

Genetics

The Genetics Graduate Program is a University wide program. Current faculty are in 14 Departments and four Colleges. The Genetics Program provides a well-balanced program of graduate course work and research training. The faculty conducts basic research in all areas of genetics, including molecular, cellular and developmental genetics; behavioral genetics, biomedical genetics, evolutionary, population and quantitative genetics, statistical genetics, and bioinformatics. Faculty research utilizes both traditional model organisms (fruit flies, mice and Arabidopsis) and non-traditional systems (cats, cockroaches, dairy cattle, dogs, maize, pigs, pine trees and more). Interdisciplinary research is encouraged.

Master's Degree Requirements

The M.S. degree requires a minimum of 30 credit hours, of which 14 hours are core course requirements, three hours are additional elective graduate courses with substantial genetics content, and three hours are other elective graduate courses. M.S. students majoring in Genetics are required to complete dissertation research with three credit hours of Master's Supervised Research, six credits of Master's Thesis Research, one credit of Master's Thesis Prep, and one credit of Master's Examination. M.S. students are also required to teach one semester of undergraduate courses and may enroll in three credits of Master's Supervised Teaching. 12 hours of required courses are required for Genetics minors. The Master's of Genetics requires a minimum of 31 credit hours, of which 17 hours are core course requirements, six hours are additional elective genetics courses and eight hours are elective graduate courses.

Doctoral Degree Requirements

A total of 18 hours of seven core courses and 12 hours of elective graduate courses, nine of which have substantial genetics content, is required of all majors. Ph.D. students majoring in Genetics are required to complete dissertation research with three credit hours of Doctoral Supervised Research and a combination of Doctoral Dissertation Research, Doctoral Preliminary Examination, and Doctoral Dissertation Prep to total 39 hours. Students are also required to and teach two semesters of undergraduate courses and may enroll in six credits of Doctoral Supervised Teaching to be used toward the remaining 39 credit hours. 12 hours of required courses are required for Genetics minors.

Student Financial Support

Genetics graduate students are supported on Research and Teaching Assistantships (RAs and TAs). Specific pay varies depending on the assistantship, and students are paid bi-weekly. More information will be provided at the time of acceptance into the program.

Other Relevant Information

All M. S. and Ph. D. students rotate through three laboratories during their first semester. At the end of the semester, they choose a laboratory for their research activities consistent with their interests and available research projects. Provisions are available for a co-major and collaborative research in more than one laboratory.

Program Website (<https://genetics.sciences.ncsu.edu/graduate-program/>)

Admission Requirements

Applicants may come from a number of undergraduate programs that include biological, agricultural, physical and mathematical science training. All applications are screened by an admissions committee, and the best qualified applicants will be accepted up to the number of spaces that are available for new students. The program uses the requirements set by the Graduate School to evaluate applications (GRE, unofficial transcripts from each previously attended college or university, three letters of recommendation, personal statement, and proof of English proficiency for non-US citizens). Competitive applicants will include research and other relevant experience as well as their interest and fit for the program in their personal statement.

Applicant Information

- **Delivery Method:** On-Campus
- **Entrance Exam:** None
- **Interview Required:** None

Application Deadlines

- **Fall:** December 31

Degrees

- Genetics (MR) (<http://catalog.ncsu.edu/graduate/interdisciplinary/genetics/genetics-mr/>)
- Genetics (MS) (<http://catalog.ncsu.edu/graduate/interdisciplinary/genetics/genetics-ms/>)
- Genetics (PhD) (<http://catalog.ncsu.edu/graduate/interdisciplinary/genetics/genetics-phd/>)
- Genetics (Minor) (<http://catalog.ncsu.edu/graduate/interdisciplinary/genetics/genetics-minor/>)

Faculty

Full Professors

Jose Miguel Alonso

Peter J. Balint-Kurti

Rodolphe Barrangou

David M. Bird

Adam Joseph Birkenheuer

Matthew Breen

Ignazio Carbone

Ralph A. Dean

Ralph E. Dewey

Robert Graham Franks

Troy Ghashghaei

John R. Godwin

Major M. Goodman
Fred L. Gould
Candace Hope Haigler
Linda Kay Hanley-Bowdoin
Christine Veronica Hawkes
James B. Holland
Fikret Isik
Ramsey S. Lewis
Hsiao-Ching Liu
Steven Lommel
James W. Mahaffey
Christian Maltecca
Carolyn Jane Mattingly
Kathryn Montgome Meurs
Spencer V. Muse
Natasha J. Olby
Charles H. Opperman
Balaji M. Rao
Emilie Francesca Rissman
Jean B. Ristaino
Coby J. Schal
Maxwell J. Scott
Heike Inge Ada Sederoff
Seth M. Sullivant
William F. Thompson
Jeffrey L. Thorne
Jung-Ying Tzeng
Keith R. Weninger
Ross W. Whetten
Brian M. Wiegmann
Qiuyun Xiang
Deyu Xie
Jeffrey A. Yoder
Zhaobang Zeng

Associate Professors

John J Classen
David Lawrence Aylor
Chase Beisel
Nicolas Emile Buchler
Gavin Clay Conant
Shobhan Gaddameedhi
Steffen Heber
Vasu Kuraparthi
Randall Brian Langerhans
Terri A. Long
Marce D. Lorenzen
Ivana Mali
John Edward Meitzen
Susana Rita Milla-Lewis
Nanette M. Nascone-Yoder
Dahlia M. Nielsen
Xinxia Peng
Marcela Pierce
Antonio Planchart
David Michael Reif
Michael Hay Reiskind
Reade Bruce Roberts
Michael L. Sikes
Rosangela Sozzani
Anna N. Stepanova
Yihui Zhou

Assistant Professors

Hamid Ashrafi
Christa Baker
Louis-Marie Bobay
Benjamin John Callahan
Carter Clinton
Michael Anthony Cowley

Nathan Crook
Colleen Jennifer Doherty
Abdulkerim Eroglu
Rafael Felipe Guerro Farias
Joseph Gage
Amanda Marie Hulse
Albert Jun Qi Keung
Manuel Kleiner
Caroline Laplante
Wusheng Liu
Anna Michelle Locke
Elizabeth Lucas
Kurt Marsden
Santosh Kumar Mishra
Casey C. Nestor
Benjamin J. Reading
Ruben Rellan Alvarez
Adriana San Miguel Delgadillo
Caitlin Suzanne Smukowski Heil
Maria Rodgers
Eduardo Javier Lopez Soto
Casey Michelle Theriot
Laurianne Chantal Van Landeghem
Acer VanWallendael
Sara Villani
Justin Graham Alexander Whitehill
Christina Zakas

Wesley Edwin Kloos
Dale F. Matzinger
Wendell Herbert McKenzie
John G. Scandalios
Henry E. Schaffer
Ron Ross Sederoff
Charles William Stuber
Earl A. Wernsman

Adjunct professors

Robert R .Anholt
Trudy F. MacKay
Alison Anne Motsinger-Reif
Nadia Singh

Emeritus Professors

Roderick M Rejesus
William Reid Atchley
Stephanie E. Curtis
Eugene Eisen
Charles S. Levings III
Todd Robert Klaenhammer