Antonio Costa, graduate student, Dept. of Pharmaceutical Sciences, School of Pharmacy.

My name is Antonio Costa and I currently reside in Hartford, CT. I am a graduate student in Professor Diane Burgess' lab in the Department of Pharmaceutical Sciences, at the School of Pharmacy, University of Connecticut. My research is on optimizing the processing of liposomes, which are invasive drug delivery systems capable of targeting different regions of the human body, to ultimately enhance the safety and quality of drug products as well as the overall design of the manufacturing process. Liposomal drug products can reduce side effects of toxic drugs such as anticancer and AIDS drugs and achieve targeting to the appropriate sites in the body to enhance efficacy. Unfortunately, the manufacturing process has been poorly understood and this has lead to increased cost of liposome products, as batches must be thrown out due to failure to pass appropriate quality standards. This has led to drug product shortages that have impacted critically ill patients. My research is designed to simplify as well as understand the manufacturing process to ensure quality and thus reduce costs as well as guarantee supply. This research has been partially funded by the FDA and this summer I will work with Shire Pharmaceuticals on a part of my thesis research. Following graduation I envision starting a company to work on similar pharmaceutical engineering problems and/or becoming a science leader in an existing pharmaceutical company.