

## SMS Fall 2022 Eyring Lecture

Friday Nov 4 | 2:30pm | Biodesign Auditorium

### Selective Proteomic Analysis of Cellular Sub-populations in Complex Biological Systems

This lecture will describe the use of non-canonical amino acids (ncAAs) as selective probes of protein synthesis in complex biological systems. Pulse-labeling with ncAA probes provides time-resolution, while controlled expression of mutant aminoacyl-tRNA synthetases allows the investigator to restrict analysis to cell types or cell states of interest. The methods are applicable to studies of microbial systems, mammalian cell culture, and a variety of animal models. The scope and limitations of the approach, and some recent results, will be discussed.

### David Tirrell, PhD

*Professor, California Institute of Technology*

David A. Tirrell is the Ross McCollum-William H. Corcoran Professor of Chemistry and Chemical Engineering, Carl and Shirley Larson Provostial Chair, and Provost at the California Institute of Technology. Tirrell was educated at MIT and at the University of Massachusetts at Amherst. He joined the Department of Chemistry at Carnegie-Mellon University in 1978, returned to Amherst in 1984, and served as Director of the Materials Research Laboratory at UMass before moving to Pasadena in 1998. At Caltech, he has served as chairman of the Division of Chemistry and Chemical Engineering (1999-2009), director of the Beckman Institute (2011-2018) and provost (2017-present). Tirrell's research interests lie in macromolecular chemistry and in the use of non-canonical amino acids to engineer and probe protein behavior. His contributions to these fields have been recognized by his election to the American Academy of Arts and Sciences, the American Philosophical Society, and all three branches (Sciences, Engineering and Medicine) of the U.S. National Academies.

