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Preface

Interfacially active peptides and proteins



There are many naturally-occurring and engineered peptides and proteins that bind to lipid bilayers at the bilayer-water interface, and drive the rearrangements of lipids. This property, which has been called “interfacial activity”, is driven by the amphipathic properties of peptides and proteins. The outcomes of the protein – lipid interactions can be diverse, but remain true to the rules of interfacial science. Despite impressive successes in the field, many questions about membrane active peptides remain unanswered. To discuss recent progress and open questions in the field, we organized a symposium on “Interfacially Active Peptides and Proteins” for the Spring 2013 National Meeting of the American Chemical Society, which took place in New Orleans, Louisiana. The goal of the symposium was to encourage an exchange of ideas that will move the field forward.

The outstanding scientific presentations and the lively discussion at the symposium lead to the idea to portray the state of the field with a Special Issue of *Biochimica et Biophysica Acta – Biomembranes*. In this Special Issue, we bring together scientists, including many of the participants of the symposium, who are working in the area of interfacially active peptides and proteins. Contributing authors utilize diverse experimental and computational techniques, representing a broad cross-section of the field, and we hope that the readership of BBA Biomembranes will find this Special Issue informative and stimulating.

We thank the editors of BBA Biomembranes for supporting this Special Issue, and we thank the BBA staff for helping it come together. Finally, we thank the authors and the members of their labs for the excellent articles herein.



Kalina Hristova, PhD, received her B.S. degree in Physics from the University of Sofia, Bulgaria, and her Ph.D. degree in Materials Science from Duke University. She did post-doctoral work at the University of California, Irvine. She joined the faculty at Johns Hopkins University as an Assistant Professor in 2001. Now she is a Professor and the Marlin U. Zimmerman Faculty Scholar in the Departments of Materials Science and Engineering at Johns Hopkins University. Kalina Hristova is a recipient of the Margaret Oakley Dayhoff award from the Biophysical Society. The main focus of the research in her laboratory is the thermodynamic and structural principles that underlie membrane protein folding and signal transduction across biological membranes.

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William C. Wimley, PhD, a native of Connecticut, earned a B.S. in Biophysics from the University of Connecticut. He obtained a PhD in Biochemistry at the University of Virginia in 1990, where he studied the biophysics of lipid–lipid interactions in multicomponent bilayers. His postdoctoral studies were conducted at the University of California, Irvine where he investigated the interactions between peptides and membranes. In 1998, Dr. Wimley joined the faculty of the Biochemistry Department at the Tulane University School of Medicine in New Orleans, where his studies on peptide–membrane interactions have taken on a translational flavor. He currently focuses on the use of high through methods to identify peptides that have potentially useful membrane activities, including antimicrobial activity, pore formation and membrane translocation.