

Academic Program Student Learning Goals – BOTANY MS & PhD

The mission of the Department of Botany is *to discover, maintain, and transmit knowledge concerning basic plant biology and to display leadership in the biosciences*. Following from this, and broadly stated, the purpose of the Botany Graduate Program is *to educate & train future scientists in a diverse array of subdisciplines related to the botanical sciences*.

Botany Graduate Students Learn to . . .

BOTANY MS	BOTANY PhD
Knowledge and Skills	
<ul style="list-style-type: none"> • Acquire and demonstrate fundamental understanding of the basic properties of plant life from the subcellular to the ecosystem level of organization. • Use critical elements of the methodological or theoretical framework in a specialized botanical subdiscipline to develop hypotheses, acquire scientific information, and interpret results in the context of the historical scientific literature. • Develop the skills of communicating scientific information, especially in written form. • Engage in the critical evaluation of botanical scientific data and its interpretation. 	<ul style="list-style-type: none"> • Demonstrate a fundamental breadth of understanding of the basic properties of plant life from the subcellular to the ecosystem level of organization, and an ability to integrate acquired botanical expertise with knowledge of related disciplines including, but not limited to, mathematics, physical sciences, and other life sciences. • Apply all elements of the methodological or theoretical framework within a specialized botanical subdiscipline to skillfully develop and execute original research, thereby demonstrating intellectual and technical competency appropriate to that subdiscipline. • Achieve a professional level of proficiency communicating scientific research proposals and/or results in written format. • Develop skills in oral presentation of scientific research data to peers and general audiences. • Evaluate, critique, and apply critical thinking skills to the generation of hypotheses, analysis of data, and interpretation of scientific results in botany and related disciplines.
Professional Conduct	
<ul style="list-style-type: none"> • Recognize and apply ethical conduct in the collection, analysis, and presentation of scientific data. • Develop the skills essential to critical debate, discussion, and exchange of scientific information among peers and audiences of diverse intellectual and personal backgrounds. 	<ul style="list-style-type: none"> • Value and promote professional ethics in the collection, analysis, storage, and presentation of scientific data. • Engage in critical debate, discussion, and exchange of scientific information among peers and audiences of diverse intellectual and personal backgrounds. • Appreciate the importance of professional service.