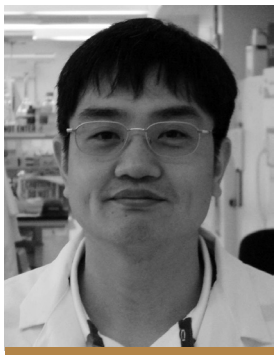
Introducing our AUTHORS



Seok Joon Kwon

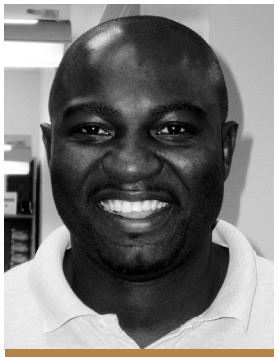
Current position: Rensselaer Polytechnic Institute, Postdoctoral Researcher with Prof. Jonathan S. Dordick
Education: Korea Advanced Institute of Science and Technology, Department of Biological Sciences, Ph.D. in biocatalysis and biotransformations with Prof. Joon Shick Rhee, 1998
Nonscientific interests: Enjoying nature, traveling, watching movies

My research interests are in the interdisciplinary area between chemistry and biology. A main focus is drug discovery from natural products. This is because of the enormous small-molecule library derived from the combinatorial pathways of the metabolic enzyme repertoire. Access to small molecules has been a challenge in the fields of medicinal chemistry, pharmaceutics, and chemical biology because of the difficulty in their purification and limitations to making chemical modifications to optimize their therapeutic use. We have studied how to easily manipulate natural and unnatural pathways and screen these natural product analogues. Our results showed that combinatorial metabolic enzyme reactions in microarray spots enable the rapid construction of natural product analogues as potent pharmaceutical lead compounds. *In vitro* metabolic pathway engineering coupled with high-throughput technology could be a useful tool for the easy access of small molecules from natural and unnatural biosynthetic pathways. (Read Kwon's article on p 419.)

Amanda J. Krzysiak

Current position: Purdue University, Department of Medicinal Chemistry and Molecular Pharmacology, Ph.D. candidate with Richard A. Gibbs
Education: University of Miami, B.S. in chemistry, 2001; University of North Carolina, Wilmington, M.S. in marine science with Dr. Jeffrey Wright, 2006
Nonscientific interests: Anything outdoors, reading, cooking, diving, traveling, spending time with friends

My research interests involve the potential chemotherapeutic drug target protein farnesyltransferase (FTase), which modifies many important signaling proteins with a farnesyl lipid moiety. FTase has an interesting history as a drug target because potent inhibitors were quickly identified as clinical candidates in high-throughput screens, but they failed against the tumors for which the drugs were designed. Surprisingly, they were successful against other cancers. We have probed the substrate selectivity of FTase to develop chemical tools that can change the spectrum of proteins that FTase will modify with a lipid. We are now using these chemical tools to probe the role of protein farnesylation in the cell. (Read Krzysiak's article on p 385.)



Ernest K. Boamah

Current position: City University of New York, Graduate Center and Hunter College, Department of Biological Sciences, Ph.D. candidate with Prof. Jill Bargonetti
Education: City University of New York, College of Staten Island, B.S. in biology, 2001; M.S. in biology with Prof. Elena McCoy, 2003
Nonscientific interests: Reading, bowling

My graduate research is focused on understanding the biological activity initiated by the novel mitomycin C (MC) derivative, 10-decarbamoyl mitomycin C (DMC). Our paper examines the cell death signals initiated by DMC and compares it with MC-induced signals in the presence or absence of wild-type p53. The structural difference between MC and DMC at the C-10 position results in DMC being able to bind DNA and exclusively form two novel β-adducts. It is interesting that both MC and DMC induced similar levels of DNA double-strand breaks at early time points, whereas increased cell death is observed with DMC, especially in the absence of wild-type p53. The discovery of drugs with increased cell death activity in the absence of p53 will prove useful in the fight against cancer mainly because of the frequent p53 mutations in tumor cells. Our future goal is to delineate the molecular targets activated by DMC in cells with or without wild-type p53 to generate the exact mechanism of DMC-induced cell death. (Read Boamah's article on p 399.)

