Introducing our AUTHORS

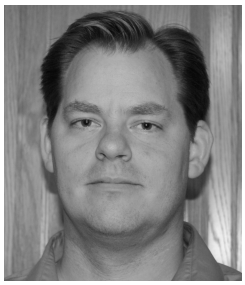

Image courtesy of Katrina Lehmann Blount.

Kenneth Blount

Current Position: Director of Biology, BioRelix, Inc.
Education: University of Arkansas, B.S. in chemistry, 1994; University of Colorado, Boulder, Ph.D. in biochemistry, 2001, with Prof. Olke Uhlenbeck; University of California, San Diego, NIH Postdoctoral Fellow, 2002–2005, with Prof. Yitzhak Tor; Yale University, Associate Research Scientist, 2005–2007, with Prof. Ronald Breaker
Nonscientific Interests: Parenting, organic gardening

Novel antibacterial drugs are urgently needed to combat the increasing prevalence of multidrug resistant bacterial infections. One promising type of new antibacterial targets are riboswitches—structured RNA receptors found in untranslated regions of bacterial mRNAs where they regulate gene expression. Members of each class of riboswitch selectively bind to a specific metabolite, thereby triggering a structural change in the mRNA that typically represses the expression of the protein(s) encoded in the adjoining coding region(s). Since riboswitches often regulate the expression of proteins that synthesize or import critical metabolites, a promising antibacterial chemotherapy approach may be to design compounds that mimic a natural riboswitch ligand, repress the adjoining critical genes, and thereby inhibit bacterial growth. The work described herein examines the utility of structure-guided design for the discovery of novel guanine riboswitch-targeting antibacterial molecules. (Read Blount's article, DOI: 10.1021/cb900146k)

Image courtesy of Francisco Mateo.

Nunilo Cremades

Current Position: University of Cambridge, Department of Chemistry, U.K., Human Frontier Science Program Postdoctoral Fellow with Prof. Christopher M. Dobson
Education: University of Zaragoza, Spain, B.S. in chemistry, 2000, and M.S. in Biochemistry, 2002; Ph.D. in biochemistry and molecular and cellular biology with Prof. Javier Sancho, 2007
Nonscientific Interests: Sports, especially athletics (in which I used to compete), music, traveling, socializing with friends

This work is an example of an exciting and successful multidisciplinary collaboration which started from a thorough biophysical characterization of a protein target and has resulted in the discovery of new therapeutic compounds to combat disease. It illustrates my interest and that of Prof. Sancho's group in bridging the gap between extensive basic research and the effective practical exercise of Biomedicine. Specifically, I have utilized a broad range of biophysical techniques to detail the complex conformational landscape of a recently discovered essential protein from a human pathogen. With this knowledge, we have developed a general, target-based, high-throughput screening methodology to identify potent and specific inhibitors of this protein, which are active against the pathogen but are nontoxic to mice. These compounds represent a group of promising new candidates for the development of specific antibiotics against the different diseases associated with the *H. pylori* infection. (Read Cremades' article, DOI: 10.1021/cb900166q)

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Image courtesy of AJ Sedlak.

Lori Emert-Sedlak

Current Position: University of Pittsburgh School of Medicine, Postdoctoral Fellow in Microbiology and Molecular Genetics with Thomas E. Smithgall, Ph.D.
Education: Pennsylvania State University, B.S. in biochemistry and molecular biology 1999; University of Pittsburgh School of Medicine, Ph.D. in pharmacology 2005 with Daniel E. Johnson, Ph.D.
Nonscientific Interests: Spending time with my husband and two children, music, reading

My scientific interests focus on developing a high-throughput assay that is predictive of compounds that inhibit the function of Nef, an HIV-1 protein essential for AIDS progression. Our collaboration with the University of Pittsburgh Drug Discovery Institute enabled me to conduct studies on a high-throughput scale, providing a wonderful opportunity for a postdoctoral pharmacologist in an academic setting. My interactions with synthetic organic chemists allowed rapid development of analogues of the lead compound that maximize antiretroviral activity. As demonstrated in the paper, our team has produced novel analogues that exhibit remarkable activity against Nef-dependent HIV-1 replication. I am excited by the prospect of investigating the effects of these compounds in a range of HIV-target cells and optimizing them for use in animal models of HIV/AIDS. (Read Emert-Sedlak's article, DOI: 10.1021/cb900195c)

Image courtesy of Jordan Meier.

