The objective of Dr. Musser’s and Dr. Soendergaard’s collaborative research is to examine the difference in gene expression between ovarian cancer cells treated with J18 targeting peptide and ovarian cancer cells not treated with the peptide. In Dr. Soendergaard’s previous research, a peptide sequence called J18 was identified that shows high affinity for ovarian cancer cells, but not normal ovarian cells, proving to be useful for detecting and imaging ovarian cancer. Preliminary data indicated that J18 may have toxic effects on cancer cells. Ovarian cancer is the fifth leading cause of cancer deaths in women, and there is a need to develop new drugs that treat the disease. For Dr. Soendergaard’s and Dr. Musser’s current collaboration, I will assist in using a microarray technique to examine if the J18 peptide causes toxic effects by changing gene expression of ovarian cancer cells. Gene expression can be quantified by measuring mRNA, the intermediate between DNA and protein. We will isolate and amplify mRNA from ovarian cancer cells treated with J18 targeting peptide and ovarian cancer cells not treated with the peptide. The samples will be analyzed using a microarray to determine if there are differences in the gene expression of the cells that may help us understand the toxic effects of the peptide. If we can gain insight into how and why the J18 peptide has toxic effects on cancer cells it binds to, it opens the door to explore the viability of the peptide as a possible treatment for ovarian cancer.