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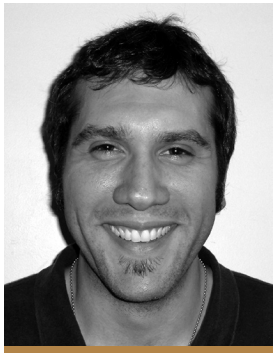


David E. White

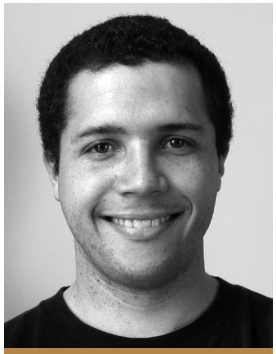
Current position: Wistar Institute, Postdoctoral Fellow with Dr. Frank J. Rauscher, III
Education: Rochester Institute of Technology, B.S. in biotechnology, 1995; City University of New York (CUNY) Graduate Center, Ph.D. in molecular biology with Dr. Jill Bargonetti, 2005
Nonscientific interests: Music, mountain climbing, snowboarding

My doctoral work focused on the activation of p53 in response to genotoxic stress. Working with Dr. Bargonetti at CUNY–Hunter College for almost a decade, first as her technician and then as her pupil, I carried out numerous projects involving the dissection of this critical damage response pathway. The work presented here, however, was interesting because it was the only project that I was a part of that examined a p53-independent mechanism. We found that the alkylating agent 10-decarbamoyl mitomycin C, a unique derivative of mitomycin C, could initiate death in cells independent of their p53 status. Given that most cancers harbor mutations in p53, understanding how drugs can elicit cell death in the absence of functional p53 is paramount for the development of new, more efficient agents for combating cancer. (Read White's article on p 399.)

Haruhiko Fuwa

Current position: Tohoku University (Japan), Graduate School of Life Sciences, Laboratory of Biostructural Chemistry, Assistant Professor
Education: University of Tokyo, School of Science, B.S. in chemistry, 1997; University of Tokyo, Graduate School of Science, M.S. in chemistry, 1999; University of Tokyo, Graduate School of Science, Ph.D. in chemistry with Prof. Kazuo Tachibana, 2002
Nonscientific interests: Traveling, walking

I am interested in the development of strategies for the synthesis of bioactive substances and their functional analogues. In this study, a divergent synthesis of photoprobes based on caprolactam-type γ-secretase inhibitors (GSIs) is accomplished by a "click" reaction. Because the labeling ability of a designed photoprobe can only be evaluated experimentally, the synthesis and evaluation of photoprobes in a combinatorial fashion would be an efficient strategy to gather additional information. Here, 2 out of 10 photoprobes that we prepared displayed significant labeling abilities, and this revealed the molecular targets of the GSIs. I believe that our strategy would be generally applicable to the design and synthesis of molecular probes. (Read Fuwa's article on p 408.)



Aaron N. Snead

Current position: University of California, San Francisco, Chemistry and Chemical Biology Graduate Program, Ph.D. candidate with Prof. Thomas S. Scanlan
Education: Harvard University, B.A. in chemistry, 2002
Nonscientific interests: Backpacking, fishing

In my research, I use a variety of chemical and biological tools to understand the molecular interactions of specific thyroid hormone derivatives, thyronamines. The goals of this research are to develop a molecular understanding of the observed thyronamine pharmacology and identify potential physiological mechanisms of thyronamine action. Specifically, work is ongoing to identify neuromodulatory effects of thyronamines through their interactions with monoamine transporters and screen representative members of the trace-amine-associated receptor family of G-protein-coupled receptors for activity with thyronamines and related derivatives. (Read Snead's article on p 390 and Point of View on p 377.)