



Interview with Dr. Kenneth Keiler

Continuing the series of interviews with faculty in the BMB Department (previous interviews can be found at <http://bmb.psu.edu/undergraduate/student-news>).

The **BMB Undergraduate Newsletter** is pleased to feature Dr. Kenneth Keiler in this issue. Dr. Keiler's research interests are in small RNAs and protein localization in bacterial development and antimicrobial drug discovery. A detailed description of Dr. Keiler's research can be found at: <http://bmb.psu.edu/directory/kck11>

UN: What is the immediate goal of the research being conducted in your laboratory?

KK: We are trying to understand how proteins are selectively produced at the right time and in the right place to execute complex biological processes such as cell cycle progression and cellular differentiation. In particular, we are studying how protein translation and degradation are regulated by the tmRNA protein-tagging system in bacteria. We are also investigating how proteins and RNAs are localized within the bacterial cell.

UN: What are the possible larger implications/applications for the findings of your research?

KK: We are using what we have learned about these fundamental biological processes to develop reagents that control bacterial development and proliferation, both for novel antibiotics and for basic scientific research. We have identified new compounds that will kill *Mycobacterium tuberculosis*, *Bacillus anthracis*, and *Shigella flexneri*.

UN: Why did you choose to pursue a career in academic research and why in your particular field?

KK: I am a very curious and stubborn person. Academic research allows me to pursue questions I think are interesting to their logical conclusion (as long as I can convince granting agencies that it is worthwhile). I also

enjoy working with smart people. There are lots of egomaniacs in academics, but at least most of them are smart egomaniacs.

UN: What do you look for in selecting an undergraduate student to do research in your lab?

KK: I look for students who are fun to work with and meticulous. It's useful to be smart, but the experiments we do are not too complicated.

The **Undergraduate Newsletter** thanks Dr. Keiler for his interview.



Keiler Lab

DR. GU IS NEWEST BMB FACULTY MEMBER



Dr. Ying Gu arrived in the BMB department at the beginning of last spring semester. Dr. Gu received her B.S. degree in biology from Zhejiang Normal University, China, and her M.S. in plant physiology from the Institute of Plant Physiology & Ecology at the Chinese Academy of Sciences in Shanghai, China. Dr. Gu did her doctoral work at the University of California at Riverside, receiving her Ph.D. in 2003. Since then, she has done postdoctoral work in the Department of Plant Biology at UC-Riverside, and as part of the Carnegie Institution of Washington at Stanford University. Before coming to Penn State, Dr. Gu was an associate specialist at the Energy Biosciences Institute at UC-Berkeley. Dr. Gu's research uses biochemical and molecular genetic approaches to study the synthesis of cellulose, the most abundant biopolymer on earth. Dr. Gu's office is located in 262 N. Frear.

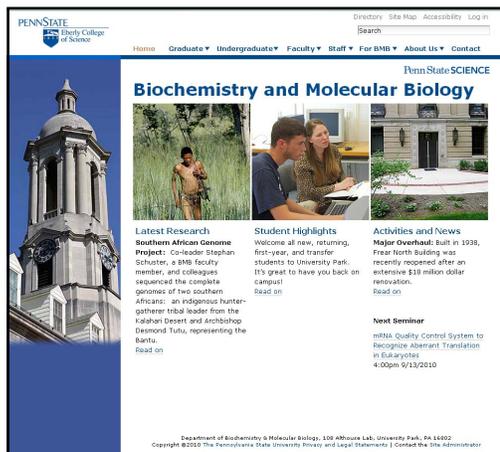
NEW INSTRUCTOR JOINS BMB



The BMB department is pleased to welcome Dr. Meredith DeFelice as a new instructor. Dr. DeFelice did her undergraduate work at Occidental College, receiving her B.A. with Honors from the Department of Biochemistry. She then studied in the Department of Cell Biology at Duke University where she received her Ph.D. in 2002. Dr. DeFelice then served as a postdoctoral fellow in the Department of Cell and Developmental Biology at UNC-Chapel Hill after which she became a research assistant professor, also at UNC. Since arriving at Penn State at the beginning of 2010, Dr. DeFelice has taught several lab and lecture courses. All students in the BMB department who are required to take BMB/Micrb 442 will have the opportunity to meet Dr. DeFelice. Dr. DeFelice's office is in 153 North Frear.

Welcome to Penn State, Dr. DeFelice.

BMB Launches New Web Site



If you are reading this edition of the Newsletter online, then you have noted the new BMB department website. Besides reorganizing content, the new site features directional navigation that is clearer and more intuitive than the previous site. The new site is visually more appealing, containing many more photos than the old site. It is intended to be a dynamic site that will offer the latest information on any topic that has to do with BMB faculty, programs or related topics. The new site provides sufficient information to answer nearly all questions both undergraduate and graduate students (and, maybe, even faculty!) might have about programs, processes, policies and personnel in the BMB Department. When you finish reading the Newsletter, be sure to check out the many links of the site so you have an idea of what information is available and where you might find it.

Attention Junior CLS Students!

The annual meeting of junior CLS students who are eligible for recommendation to affiliated hospital schools of clinical laboratory science will be held on September 21st, at 7 p.m. in 101 S. Frear Laboratory. To be eligible for recommendation, students must have completed ALL requirements of the CLS Option of the Biotc major, with the exception of the clinical courses (Micrb 405A-F), by the end of the SP11 semester. Information about the program, scheduling, grading, career opportunities and the recommendation process will be provided at that time. If you cannot make this meeting, please contact Dr. Mohr in 124 S. Frear as soon as possible.

A Spring Course for Schreyer Scholars to Consider...

Drs. Tan and Yennawar will be teaching a graduate-level course (BMMB 598E) in SP11 that is appropriate for University Scholars with an interest in the subject to take. Graduate-level courses do count as honors study, though the 'H' suffix is not affixed. The course description follows:

This course covers the structures of macromolecules such as proteins, nucleic acids and protein/nucleic acid complexes as well as a method to determine such structures at high resolution. Half of the course focuses on X-ray crystallography with practical demonstrations and a laboratory visit. Topics include crystallization of proteins, crystal symmetry, X-ray diffraction and approaches to solve X-ray structures. In the other half, students analyze the 3-D structure of macromolecules through studies of proteins involved in signal transduction, immune response and gene regulation. QuickTime movies and molecular graphics software will be used extensively to enhance the learning experience. Introductory Physics and BMB 401 are recommended prerequisites.

This publication is available in alternative media on request.

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