



DEPARTMENT OF  
**Chemical and  
Biological Engineering**  
UNIVERSITY OF WISCONSIN-MADISON

# 2017 W. Marshall Founders' Lecture

*presented by:*



**DR. BRIAN KELLEY**

Senior Vice President of Process Development  
VIR Biotechnology Inc.  
San Francisco, CA

**An Industrial Perspective on Applied Science &  
Engineering for Biopharmaceutical Process Development**

Protein purification technology is a core component in the production of biopharmaceuticals. The recombinant therapeutic protein industry was launched in 1982 with insulin, and has now impacted tens of millions of patients with life-saving therapies from over 60 new products introduced since then; these are only a small fraction of the thousands of recombinant proteins that have been investigated in clinical development. I will review the three decades of purification technology that benefited these patients. Some of these projects have enabled the launches of new products, while others have refined our approaches to definition, optimization and validation of manufacturing processes. A common thread is the focus on practical advances that have broader applications for industry – these include multivariate process robustness studies, high-throughput chromatography optimization, debottlenecking of high titer antibody processes, Quality by Design filings which enable design space claims, and strategies for accelerated product development pathways. Finally, I will share perspectives on how purification process development for protein therapeutics has advanced in this period, and what we might see as future opportunities for proteins... and beyond!

**Tuesday, Oct. 10, 2017**

**Seminar Reception**

**3:30-4:00 pm**

**Cheney Room/1413 Engineering Hall (1415 Engineering Drive)**

**Lecture**

**4:00-5:00 pm**

**Room 1610, Engineering Hall**