

**New England Botanical Society
Graduate Student Research Award
2022 AWARD WINNER**

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How carnivorous are you? Seasonal changes in carnivory and prey preference among carnivorous plants of New England

Charles Darwin's "most wonderful plants in the world," carnivorous plants, thrive in pristine, nutrient poor wetlands. They trap and digest invertebrates to compensate for the lack of nutrients in the environment. Some studies indicate that carnivorous plants are sensitive to the introduction of nutrients in the environment, especially to nitrogen (N). In the wetlands of New England (NE), three genera of carnivorous plants occur: *Sarracenia* (North American pitcher plants), *Drosera* (sundews), and *Utricularia* (bladderworts). Although these genera are derived from completely different evolutionary lineages and employ different carnivorous strategies to attract and capture prey, they grow in the same habitat sharing the same N resources. These facts raise a few questions. How much N do they assimilate from prey vs. the environment in each species? Is one carnivorous strategy better than the other? Do they have different prey preferences? I will address these questions by monitoring the changes in naturally abundant N stable isotope ratios from the leaves of carnivorous plants throughout their growing seasons. This work will provide insight into the dynamic, seasonal contributions of different species of carnivorous plants to N cycling in wetlands for conservation purposes. The prey preference study may reveal the contributions of NE carnivorous plants to controlling nuisance pests. Altogether, this work will raise awareness of the importance of protecting carnivorous plants and their habitats.

The New England Botanical Society offers awards of up to \$3,000 to graduate students to support botanical research. The awards encourage and support botanical research on the New England flora (plants, algae, and fungi), including support for field, lab, and herbarium work, as well as travel to New England by those who would not otherwise be able to work in the region. The awards are made to the graduate student(s) submitting the best research proposal dealing with systematic botany, plant ecology, genetics, plant conservation biology, or related fields pertaining to the New England flora.