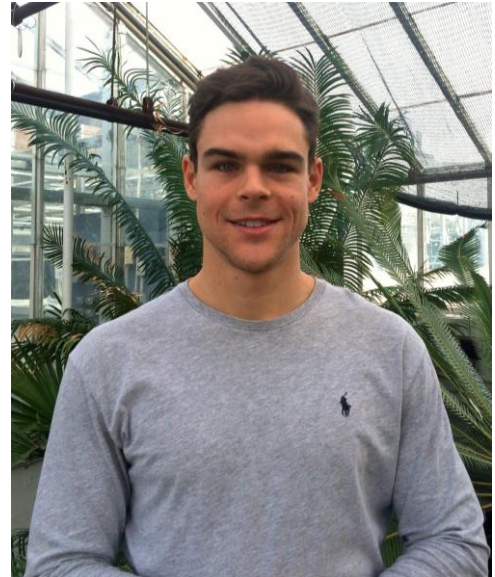


Celebrating BITS Student Mentors

Lucas McCartney

Lucas McCartney is a PhD student in the Bioresource Engineering Department at McGill University. He works with Prof. Mark Lefsrud on controlled environments for plant production, in the biomass production lab. Lucas grew up on a turkey farm in Quebec City. He began work in research as an undergrad Research Assistant with Prof. Lefsrud. Together, they designed and hold a patent on what they call “The Naturally Ventilated Augmented Cooling (NVAC) Greenhouse”, which is specifically built for harsh tropical climates. What makes their design different from typical greenhouses is that the NVAC greenhouse uses natural ventilation and a misting system, which acts as a catalyst enhancing the cooling process. Their long-term goal is to make NVAC commercially available to provide those living in harsh tropical climates with affordable and accessible greenhouses to combat food insecurity. During the warmer half of the year, Lucas works on the NVAC greenhouse while during the other half of the year he focuses on urban horticulture, working with Urban Barns Foods.



BITS students in 2014 retrofitting a large commercial greenhouse to the NVAC design



Lucas pictured with BITS students he mentored

[photos by Zainab Iqbal, summer 2014]

Lucas built the first prototype for the NVAC greenhouse in Montreal and then tested it in Barbados as a part of one of the BITS 2014 projects. He mentored a group of 3 students, who together built the NVAC attachments for a commercial greenhouse and tested it throughout the summer. This coming summer (2015), he will be leading and mentoring two projects centred on greenhouses. The first project will be focused on further optimizations of the first NVAC built in Barbados in 2014 and the second project will involve building a new fully functional quarter-scale greenhouse at the Bellairs campus. This will serve as a social and educational tool for resident Barbadians as well as providing some of the produce for Bellairs.