

Greenhouse Provides a Colorful Learning Oasis



Student volunteers at the greenhouse sow seeds of different types of vegetables.

Photo: Creative Services

The greenhouse on the Fairfax Campus is a light-filled green space for research. As part of the Department of Environmental Science and Policy (ESP), it supports coursework and research projects by housing a rotating set of experiments for ecology and microbiology classes. Showcasing a permanent collection with representatives from the major plant families, the greenhouse is a brilliant display of specimens. Its diverse plant collection—ranging from aquatic plants to cacti—demonstrates specimens of different plant families and their varying characteristics.

ESP greenhouse manager Monica Marcelli maintains the greenhouse and prepares lab experiments for environmental science and microbiology courses. “The plant biology lab needs a variety of plant specimens to display for teaching,” says Marcelli. Students

in these labs observe ferns, bryophytes (mosses, liverworts, and hornworts), angiosperms (flowering plants), and gymnosperms (plants that produce naked seeds).

Ecology lab students are using radishes to evaluate how intraspecific (same species) competition for nutrients, water, and light affects plant weight. “The students start the radish seeds in the lab,” Marcelli explains, “and then we grow the plants in the greenhouse until harvest.” A microbial ecology lab experiment compares the root nodule development, biomass weight, and dry weight

in soybeans grown with and without rhizobium inoculum in different soil types.

Besides supporting plant experiments, the ESP greenhouse provides plants for entomology research both at Mason and at neighboring institutions. “We’re growing pawpaw trees, a native species, from seed,” Marcelli says. “They will support research evaluating the feeding habits of the zebra swallowtail butterfly.”

The greenhouse collaborates with the Smithsonian Institution’s National Museum of Natural History (NMNH) and other institutions on entomology and biology projects. The ecology lab grew tomato, tobacco, and radish plants to study the eating patterns of tobacco hornworm larvae. “We donated

the extra tomato plants to the insect zoo [in the NMNH] to feed its tobacco hornworms,” notes Marcelli, “and the extra tobacco plants to the George Washington University greenhouse.”

The greenhouse supports the Mason Organic Vegetable Garden by harboring seedlings until they are strong enough to be transplanted to the field. Student volunteers cultivate the garden, and half the produce goes to homeless shelters. “Students from the garden also volunteer at the greenhouse,” adds Marcelli, “and this help is very valuable.”



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