Introducing our AUTHORS

Rebecca L. Nicholson

Current position: University of Cambridge, University Chemistry Laboratory; postdoctoral research associate with Dr. David R. Spring
Education: University of Oxford, M. Chem., 1999; University of Oxford, D. Phil. in chemistry with Prof. Steve G. Davies, 2003
Nonscientific interests: Martial arts, cycling, entomology

The identification of small-molecule–protein binding partners is a challenge in both drug development and the discovery of small-molecule probes for chemical genetics studies. Traditionally this process has been a time- and resource-intensive approach composed of compound synthesis followed by biological screening. My research focuses on the development of a miniaturized, high-throughput, and low-cost method for the combined *in situ* synthesis and screening of thousands of small molecules against proteins of interest on a cross-linked hydrogel microarray platform. This technology has enabled the discovery of novel antagonists of the quorum sensing proteins in the bacteria *Pseudomonas aeruginosa*, which is the primary cause of respiratory deterioration and mortality in cystic fibrosis patients. These small-molecule inhibitors may provide the basis for novel antibiotic therapies for the treatment of resistant *P. aeruginosa* infections. (Read Nicholson's article on p 24.)

Peter V. Cornish

Current position: University of Illinois, Urbana–Champaign and Howard Hughes Medical Institute, Department of Physics, postdoctoral research associate with Prof. Taekjip Ha
Education: Graceland University, B.S. in pre-professional biology, chemistry, and mathematics, 2000; Syracuse University, B.S. in chemical engineering, 2004; Texas A&M University, Ph.D. in biochemistry with Prof. David P. Giedroc, 2005
Nonscientific interests: Sports, including following Houston Astros baseball; music; and family

I have a great interest in applying biochemistry and biophysics to address biological problems. In graduate school, I employed solution NMR to determine RNA structures derived from viral RNAs. I have since transitioned to single-molecule studies in my postdoctoral research. I am primarily using total internal reflection fluorescence microscopy to study ribosome function and movements. Other techniques used in the lab, including using optical tweezers and combining fluorescence and optical tweezers to apply force, will aid in studying ribosome-related problems. The many advances in single-molecule techniques in the past few years have opened up new avenues of research. Undoubtedly, the discovery of new techniques and the facilitation of current techniques will open single-molecule studies to a wider audience. This is an exciting field that is advancing quickly and providing information on systems that was previously unattainable by any other methods. (Read Cornish's article on p 53.)

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