# Introducing our AUTHORS

Image courtesy of Jia Liu.

## Kelly Daggett

**Current position:** University of Maryland, Department of Chemistry and Biochemistry, Ph.D. candidate with Prof. T. Ashton Cropp, expected graduation fall 2009
**Education:** Manhattan College, B.S. in biochemistry, 2004
**Nonscientific interests:** Photography, traveling, biking, cooking

I am interested in protein engineering and developing methodology to understand various protein interactions, as well as evolving proteins for enhanced or new activity. I have been particularly interested in evolving therapeutic proteins and the use of enzymes as catalysts for organic reactions. In my Ph.D. work, I have developed a method by which a library of proteins containing single unnatural amino acid mutations can be created. In this example, I have shown that *p*-benzoylphenylalanine, a photo-cross-linker, can be "scanned" across a protein surface. This method can further be adapted to randomly scan any of the natural amino acids and might be a valuable tool to efficiently evolve proteins. (Read Daggett's article, DOI 10.1021/cb800271f.)

Image courtesy of Dr. Katrin Rose.

## Antje Keppler

**Current position:** Heidelberg University, Department of Virology, Project Coordinator with Prof. Hans-Georg Kräusslich
**Education:** Bochum Ruhr-University, M.S. in biochemistry, 1999; EPFL Lausanne, Ph.D. in biochemistry with Prof. Kai Johnsson, 2004
**Postdoctoral work:** EMBL Heidelberg, Postdoctoral Researcher with Jan Ellenberg, 2004–2007
**Nonscientific interests:** Playing guitar and piano, cycling, snowboarding

During my Ph.D. thesis work in the group of Prof. Kai Johnsson, we established the so-called SNAP-tag labeling approach, which enabled us to link small molecules specifically and covalently to proteins of interest inside and outside living cells. Since then, this technique has found numerous applications in many laboratories for a wide variety of biological questions. Inspired by its use for live cell imaging, I became highly interested in cell biology and worked as a postdoc under the guidance of Dr. Jan Ellenberg at the EMBL. Here, I developed a new technique for chromophore-assisted laser inactivation (CALI) of proteins inside cells based on the SNAP-tag labeling. (Read Keppler's article, DOI 10.1021/cb800298u.)

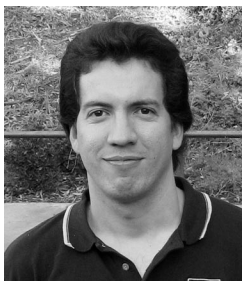

Image courtesy of Alban Pereira.

## Alban Pereira

**Current position:** University of California San Diego, Scripps Institution of Oceanography, Postdoctoral Scholar with Prof. William H. Gerwick
**Education:** University of Costa Rica, B.S. in chemistry, 2000; M.Sc. (Honors) in organic synthesis with Prof. Jorge A. Cabezas, 2002; University of British Columbia, Ph.D. in isolation and synthesis of marine natural products with Prof. Raymond J. Andersen, 2008
**Nonscientific interests:** Traveling, music, electric guitar, Japanese history and culture

I am interested in the early stages of drug development, where the use of NMR and MS techniques for structure elucidation, as well as organic synthesis to establish structure–activity relationships, are required. With the research described here, I was able to expand my horizons and start exploring protein–ligand recognition events by means of STDD-NMR spectroscopy. This technique provided the first direct evidence of binding between a water-soluble marine metabolite and a cannabinoid receptor in a whole-cell environment. In the future, I hope to continue employing NMR techniques to characterize binding interactions of small molecules and their targets and to combine the insights obtained with medicinal chemistry in order to produce more potent and selective therapeutic agents. (Read Pereira's article, DOI 10.1021/cb800264k.)

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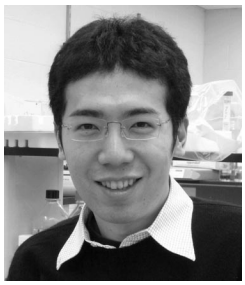

Image courtesy of Aishwarya Devaraj.

## Shinichiro Shoji

**Current position:** The Ohio State University, Department of Microbiology, Ph.D. candidate with Prof. Kurt Fredrick
**Education:** Kyoto University, Kyoto, Japan, B.A. in agriculture with Prof. Hideya Fukuzawa, 2004
**Nonscientific interests:** Playing guitar, playing tennis, cycling, hiking

Proteins are synthesized by ribosomes in all cells. My graduate research has been focused on how ribosomes control tRNA—mRNA translocation, a step involving movement of tRNA and mRNA to their adjacent sites, some 40 Å away at the longest distance. This large-scale movement occurs in a stepwise manner and is catalyzed by elongation factor G (EF-G) with a series of conformational changes in both the ribosome and EF-G. Tremendous amounts of biochemical and structural studies have been dedicated to elucidating the mechanism of translocation, and now we are stepping closer to unveiling the mechanistic view of this beautiful molecular machine. In this Review, we try to summarize both previous and concurrent studies after 40 years of research and show how far we have come and what questions remain in our future path. (Read Shoji's article, DOI 10.1021/cb8002946.)