

Cactus Biology – BIOL 4506

If you want to learn something just for fun, not because of any practical applications, then this course is for you. What is a cactus and what do we know about their peculiar architectures? What exactly are cactus spines? Why are cactus fruits that you buy in the grocery actually more than just fruits? How can some cacti survive as 50 foot-tall trees, some in deserts and some in forests? But why are many related cacti at most an inch across when mature? With so little wood, why don't tall cactus stems break on windy days? Without much wood, how do we know that even small cacti can live for over a century? How do the five species of native Canadian cacti make a living, including one species that seems to be dispersed by buffalo in mountains and prairies, but by otters (submerged in sea water) in the Gulf Islands? Why are cacti restricted to the Americas (except one weird tropical epiphytic species), but their close relatives live throughout Africa, Madagascar, and the Americas? You will see some of the most beautiful places on earth, from the Grand Canyon and Arches National Park to less known but equally beautiful places like the Cataviña boulder fields of Baja California and bambuí limestone outcrops of Brazil. You will also see some of the fifty or more cactus species that I grow unprotected outdoors year-round through harsh Ontario winters. If there is interest, we also might talk about more practical aspects of cactus biology, such as cooking cacti for food and hallucinogenic compounds in a few species. For copies of Root Gorelick's cactus papers, see <https://rootgorelick.com/21-2/publications-by-topic/cacti-and-succulents/>.

