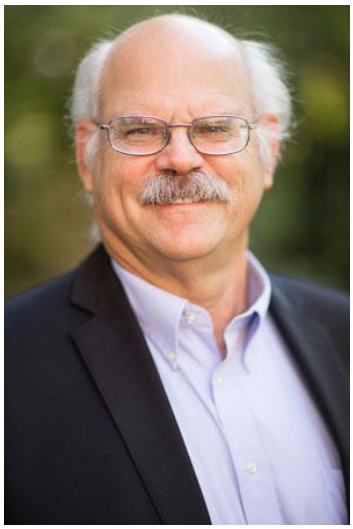
Materials Science Institute Seminar



David G. Castner

Director of National ESCA & Surface Analysis Center for Biomedical Problems
Molecular Engineering & Sciences Institute
Joint Professor of Bioengineering & Chemical Engineering
University of Washington

"Advances in Surface Analysis Instrumentation: From Single Crystals to Biomaterials"

Surfaces and interfaces play a critical role in material performance in many applications including catalysis, biomaterials, microelectronics, tribology and adhesion. Characterizing the important surfaces and interfaces involved in each application may present different challenges, but the approach to investigating them often is rather similar. Specialized instrumentation is typically used to probe the surface region of a material and often times it is required to develop new instrumentation and data analysis methods to obtain the desired information. It usually best to use multiple experimental techniques, often coupled with theoretical calculations and simulations, to gain a more complete understanding of the surface and interface regions. Careful handling and preparation of the samples is required so the surface is not altered during these processes as well as during analysis. Using model samples with well-defined surface structures and compositions can provide information about fundamental processes as well as help develop the analytical tools and methodology needed to characterize complex surfaces and interfaces. Thus, the expertise and experience a surface analyst acquires in one field can be readily applied to other fields, even when those fields are significantly differently (e.g., biomaterials and microelectronics). This has resulted in surface analysts moving rather easily between different research and application areas.

Friday March 9, 2018

4:00 pm, 110 Willamette Hall

Refreshments at 3:45pm in MSI Basement Atrium

Host: Samantha Young (as part of UO Dixon Innovation Fellowship)

MSI materials science institute