

Name: Michael Frohbergh

Position: Graduate Student, Drexel University

Topic of Interest: Electrospinning Chitosan Nanofibers Mineralized with Hydroxyapatite to Induce Osteogenic Differentiation of Human Mesenchymal Stem Cells

About Myself: After receiving my bachelor's degrees in chemistry and biochemistry from the University of LaSalle in 2007, I began my graduate studies in the School of Biomedical Engineering, Science and Health Systems at Drexel University with a concentration in tissue engineering and regenerative medicine. Around the busy schedule of a grad student, I enjoy sports (mainly hockey, football and the Phillies) and trying new things all the time. A quote that I live by is "Almost every good scientific idea is thought up over a glass of beer." I enjoy sunsets and long romantic walks on the beach.



About My Work: My specific project involves the fabrication of electrospun chitosan fibers mineralized with hydroxyapatite in the aim of inducing bone tissue regeneration in bone degrading diseases. As you age, the amount of osteoblasts, cells that produce natural bone, produced in bone tissue decreases, while the amount of osteoclasts, cells that resorb and remodel bone, increases. This imbalance of production leads to bone degrading diseases, such as osteoporosis. These novel scaffolds fabricated via electrospinning (see image below) can contain the organic phase, namely chitosan, and the inorganic phase, namely hydroxyapatite, to mimic the natural biphasic nature of bone tissue.