

William R. Wiley

EMSL In Brief

Environmental Molecular Sciences Laboratory

EMSL User Receives Presidential Early Career Award for Scientists

Julia Laskin received the U.S. government's highest honor for researchers at the beginning of their careers when she accepted the Presidential Early Career Award for Scientists and Engineers at the White House on November 1. A senior research scientist at Pacific Northwest National Laboratory, Laskin was honored for her work in fundamental reaction kinetics and ion surface reactions conducted at the U.S. Department of Energy's Environmental Molecular Sciences Laboratory, a national user facility located at PNNL.

Laskin's work provides a foundation for understanding the mass spectrometry of high molecular weight compounds and preparation of novel biomaterials. These materials have extremely pure, uniform layers of specific molecules on the surface.

Preparing these molecules begins by separating out the desired molecules from the sample using the unique Fourier transform ion cyclotron resonance mass spectrometer at EMSL. Once separated, the apparatus gently pushes the beam of peptides toward the surface. "We want a soft landing," said Laskin. "Not a crash landing."

The Soft Landing Apparatus allowed the team to manipulate the ion beam and pattern the molecules on the surface. At the time of the collision with the surface, the molecules react with the chemical groups on the surface and form strong covalent bonds. The process resulted in covering 60% of the desired surface.

"I am very pleased that EMSL users such as Julia are receiving the recognition they deserve for innovative research," said Allison Campbell, EMSL Director. "EMSL is proud to count Julia among our users whose careers are making great strides."

In the near future, Laskin and her colleagues at PNNL will study if this method can be used to create surfaces studded with peptides and other molecules that cannot be prepared using traditional methods.

For more information, contact Mary Ann Showalter (509-376-5751).



Julia Laskin

P.O. Box 999 Richland, WA 99352 • <http://www.emsl.pnl.gov> • 509-376-2553