acs chemical biology

Introducing our AUTHORS

Pancham Bakshi

Image courtesy of Harnam Bakshi.

Current position: Roskamp Institute, Laboratory of Chemical Biology and Drug Discovery in Neurology, Scientist II, 2004–present
Education: University of Delhi, New Delhi, B.S. in chemistry, 1992; University of Delhi, New Delhi, M.S. in organic chemistry, 1994; Center for Biochemical Technology, New Delhi, Ph.D. in bioorganic chemistry, 2001
Postdoctoral work: Harvard Medical School, Center for Neurology, Postdoctoral Researcher with Dr. Michael Wolfe, 2001–2004; Harvard Medical School, Laboratory of Drug Discovery in Neurology, sabbatical Postdoctoral Fellow with Dr. Michael Wolfe and Dr. Ross Stein, 2002–2003
Nonscientific interests: Playing with my son, hiking, running, singing, playing violin, learning figure skating

As a neuroscientist with a bioorganic and medicinal chemistry background, I am inspired to understand the biological mechanisms of Alzheimer's disease (AD) and related neurological diseases and to explore new approaches for therapeutic intervention. The main focus of my lab is to understand different pathways and associated targets that are involved in regulating production of amyloid-β. Amyloid-β is a protein fragment known to be toxic to neuronal cells and is also suspected of disrupting cell-to-cell communication and thus plays a central role in the pathogenesis of AD. In this paper, I explored the role of CXCR2, a known inflammatory mediator in production of amyloid-β. This interest arises from reported work demonstrating increased expression of inflammatory mediators in postmortem brains of people with AD and the epidemiological studies that link the use of anti-inflammatory drugs with reduced risk for AD. The findings in this study unravel new mechanisms involving the CXCR2 receptor in the pathogenesis of AD and pose it as a potential target for developing novel therapeutics for intervention in this disease. Also, I propose here a new chemical series of interest that can serve as a prototype for drug development. (Read Bakshi's article on p 777.)

Cristina Pinedo Rivilla

Image courtesy of José Manuel Pinedo Contreras.

Current position: University of Cádiz, Spain, Department of Organic Chemistry, Ph.D. candidate with Profs. Isidro González Collado and Josefina Aleu Casatejada
Education: University of Sevilla, Spain, B.S. in biochemistry, 2004; University of Sevilla, M.S. in microbial biotechnology, 2008
Nonscientific interests: Traveling, cinema, spending time with friends and my family

The recent scientific progress in the identification of pathogenicity factors of the harmful phytopathogen fungi opens significant options for major innovations in plant disease control. My research is focused on the putative role of the phytotoxins excreted by *Botrytis cinerea* in the infection mechanism. So, a new and rational alternative to synthetic fungicides is emerging that uses analogs of naturally expressed toxins of the fungus. This is a realistic and efficient strategy to control phytopathogens fungi and their pathogenicity. I am also interested in the application of filamentous fungi as a biocatalyst in the preparation of enantiomerically pure chemicals with antifungal properties, using chemical or biochemical approaches. (Read Pinedo's article on p 791.)

Ali Tavassoli

Image courtesy of J. Corsi.

Current position: University of Southampton, School of Chemistry, U.K., Lecturer (Assistant Professor) in Chemical Biology
Education: University of Bristol, U.K., B.Sc. in chemistry, 1995; University of Reading, U.K., Ph.D. in chemistry with Prof. Joe Sweeney, 1999
Postdoctoral work: University of Sussex, U.K., Postdoctoral Researcher with Prof. Douglas Young, 1999–2001; Pennsylvania State University, Postdoctoral Fellow with Prof. Stephen Benkovic, 2001–2006
Nonscientific interests: Rock climbing, snowboarding, mountain biking, tennis

My research group is interested in controlling and modulating cellular and physiological processes with small molecules that inhibit specific protein–protein interactions. Our current efforts are focused toward studying and disrupting key protein interactions that mediate tumor response to hypoxia and subsequent neovascularization. Our article in this issue describes the genetic selection of a cyclic peptide inhibitor of HIV budding, which acts by disrupting a key protein–protein interaction; the compound was uncovered using a high-throughput screen, developed while I was a postdoctoral fellow in Prof. Benkovic's lab. The molecule and its unique mode of action represent the exciting possibility for a new approach to HIV therapy. (Read Tavassoli's article on p 757 and Point of View on p 745.)

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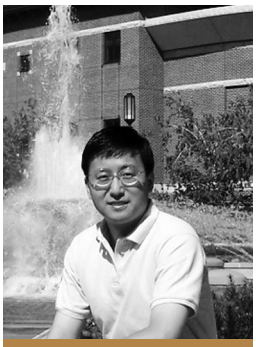
Chieh-Mei Wang

Image courtesy of Weibin Li.

Current position: Brown University, Department of Chemistry, Ph.D. student with Prof. David E. Cane
Education: National Chiao Tung University, Taiwan, B.S. in biological science and technology, 2005; Brown University, M.A. in chemistry, 2006
Nonscientific interests: Shopping, traveling, cooking

Our work demonstrated in this paper has been carried out in collaboration with Dr. Muriel Viaud of INRA in France and Prof. Isidro Collado of the University of Cádiz in Spain. I am interested in the mechanistic enzymology of terpenoid biosynthesis. With the botrydial biosynthetic gene cluster in *Botrytis cinerea* identified, my focus in this paper was to establish the biochemical function of the BcBOT2 protein and its mechanism of formation of presilphiperfolan-8β-ol, the parent sesquiterpene alcohol of the botrydial biosynthetic pathway. This is the first reported presilphiperfolan-8β-ol synthase, and it is suggested to be responsible for the biosynthesis of a wide range of triquinane and derived sesquiterpene metabolites in plant and fungal species. (Read Wang's article on p 791.)



Zhigang Zhou

Image courtesy of Zhigang Zhou.

Current position: National Institutes of Health, National Center for Biotechnology Information, Visiting Scholar
Education: Peking University, B.S., 1996; Duquesne University, Ph.D. in chemistry with Prof. Jeffry D. Madura, 2003
Postdoctoral work: Purdue University, Department of Medicinal Chemistry and Molecular Pharmacology, postdoctoral researcher with Prof. Carol B. Post
Nonscientific interests: Swimming, watching movies

My research interest is computational study of the interaction of protein and active ligand for drug development. At Purdue, I worked on a project to discover and develop antivirals for dengue, yellow fever, and West Nile viruses. These viruses are a big and expanding threat to human health, but no drug is currently available for treatment of the infections caused by these viruses. In this project, our goal was to discover antivirals and eventually to design new compounds that might be an effective treatment. We used a less common strategy by targeting one of the structural proteins, E protein, which coats the dengue virus, undergoes a maturation process, and is active in entry into the host cell. Our article reports the ranking of active compounds by computational high-throughput screening, the biological activity of the top-ranked compounds, and the observation of one compound binding to E protein BOG pocket by NMR. The success of this study has been highly rewarding, and I am pleased to have contributed the computational component that was the cornerstone for the project. The availability of active compounds should now enable future antiviral development with the eventual goal being the treatment of human infections caused by these viruses. (Read Zhou's article on p 765.)