Jordan Meier

Current Position: California Institute for Technology, Department of Chemistry and Chemical Engineering, American Cancer Society postdoctoral fellow with Peter Dervan
Education: Creighton University, B.S. in chemistry 2004; University of California–San Diego, Ph.D. in chemistry with Michael Burkart, 2009
Nonscientific Interests: Basketball, hip-hop, amateur political activism, pubbery

My research to date has revolved around the development and application of chemical tools to investigate complex biological systems. In my graduate work at UC San Diego I applied this approach to develop methods for the proteomic investigation of natural product biosynthetic enzymes, by utilizing enzyme probes based on simple, well-known mechanism-based inhibitors of fatty acid biosynthesis. This provides a potentially exciting new avenue for the discovery of biologically active natural products and has introduced me to expert collaborators in fields ranging from natural products synthesis to computational bioinformatics—a true chemical biology education! (Read Meier's article, DOI: 10.1021/cb9002128)

Image courtesy of Sherry Niessen.

Sherry Niessen

Current Position: The Scripps Research Institute, Center for Physiological Proteomics, Staff Scientist
Education: Simon Fraser University, B.S. in biochemisty, 2000; McGill University, M.Sc. in experimental medicine with Guy Sauvageau, 2003; The Scripps Research Institute, Ph.D. in the Department of Chemical Physiology with Benjamin Cravatt, 2008
Nonscientific Interests: Traveling

Currently, I am with the Center for Physiological Proteomics (CPP) at The Scripps Research Institute (TSRI). Under the direction of Dr. Yates and Dr. Cravatt, CPP is dedicated to engaging in proteomics collaborations with biological researchers both within and outside of TSRI. In this paper, CPP collaborates with Dr. Jordon Meier from the Burkart Laboratory to develop a functional proteomics platform for the identification PKS/NRPS biosynthetic enzymes. This platform termed OASIS combines activity based protein profiling with multidimensional protein identification technology to investigate the biosynthetic enzyme found in the bacterium *Bacillus subtilis.* (Read Niessen's article, DOI: 10.1021/cb9002128)

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Image courtesy of Zoya Okun.

Zoya Okun

Current position: Technion-Israel Institute of Technology, Schulich Faculty of Chemistry, Ph.D. student with Prof. Zeev Gross

Education: Hebrew University of Jerusalem, B.Sc. in chemistry, 2004; Technion-Israel Institute of Technology, Department of Chemistry, M.Sc. in inorganic chemistry, 2007

Nonscientific interests: Traveling, drawing

My research focuses on metal complexes of water-soluble corroles and porphyrins, decomposition of reactive oxygen and nitrogen species thereby, and exploration of their cytoprotective properties. In my M.Sc. thesis I developed the synthesis of positively charged manganese(III) corroles and demonstrated their intercalation into DNA, as well as their highly potent catalytic antioxidant activity in purely chemical systems. My Ph.D. research reflects my desire of advancing these inventions toward eventual utilization of corroles as drugs for various diseases. An early step toward fulfilment of this ambitious goal is their utilization in a cellular model of processes leading to diabetes, where particular corroles catalyze the decomposition of peroxynitrite in an efficient and mechanistically unique fashion that rescues insulin-producing cells from intracellular nitration and subsequent cell death. (Read Okun's article, DOI: 10.1021/cb900159n)

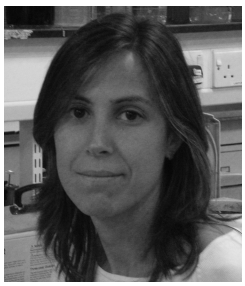

Image courtesy of Francisco Mateo.

Inmaculada Perez Dorado

Current Position: Laboratory of Molecular Biology-Medical Research Council, Division of Structural Studies, Postdoctoral Fellow with Dr. Philip R. Evans

Education: Complutense University of Madrid, M.S. in biochemistry, 2001; Instituto de Química-Física Rocasolano, Spanish Research Council, Ph.D. in biochemistry with Prof. Juan A. Hermoso, 2008

Nonscientific interests: spending time with my family and friends, reading, painting and drawing, and science fiction movies

My research has been focused on the structural characterization of biological macromolecules, using for this purpose X-ray crystallography. During my Ph.D. studies in Dr. Hermoso's group, I centered my attention on two kinds of redox proteins from different organisms (flavodoxins and ferredoxin-NADP(H) reductases), as well as on pneumococcal proteins involved in host–pathogen interactions. Redox proteins, both flavodoxins and reductases, act as key shuttles in many different biological pathways important for living organisms such as photosynthesis. My interest in these molecules led me to undertake their structural analysis in order to understand the mechanisms of electron exchange and electron stabilization, and their interaction with their redox partners. As part of this work, we acquired the 3D structure of the *H. pylori* flavodoxin in complex with its inhibitor CIII, which provides an advance in the development of a novel therapy against *H. pylori* infections. (Read Perez-Dorado's article, DOI: 10.1021/cb900166q)