

Genetics

Chair

- Lori L. Wallrath (Biochemistry and Molecular Biology)

Graduate degree: PhD in genetics

Faculty: <https://genetics.grad.uiowa.edu/people/faculty>

Website: <https://genetics.grad.uiowa.edu>

Prospective doctoral students in genetics should have a strong undergraduate background in science, including courses in general genetics, organic chemistry, biochemistry and molecular biology, introductory physics, and mathematics, as well as a strong commitment to genetic research and teaching. Students are able to make up deficiencies in a particular area during their first year of graduate study.

Programs

Graduate Program of Study

- Doctor of Philosophy in Genetics

Courses

Genetics Courses

GENE:4213 Bioinformatics **2,4 s.h.**

Overview of bioinformatics topics, including access to sequence data, pairwise and multiple sequence alignment algorithms, molecular phylogeny, microarray data analysis, protein analysis, proteomics and protein structure analysis; emphasis on each topic includes biological motivation, computational approach (practical and theoretical), and interpretation of output. Prerequisites: BMB:3120 or MICR:3170 or BIOL:2512 or BMB:3110. Recommendations: grade of B-plus or higher in BIOL:2512 or graduate standing. Same as BIOL:4213, IGPI:4213.

GENE:6150 Genetic Analysis of Biological Systems **3 s.h.**

Genetic techniques and approaches for analysis of biological processes; comparison of strengths, weaknesses of a variety of experimental systems.

GENE:6200 Current Topics in Genetics **1 s.h.**

Focus is on a broad topic of central importance to genetics and biology as a whole; invited speakers are distinguished researchers from institutions across the country and within the University of Iowa, their work grounded in genetics, and cover diverse topics using a wide range of genetic model systems and approaches; seminar series. Same as ACB:6200.

GENE:6210 Seminars in Genetics **1 s.h.**

Attendance at weekly forum and presentation of research data to foster oral communication, presentation skills, and collaboration.

GENE:6234 Basic Biostatistical Methods With Genetics Applications **1 s.h.**

Introduction to terminology, fundamental concepts, and methods of biostatistics as applied to genetic research; genetic investigation examples used to illustrate statistical approaches. Same as BIOS:6234.

GENE:6280 Directed Study in Genetics **arr.**

GENE:7191 Human Molecular Genetics **3 s.h.**

Molecular genetic approaches to human disease; the human genome project, linkage analysis, candidate gene screening, special features of inbred populations, triplet repeat expansions, mitochondrial genetics, genetics of complex traits. Requirements: fundamental genetics and molecular biology.

GENE:7301 Graduate Research in Genetics **arr.**