq. Analysis course and Molecular Genetics. She is in the Environmental Science graduate program and does her research in **Gerben Zylstra's** lab. **Caren Villano** - Caren was previously a Lab Tech with our Dept. and in Fall 2003 entered into the Joint Graduate Program in Toxicology where she was a TA. Her graduate advisor is **Lori White** and she will TA for **Bill Ward's** Intro to Biochem Lab.

Best wishes to **Kelly Hogan** (Cohick / Cooper's Lab) she has accepted an offer of admission and a fellowship to Penn State University where she will be finishing her Ph.D. studies at the Center for Molecular Toxicology and Carcinogenesis, Department of Veterinary Science.

Wedding bells for **Kritee** (Dr. Barkay's lab) who is getting married to Imtiaz Rangwala (Imtiaz is a Ph.D. student in Environmental Science) the last week of July in India this year.

Jane Pavlik (graduate student in Max Häggblom's lab) has taken a job at Amgen.

Bill Ward's *BRIGHTER IDEAS, INC* will be handling, in a separate wing of the company, a line of fine art, "Marine Impressions," he personally created more than 15 years ago and only recently perfected. The first set of Marine Impressions will be on display at the Evergreen Gallery in Spring Lake, N.J

Margy Wintermeyer (Ph.D.—Keith Cooper's lab) took a job with the EPA in the Reproductive Toxicology Division in Triangle Park, North Carolina.

Ronald Wong, Jasmine Ashraf (advisor: C. Vetriani), **James Voordeckers** (co-advisors: C. Vetriani and M. Häggblom) and **Aspasia Chatziefthimiou** (co-advisors: T. Barkay and C. Vetriani) participated in a recent oceanographic expedition aboard the R/V Atlantis to study the deep-sea hydrothermal vents on the East Pacific Rise. The cruise was sponsored by a NSF grant awarded to R. Lutz, G. Luther, T. Shank and C. Vetriani. All students dove in the deep-submergence vehicle Alvin and participated in the sampling operations at the bottom of the Pacific Ocean at a depth of 2,500 meters.

Margy Wintermeyer and Ted Takacs were engaged on May 23. Ted surprised Margy while backpacking on the Appalachian Trail! Wedding is set for October 23, 2004.



This year we enjoyed the fermentation products brewed by the Applied Micro classes. They were fantastic. Our expert panel of judges included **Emilia Rus, Jessie Maguire, Mike Fleming and Gavin Swiatek**. The coveted golden *Petri Dish & Inoculating Loop* were awarded to the top brew in each section. Shown are the two of the ecstatic winners. **Congratulations to the class and many thanks to our Judges!**

Douglas Eveleigh spent a sabbatical study period in the Spring in the UK (The Science Museum, London) and Holland (Technical University, Delft) unearthing records of early industrial fermentations. A particular highlight was finding the continual correspondence between Albert Jan Kluyver, founder of the theory of unity in biochemistry, and Drs. Jackson Foster, Robert Starkey and Selman Waksman. All told there are nearly 100 letters ranging from the early the early 1920s to the 1950s that have been preserved in the TU Beijerinck Museum. These letters give wonderful insight into the development of soil and industrial microbiology over the thirty year span, and merit publication. Dennis Fenton, (Ph.D. 1977) Amgen Co., was able to visit Dr. Eveleigh in Delft.



Cook College

Dept. of Biochemistry & Microbiology
Lipman Hall
76 Lipman Drive
New Brunswick NJ 08901-8525

Phone: 732.932.9763
Fax: 732.932.9530
www.cook.rutgers.edu/~dbm

Alumni Connection

By Kathy Maguire

Many told us they enjoyed reading about old friends and colleagues! If you haven't already, send us your email so we can keep you posted

Tony Parisi: (Ph.D. 1974): anparisi2@earthlink.net

I received the *Lipman Log* the other day and it brought back a lot of fond memories, especially seeing your name (Dr. Antoine) and info about your successes.

I am now retired and living in Henderson, Nevada. I left Ethicon in '76 and moved to California as Laboratory Director for a (now) Division of Baxter Healthcare. Retired from them early in '92 and went back to J&J in No. Brunswick as Director of Scientific Affairs. Again retired in '98 and moved back West. I presently do some consulting in the medical device industry and it is slowing down (my choice). I still maintain a summer residence in CT at the beach and we motor home travel East every summer. I also come back every few months to see my elderly mother (93 years old). I come to NJ routinely, and plan on being in your area around the week of the 22 of March. I would love to stop by and see you for a few minutes some morning and go back over the years. Your help and support in getting me through my degree efforts were truly instrumental in furthering my work career. Without that degree, the accomplishments wouldn't have happened. Let me know if we can get together on my next visit. *We look forward to Tony's visit.*

Chris Knutsen: (Ph.D. 1991) cknutsen@celsislabs.com

Living in Highland Park, NJ. Vice President for Chemical Sciences Division Celsis Laboratory Group in Edison. The lab does QC testing for pharmaceutical companies (HPLC, GC, wet chemistry) as well as traditional microbiology (microbial limits, preservation effectiveness, antibiotic assay). My family Martha, Jens and Nils are doing well. Please say hello to Drs. Chase, Eveleigh, Katz and Zilinskas for me!

Alumni Connection

Please pay us a visit and share your thoughts takes a few minutes to connect!

<http://www.cook.rutgers.edu/~dbm/aboutus.html>
Or email me (Kathy) maguire@aesop.rutgers.edu

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Robert Robison (Ph.D. 1954) Scholarship Fund
Dr. Anthony Romano (Ph.D. 1952)**