



# People

[BME](#) / [People](#) / [Faculty](#)

## William Olbricht

Professor

### Chemical and Biomolecular Engineering

William Olbricht's research involves applying fluid mechanics and rheology to problems with broad technical relevance to industrial and biological processes. He is particularly interested in multiphase fluid systems, which present special challenges to analysis, even in relatively simple flows.

Work in this area requires the use of specialized experiments to test predictions of a theory or numerical and to discover new phenomena that may be difficult to predict from the initial principles. One example is the flow of blood in small arterioles and capillaries that comprise the microcirculation. In this case, the goal is to develop quantitative models, corroborated by in vivo and in vitro experiments, which can be used to predict blood-cell flux in normal and pathological conditions. The model systems produce detailed data that cannot be obtained in animal studies.

This research also concerns the fluid mechanics of composite materials called capsules, which consist of a liquid interior surrounded by a thin membrane. Naturally occurring capsules are ubiquitous in biological systems. Synthetic, liquid-filled capsules are used in time-release drug delivery, enzyme immobilization, artificial blood, emulsion stabilization and regulation of mass transfer using specialized membranes.

Dr. Olbricht has developed experiments to study the fluid mechanics of liquid-filled capsules including their motion, flow-induced deformation and breakup in well-defined flows.

Professor Olbricht joined the Cornell faculty directly after receiving his doctorate.

### Education

- Ph.D. 1980, California Institute of Technology, Chemical Engineering
- B.S. 1973, Stanford University, Chemical Engineering

### In This Section

- ▶ [Biography](#)
- ▶ [Group Members](#)
- ▶ [Official Bio](#)



### Contact Information

Address:  
245 Weill Hall  
Cornell University

Phone: (607) 255-4362  
Fax: (607) 255-7330  
E-mail: [wlo1@cornell.edu](mailto:wlo1@cornell.edu)