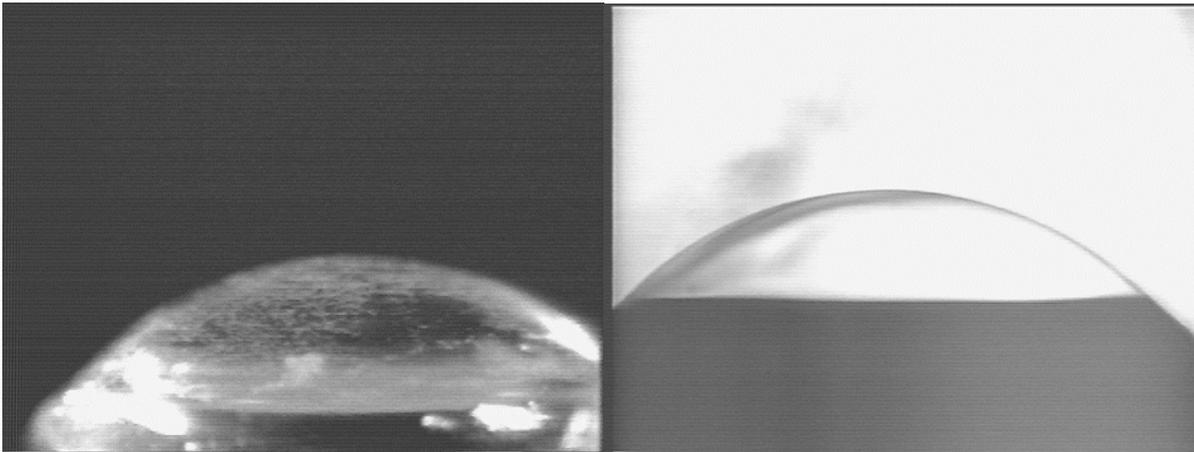


2014 Cell Culture Engineering Award Winner Jeffrey J Chalmers The Ohio State University



Jeff Chalmers, Professor of Chemical and Biomolecular Engineering at the Ohio State University and, since 2001, director of the OSU Comprehensive Cancer Center's Analytical Cytometry's Shared Resource and his team of researchers are recognized for their outstanding contributions to the cell culture field. These include contributing to the elucidation of the mechanisms of cell damage in large-scale cell culture processes and advocating the use of a hydrodynamic parameter, energy dissipation rate, EDR, to quantify the hydrodynamic conditions in several types of bioprocess equipment. To begin to quantify the effect of EDR on cells, he and his students developed a device (also known as the "torture chamber"), and subsequently advocated its use in the biotechnology industry to quantify the hydrodynamic sensitivity of a number of animal cell lines, and their specific clones. His most significant accomplishment in this area was his detailed study of how animal cells attach to bubbles, and how Pluronic F-68 prevents this attachment. Through use of high-speed imaging technology (below, presented at Cell Culture Engineering III and IV) Chalmers and his team showed cells in the bubble film (white spots) in media without Pluronic F-68, and the same system containing F-68 (no white spots on the bubble film). In addition, Chalmers and his team developed and patented an alternative to the well-known cell protective agent, Pluronic F-68, which prevents this adhesion.



Professor Chalmers has mentored more than 40 graduate students, many of whom work directly in the cell culture field. Jeff is also actively involved in the cell culture community, serving as co-chair for Cell Culture Engineering V and Cell Culture Engineering VI in 1996 and 1998 respectively. He has authored more than 150 peer-reviewed articles and patents and has given more than 150 invited seminars. He is on the editorial board of *Biotechnology and Bioengineering* since 2003.

This prestigious award recognizes outstanding contributions to the field of Cell Culture Technology and Engineering, and significant service and dedication to the profession. The award was established in 2001, and is given bi-annually at the Cell Culture Engineering conference (CCI Conferences). Former recipients were: Wei-Shou Hu (2002), Eleftherios T. Papoutsakis (2004), W. Robert Arathoon (2006), Martin Fussenegger (2008), Michael Betenbaugh (2010), and James M. Piret (2012).