

Genetics

Chair

Lori Wallrath, Ph.D., Professor of Biochemistry and Molecular Biology

Associate Director

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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 scientific research, minimally including coursework in genetics and laboratory research experience. Preferable candidates will have robust training in multiple sciences (e.g. coursework in biology, chemistry, organic chemistry, and math) with experiences through courses or research relevant to molecular genetics (e.g. molecular and cellular biology, biochemistry, biotechnology, evolution, human genetics, population genetics) and/or bioinformatics (e.g. informatics, computer science, engineering, statistics).

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: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.