

Functional Genomics

NC State offers two closely linked interdepartmental graduate programs in Genomic Sciences. All students pursuing degrees in either Bioinformatics and Functional Genomics will take a shared core set of courses that promote breadth of knowledge and encourage interdisciplinary collaboration.

Functional Genomics students focus on laboratory research requiring the collection and interpretation of massive data sets that enhance our knowledge of organismal biology, gene expression, protein and nucleic acid structure and function, and genetic and environmental interactions. Bioinformatics students develop skills to manage and analyze these large and complex "omics" data sets. These two groups of students will be prepared to work seamlessly as parts of teams addressing fundamentally important problems in areas including the biomedical sciences, plant and animal breeding, evolutionary biology, ecology, and toxicology.

Unique and exceptional resources include the Bioinformatics Research Center and the Genome Research Laboratory.

Admission Requirements

Students applying to either the Master's or PhD program in Functional Genomics should have an undergraduate major in the biological or physical sciences, including courses in genetics, biochemistry, and calculus. Previous research experience is a significant advantage.

Master's Degree Requirements

Students take a 15-credit core curriculum shared by all students in the Bioinformatics and Functional Genomics degree programs, followed by additional genomics and elective courses. The non-thesis Master of Functional Genomics requires a minimum of 30 credit hours, while the Master of Science in Functional Genomics requires 36 credit hours and a thesis.

Doctoral Degree Requirements

Students take a 15-credit core curriculum shared by all students in the Bioinformatics and Functional Genomics degree programs, followed by additional genomics and elective courses. The Ph.D. in Functional Genomics requires a total of 72 credits, and all students participate in a journal club, monthly seminar series and research ethics training. All PhD students assemble advisory committees including faculty from both Bioinformatics and Functional Genomics to promote effective interdisciplinary research and collaboration, and many students have co-advisors representing different fields.

Student Financial Support

Fellowships are available through the program, and students may also be supported by research and training grants awarded to our faculty members.

Degrees

- Functional Genomics (MR) (<http://catalog.ncsu.edu/graduate/interdisciplinary/functional-genomics/functional-genomics-mr/>)
- Functional Genomics (MS) (<http://catalog.ncsu.edu/graduate/interdisciplinary/functional-genomics/functional-genomics-ms/>)

- Functional Genomics (PhD) (<http://catalog.ncsu.edu/graduate/interdisciplinary/functional-genomics/functional-genomics-phd/>)

Faculty

Full Professors

Kenneth B. Adler

Jose Miguel Alonso

Prema Arasu

Christopher M. Ashwell

David M. Bird

Russell J. Borski

Rebecca S. Boston

Matthew Breen

Edward Bealmear Breitschwerdt

Dennis T. Brown

James W. Brown

Ignazio Carbone

Margaret E. Daub

Gregg A. Dean

Ralph A. Dean

Ralph E. Dewey

Charlotte E. Farin

Robert Graham Franks

Frederick J. Fuller

John E. Gadsby

Troy Ghashghaei

John R. Godwin

Major M. Goodman

Amy Michele Grunden

Linda Kay Hanley-Bowdoin

Jason M. Haugh

James B. Holland

Jonathan M. Horowitz

Sophia Kathariou

Robert M. Kelly

Matthew D. Koci

Bailian Li

Jonathan S. Lindsey
Hsiao-Ching Liu
Steven Lommel
James W. Mahaffey
Earl S. Maxwell
Steven Edward McKeand
Melissa Schuster Merrill
Eric S. Miller
Paul Edward Mozdziak
David C. Muddiman
Jack Odle
Charles H. Opperman
James N. Petite
Robert M. Petters
Jorge A. Piedrahita
Brian J. Reich
Jean B. Ristaino
Maria C. Sagui
Heike Inge Ada Sederoff
Barbara Sherry
Robert Charles Smart
William F. Thompson
Ross W. Whetten
Brian M. Wiegmann
Qiuyun Xiang
Deyu Xie
Jeffrey A. Yoder

Associate Professors

Nicolas E. Buchler
Michael B. Goshe
Steffen Heber
David S. Lalush
Flora Meilleur
Jonathan W. Olson

Lina Quesada
Marcelo Rodriguez-Puebla
Michael L. Sikes

Assistant Professors

Caitlin S. Heil
Ruben Rellan Alvarez
Benjamin John Callahan
Ilenys Muniz Perez Diaz
Manuel Kleiner
Kurt Marsden
Santosh Kumar Mishra
David Alan Rasmussen
Christina Zakas

Practice/Research/Teaching Professors

Patricia A Estes

Emeritus Faculty

Henry Van Amerson
William Reid Atchley
James W. Brown
Vincent L. C. Chiang
Steven D. Clouse
Stephanie E. Curtis
Barry Goldfarb
Cynthia L. Hemenway
Todd Robert Klaenhammer
David H. Ley
James W. Moyer
Paul E. Orndorff
Ron Ross Sederoff
Wayne Tompkins
Paul L. Wollenzien

Adjunct Faculty

Robert R. Anholt

Trudy F. MacKay