M4: ICB – Case Study 1, Biovolutions

**(Dr. Maurizio Cattaneo, President and CEO of BioVolutions Inc.)**

Integrated Continuous Bioprocessing (ICB) involves the coupling of downstream continuous capture steps to a continuous perfusion mammalian high cell density culture. This module is designed to provide you with a case study of an ICB including a RAMM (Risk Assessment and Mitigation Matrix) to identify critical quality attributes (CQA) and CPP (Critical Process Parameters) to ensure the quality of monoclonal antibodies produced in ICB mode. In this program, participants will learn about: UPS and DSP integration and challenges to maintain the ICB in a state of control, process analytical technologies (PAT), QbD and DoE for the ICB case study.



Dr. Maurizio Cattaneo is President of bioVolutions, a local CMO based in Woburn, MA. He received a Ph.D. in Chemical Engineering from McGill University in 1989. Maurizio began his career advancing the field of immobilized hybridoma cell technology while a Post Doc at the University of Waterloo (1990), the Biotechnology Research Institute of NRC Canada developing on-line biosensors for monitoring bioreactor cell culture (1991-1998), and finally at Percivia and MIT (2011-2012) developing single use bioreactor sfor mammalian cell culture. Since 2012, at bioVolutions Inc., Dr. Cattaneo has been responsible for implementing a commercially viable ICB for manufacturing monoclonal antibodies.