

Name: Nancy A. Lalanne

Majors: Chemistry and Political Science **Certificate:** European Union Studies

Honors and Awards:

- University Honors College Full Tuition Scholarship
- Tribune-Review Outstanding Young Citizen

Experience and Community Outreach:

- Junior Councilperson, Crafton Borough
- Peer Leader, Honors Organic Chemistry and Freshmen Engineering Seminar
- Study Abroad, Charles University, Prague
- Founder, Breakfast Book Club
- Member, Pitt German Club



Future Plans

“After I graduate this April, I plan to continue my research for one more year in the lab where I work currently. Then the following fall, I plan to begin medical school.”

Voting Information

Crafton, PA (Congressional District 14)

Project Abstract

In 2005, 11,340 Pennsylvanian women were diagnosed with breast cancer. Due to screening mammography, the majority of these cases detected at early stages of the disease. Despite early detection, between 8-14% of women with stage I disease and 15-25% of women with stage II disease who are treated will have breast cancer that recurs within 10 years. Currently, only three markers (ER, PR, and Her2/Neu) are clinically used to evaluate the potential aggressiveness of the disease. We hypothesize that digital time-lapse imaging and transwell analysis of cell lines derived from early stage tumors will predict which are more likely to recur. Subsequent microarray analysis will provide the basis for different cell behavior by exhibiting differential expression of genes associated with cell motility. Based on a novel breast tissue engineering system developed by our laboratory, we have established 14 stage I cell lines and 23 stage II cell lines from human breast tumors, at a success rate of over 60% (compared to the literature rate of 15%). From these unprecedented cell lines, we have developed a set of defined cell behaviors and an expanded set of biomarkers from microarray data that correlate with recurrence in these cell lines. Ultimately this panel of cell motility related genes developed from both the functional assays and microarray analysis may be translated into improved treatment options based on the patient's own genetic expression.

Project Faculty Advisor: Jean J. Latimer, Department of Obstetrics, Gynecology, and Reproductive Sciences, School of Medicine, Pittsburgh Campus