Graduate Student Profiles

We are interested in hearing about the research that Canadian graduate students are involved in! Please send your profiles to the Editor of this newsletter at cba.abc.bulletin@gmail.com. Profiles should be no longer than 250 words, and you should include a photo.

Michael Wright. Wilfrid Laurier University.

Michael, (bottom left) with a heavy *Cuscuta* infestation in Mexico

I have always had an interest in the natural world, wanting to know what everything was and how things worked. My undergraduate studies drew me towards developing a deeper understanding of biological phenomena, particularly the origins of biodiversity and associated evolutionary processes. A course in systematic botany with Dr. Mihai Costea at Wilfrid Laurier University sealed the deal – I found plant diversity and evolution fascinating and beautiful, and was amazed by parasitic plants that have traded autonomy for a much more precarious lifestyle! Needless to say, I was hooked.

For the past three years I have studied the parasitic plant genus *Cuscuta* in the lab of Dr. Mihai Costea. For my honours thesis, I worked on a revision of the taxonomy of a group of dodders from western North America. I explored the evolution of reproductive biology within *Cuscuta* for my Master's thesis, with particular focus on floral morphology, anatomy, and pollen production. This year, I am excited to begin my PhD with Dr. Saša Stefanović at the University of Toronto, where I will continue to study the biodiversity and evolution of *Cuscuta* with microsatellite markers and molecular cytogenetics. My long-term goal is to develop deeper understanding of the evolution of parasitism in plants, with a focus on evolutionary transitions between host specialization and generalism, and the ecology of parasite virulence. In particular, I am interested in the roles of polyploidy, aneuploidy, supernumary chromosomes and chromosomal rearrangements in ecotypification and speciation within parasites.

Sandra Keerthisinghe, Department of Botany, University of British Columbia

Sandra Keerthisinghe

While in the final year of my B.Sc. program at UBC, I volunteered in Dr.Fred Sack's lab, during the course of which I became increasingly engaged in conducting research in the field of plant cell biology and genetics, which I found to be very interesting. As a result, I joined the lab as a M.Sc. student. The Sack lab investigates how cells co-ordinate the regulation of their development, differentiation and morphogenesis, utilizing stomata, which are specialized cellular structures found on the shoot epidermis, as a model system. My Master's project focused on further characterization of the receptor-like kinase MUSTACHES (MUS), a novel signalling protein identified by Dr. Jeannette Nadeau, a former member of the Sack lab. MUS appears to be involved in the generation of proper stomatal morphogenesis, a highly co-ordinated event which imparts bilateral symmetry to the two guard cells of the stomata, which is essential for proper stomatal functioning. My work demonstrated that MUS may be required to maintain the polarity of microtubule dynamics. As well, I extensively characterized MUS localization patterns, and the point of origin of MUS action. Currently, I am continuing my work in the Sack Lab as a PhD candidate, with the objective of further characterizing microtubule regulation by MUS, and further defining the MUS signalling pathway by identifying cellular components involved.

I thank the Canadian Botanical Association, for granting the opportunity to share my work, as well as for the generous support offered to the Botany Graduate Students' Association of UBC.

Teagen Quilichini, Department of Botany, University of British Columbia

Teagen Quilichini

My research is focused on understanding the composition and formation of sporopollenin. Sporopollenin is a highly resistant biopolymer in spore and pollen walls, which protects these structures from environmental stresses. I am interested in understanding how the components of the outer pollen wall are exported from their site of synthesis in the tapetum to the anther locule for polymerization on the surface of developing pollen grains. In particular, I am studying an ABC transport protein thought to function in sporopollenin export from tapetum cells. I plan to use the *abcg26* mutant as a tool to investigate the nature of sporopollenin precursors *in planta*.

I am currently at UBC under the joint supervision of Dr. Carl Douglas and Dr. Lacey Samuels, as part of the “Working on Walls” network funded by NSERC. Before starting graduate school in 2008, I studied with Dr. Douglas Muench at the University of Calgary.