

**Michael J. Bouchard, Ph.D.**

**Mentor: Jane Clifford, Ph.D.**

**Title: Stackable Graduate-level Certificates**

With the rising cost of graduate-level education, and a recognized need in industry for tailored education programs, skill-based certificates that provide theoretical and practical knowledge that is individual- and industry-specific are becoming more popular. Certificate programs, however, are often viewed as limited because they typically cannot be used to fulfill the requirements for a graduate degree such as a masters-level degree in a particular discipline. Stackable certificates, and stackable certificate programs, can address the need for tailored education while also allowing for certificates to be “stacked”. Stacking allows credit hours of each certificate to be combined to fulfill requirements for a graduate-level degree. Stackable certificates also create flexibility in terms of time-to-degree; students can choose to acquire a certificate(s) only or to stack these over an extended period of time to fulfill requirements for a graduate degree. We are developing a series of Biomolecular Technology stackable certificates that can be acquired as individual skill-based certificates or stacked, along with a core-theory based certificate, to fulfill requirement for a masters in Biomolecular Technologies. Each certificate is designed to provide both theoretical knowledge and practical experience that could help an individual acquire a specific skill and/or add to his/her employment credentials. To ensure that each certificate covers a topic and teaches a skill that is relevant to the needs of industry, we are creating a panel of industry-based advisors who will meet annually to review the menu of offered certificates and provide advice regarding upgrades to certificates to ensure that taught skills reflect modern methods, creation of new certificates that cover theory and practice of new technologies, or termination of certificates that cover theory and practice of technologies no longer relevant to industry. Our long-term goal is to create a menu of stackable certificates in Biomolecular Technologies (e.g. Protein Purification and Crystallization, Imaging, Genomics, etc.) that can be used to fulfill a specific educational need or combined to fulfill the requirements for a masters in Biomolecular Technologies. The creation and continuous evaluation of our menu of stackable Biomolecular Technologies certificates will generate a highly adaptive education model that could also be used in various disciplines to meet current and future needs of students.