Taking Charge: The Role of Water in Mediating Ion Distribution at Water/Organic Interfaces

Prof. Geri Richmond
Department of Chemistry
University of Oregon

Inorganic ions, and molecular ions present at the surface of aqueous solutions can have a strong influence on the behavior of many complex physical, chemical and biological processes. To advance our knowledge of the role that these charged species play in these systems, we need to develop a molecular level picture of how ions, including acids and bases, adsorb at aqueous surfaces and how these ions enhance or diminish the adsorption of other species at these surfaces. This presentation will focus on what we are learning about charged ions at a water surface, with a particular focus on the differences between how these ions behave at an air/water interface compared to an interface between water and hydrophobic liquids and films. Our studies that combine nonlinear spectroscopic measurements at surfaces and molecular dynamics calculations provide intriguing insights into this relatively unexplored but important area of interfacial science.