Introducing our AUTHORS

acs chemical biology

Rocco Moretti

Image courtesy of Laura Vanderploeg.

Current position: University of Wisconsin–Madison, Department of Biochemistry, Graduate Student with Prof. Aseem Ansari
Education: Worcester Polytechnic Institute, B.S. in biochemistry, 2002
Nonscientific interests: Reading, computer programming, cooking, gardening

I've been amazed by the ability of chemistry and biochemistry to create novel molecules with desired functions, on both the small-molecule and biomacromolecule scales. The ability to engineer these new activities promises to address some of the major issues addressing society, from biomedical to industrial applications. In this work, we examined the oft-overlooked roles of allostery and cooperativity, features that are critical in the regulation of molecular entities. It's an exciting time to be involved in synthetic and chemical biology, as we are now getting a handle on the fundamental principles that allow us to build exciting new chemical tools. (Read Moretti's article on p 220 and Point of View on p 207.)

Leslie J. Donato

Image courtesy of Robin Davies.

Current position: University of Wisconsin–Madison, Department of Biochemistry, Postdoctoral Researcher with Prof. Aseem Ansari
Education: University of Rochester, B.S. in biochemistry, 1999; Cornell University, PhD. in biochemistry molecular and cell biology with Dr. Noa Noy, 2006
Nonscientific interests: Travel, movies, home remodeling, gardening

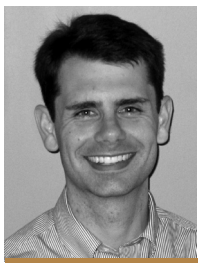
My main research interest, starting as an undergraduate and continuing through my postdoctoral work, has focused on the role of DNA-bound transcription factors in gene expression. My specific interests are to translate the basic molecular mechanisms discovered in the lab to therapeutic uses. Because there are so many instances in which aberrant function of transcription factors leads to disease, this area is ripe for therapeutic discoveries. In the current work, we have utilized a small molecule to mimic the allosteric contribution of cooperatively binding transcription factors to DNA. Not only does this shed light on the workings of the particular Hox proteins we studied in the paper, but it will also guide our strategies for designing artificial transcription factors in the future. (Read Donato's article on p 220 and Point of View on p 207.)

Udayanath Aich

Image courtesy of Udayanath Aich.

Current position: Department of Biomedical Engineering, Johns Hopkins University, Postdoctoral Scholar with Prof. Kevin J. Yarema
Education: Utkal University, Orissa, India, B.S in chemistry, 1998; Ravenshaw College, Orissa, India, M.S. in organic chemistry, 2000; IIT Madras, Chennai, India, Ph.D. in bio-organic chemistry, under the supervision of Prof. D. Loganathan, 2007
Nonscientific interests: Photography, reading books, watching cricket, music, travel

I have been curious about science from childhood, and my immense curiosity in chemistry and biology motivated my graduate study in synthetic carbohydrate chemistry. Having entered the broad area of glycobiology, I was interested in applying my synthetic knowledge to the development of carbohydrates containing molecules for cancer drugs based on metabolic glycoengineering. In this article, we report structure–activity relationships that unravel conflicting biological activities found in SCFA hexosamines analogs. Overall the SCFA–ManNAc hybrid molecules as a versatile platform for selectively controlling distinctive biological activities through the regioselective placement of the SCFA moiety on the sugar scaffold. (Read Aich's article on p 230 and Point of View on p 203.)



Christopher T. Campbell

Image courtesy of Christopher T. Campbell.

Current position: The Johns Hopkins University School of Medicine, Medical Scientist Training Program, M.D./Ph.D. candidate with Prof. Kevin J. Yarema
Education: The Johns Hopkins University, B.S. in biomedical engineering, 2000
Nonscientific interests: Biking, hiking, home improvement

Abnormal glycoproteins and glycolipids expressed by diseased cells provide elusive targets for new diagnostic and therapeutic strategies. I am interested in developing practical techniques for manipulating glycosylation, which would open new avenues into diagnosing and treating disease. In particular, metabolic oligosaccharide engineering (MOE) uses analogs of sugars to install new chemical groups into the oligosaccharides on cells. For my Ph.D. project, I investigated the biologic activity of the non-natural sugars, which provide the toolbox for MOE. A better understanding of the biologic effects of these non-natural sugars is now providing insight into challenges facing the practical application of this technology. (Read Campbell's article on p 230 and Point of View on p 203.)

Yusuke Sako

Image courtesy of Jumpei Morimoto.

Current position: University of Tokyo, Department of Chemistry and Biotechnology, Ph.D. candidate with Prof. Hiroaki Suga (completed in March, 2008)
Education: University of Tokyo, B.S. in chemistry, 2003; University of Tokyo, M.S. in chemistry with Prof. Yoshio Umezawa, 2005
Nonscientific interests: Playing the guitar, flute, and shinobue (a Japanese traditional instrument)

My master's graduate work focused on the development of genetically encoded fluorescent probes that can discriminate the sub-mitochondrial localization of proteins. During my Ph.D. studies, I became interested in the ribosome as excellent machinery for the peptide synthesis. Our article in this issue describes the new methodology for the ribosomal synthesis of cyclic peptides by using a non-proteinogenic amino acid bearing a chloroacetyl group in its side chain. My current interest involves the molecular mechanism that regulates pluripotency in plant cells. After completing my Ph.D., I will start my postdoctoral studies using a moss as a model plant under the guidance of Prof. Mitsuyasu Hasebe. (Read Sako's article on p 241.)

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