

PLANT BIOLOGY, ECOLOGY, AND EVOLUTION

The field of plant biology ranges from molecules to ecosystems. The importance of plants to the ecosystem and to humanity cannot be underestimated. They regulate global processes and form complex relationships with other organisms, and have intriguing patterns of development and diversity. Plants provide medicinal compounds, shelter, fuel, food and oxygen, and support the existence of life on Earth. As human population size increases, the need for more and better supplies of food, fiber and biofuels also increases. The study of plant biology underlies the applied sciences such as agronomy, forestry, natural resource management, horticulture and plant pathology.

To major in plant biology a student should have a strong interest in life sciences with a good background in chemistry and mathematics. Majors with a BS degree may choose to specialize by taking Degree Options in Ecology and Evolutionary Biology, Cell Biology and Molecular Genetics, Pre-Pharmacy, Pre-Law and Environmental Policy, and Pre-Forensics. Graduates with an option in Ecology and Evolutionary Biology are qualified to hold positions in federal and state agencies in areas such as conservation biology, habitat restoration, environmental biology and plant inspection. Graduates with an option in Cell Biology and Molecular Genetics are qualified for various research positions in private industry, such as plant biotechnology and drug development. Graduates with an option in Pre-Pharmacy will be well-prepared with all the courses required for Pharmacy School. Graduates with an option in Pre-Law and Environmental Policy will have completed the required courses for Law School. Graduates with an option in Pre-Forensics will be well-placed for further study and employment in the field of biological forensics. All majors are required to do at least one credit hour of research and faculty actively encourage undergraduate research in their labs. Several of the undergraduate courses, including Introduction to Plant Biology (PBIO 1404) have extensive in-class student-led research projects and presentation opportunities.

Facilities used in undergraduate teaching include well-equipped plant physiology and ecology laboratories, environmental chambers, the 160-acre McPherson Preserve and a herbarium with over 150,000 plant specimens. Faculty members teach and do research in their specialty areas of plant biology including ecology, population biology, biodiversity, climate change, evolution, physiology, biochemistry, biophysics, taxonomy and systematics, genetics and development, genomics, and cell and molecular biology.