Course offerings in diverse areas of plant biology, ranging from the molecular to the ecosystem scale. Research opportunities and facilities are available in the following areas: cell biology, cellular imaging, cellulose biology, cellular signaling, developmental biology, plant hormones, epigenetics, systems biology, genetic engineering, transgene regulation and silencing, stress biology, plant gravitropism, phytochemistry, metabolic engineering, plant-microbe interactions, aquatic ecology, toxic dinoflagellates, endangered species, community ecology, physiological ecology, tropical ecology, evolutionary ecology, population ecology, paleobotany, plant systematics, evolution of flowering plants, and ethnobotany.

Admission Requirements
Students entering the graduate program in plant biology should have a bachelor's degree in plant biology or a related undergraduate program that includes biological, physical and mathematical science training including undergraduate courses in organic chemistry, calculus and genetics, as well as biology. All applications are screened by a departmental committee, and the best qualified applicants will be accepted until all available spaces are filled.

Master's and Doctoral Degree Requirements
The M.S. requires a total of 30 credit hours (20 of the 30 credit hours must be from 500-, 600-, 700/800-level courses; 18 credit hours must be letter graded); the Master of Plant Biology requires a total of 36 credit hours. The Ph.D. requires a total of 72 credit hours. Two core courses (Functional Plant Biology and either Plant Functional Ecology or Systematic Botany) are required. Other requirements include: a Plant Biology Colloquium, Plant Anatomy, an additional plant biology course, a graduate statistics course, a graduate ethics course, a thesis (for the M.S., but not the Master of Plant Biology) or dissertation (for the Ph.D.), written and oral preliminary examinations (Ph.D.), oral thesis or dissertation defense, and a one (M.S.) or two semester (Ph.D.) teaching experience. Students must maintain a "B" average in all course work.

Other Relevant Information
Graduate research and teaching assistantships and tuition remission information are available from the department. New students supported by departmental research/teaching assistantships may elect to rotate through three laboratories during their first semester. At the end of the semester, they will choose a laboratory for their research activities consistent with their interests and available research projects. Cooperative research in more than one laboratory is encouraged. Graduate students are expected to attend and participate in the seminar program every semester they are in residence. The department participates in training grants in biotechnology.

Degrees
- Plant Biology (MR) (http://catalog.ncsu.edu/graduate/agriculture-life-sciences/plant-biology/plant-biology-mr/)
- Plant Biology (MS) (http://catalog.ncsu.edu/graduate/agriculture-life-sciences/plant-biology/plant-biology-ms/)
- Plant Biology (PhD) (http://catalog.ncsu.edu/graduate/agriculture-life-sciences/plant-biology/plant-biology-phd/)
- Plant Biology (Minor) (http://catalog.ncsu.edu/graduate/agriculture-life-sciences/plant-biology/plant-biology-minor/)

Associate professors
Jose Miguel Alonso
Richard L. Blanton
Kent Oliver Burkey
Joann M. Burkholder
Susan B. Carson
Ralph E. Dewey
Robert Graham Franks
Amy Michele Grunden
Candace Hope Haigler
Linda Kay Hanley-Bowdoin
Christine Veronica Hawkes
William A. Hoffmann
Shuijin Hu
James E. Mickle
Thomas W. Rufty Jr.
Jean B. Ristaino
Heike Inge Ada Sederoff
William F. Thompson
Ross W. Whetten
Qiuyun Xiang
Deyu Xie
Tzung Fu Hsieh
Slavko Komarnytsky
Alexander Krings
Xu Li
Terri A.Long
Marcela Pierce
Rosangela Sozzani
Anna N. Stepanova
Jillian Marie De Gezelle
Chad Victor Jordan
Imara Yasmin Perera
Carole H. Saravitz
Nina S. Allen
Udo Blum
Wendy F. Boss
Rebecca S. Boston
Margaret E. Daub
Roger C. Fites
James W. Hardin
Walter Webb Heck
Rongda Qu
Jon M. Stucky
Judith F. Thomas
C. Gerald VanDyke
Thomas R. Wentworth

---

**Assistant professors**
Orlando Arguello-Miranda
Colleen Jennifer Doherty
Manuel Kleiner
William Kevin Petry
Seema Nayan Sheth