# CHEMICAL ENGINEERING

## SEMINAR SERIES

## DAVID BECK

### Monday, November 20, 2017

Research Associate Professor
University of Washington

# Data science: Accelerating innovation and discovery in chemical engineering & beyond

**ABSTRACT:** All of science and engineering, including chemical engineering, is being transformed by new sources of data from high-throughput experiments, observational studies, and simulation. In this new era of data-enabled science and engineering, discovery is no longer limited by the collection and processing of data but by data management, knowledge extraction, and the visualization of information. The term data science has become increasingly popular across industry, and academic disciplines to refer to the combination of strategies and tools for addressing the oncoming deluge of data. The term data scientist is a common descriptor of an engineer or scientist from any disciplinary background who is equipped to seamlessly process, analyze, and communicate in this data-intensive context. The core areas of data science are often identified as data management, statistical and machine learning, and visualization. In this talk, I‚Äôll present an overview of these core areas, discuss application areas from within chemical engineering research, and conclude with an open discussion on ways we can incorporate data science in our own research programs.

**BIOGRAPHY:** David Beck is a Research Associate Professor in Chemical Engineering at the University of Washington (UW) and the Director of Research for the eScience Institute, the UW‚Äôs nexus for Data Science. He received his BS in Computer Science from Drexel University in 2000 and Ph.D. from the University of Washington in Biomolecular Structure & Design from Medicinal Chemistry in 2006. He did a post-doc in the Bioengineering department, also at UW, and joined the eScience Institute in 2009 and Chemical Engineering in 2010. Dr. Beck is also an adjunct Research Associate Professor in the Department of Environment and Occupational Health Sciences. The Beck Research Lab works on a variety of science problems at the intersection of Data Science, biology and chemistry with applications in energy, health and the environment.

**RECEPTION 3:30  •  LECTURE 4:00 – 5:00**
**PHYSICS ASTRONOMY BLDG. PAA A110**

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