IOWA

Interdisciplinary Graduate Program in Genetics

August 2026

Information contained in the accompanying pages is a summary of the procedures and curriculum requirements that apply to graduate students in the Interdisciplinary Graduate Program in Genetics.

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I. Introduction

A. Greetings from the Program Director

Welcome to the Interdisciplinary Graduate Program in Genetics. I am delighted that you have selected our program to pursue your PhD in Genetics. We are committed to providing you with a strong scientific foundation and helping you develop success skills that will allow you to achieve your career goals. This graduate student manual contains resources in the program and on campus that are available to you. In addition to these resources, you are always welcome to ask for assistance. With our guidance and your strong work ethic, we are confident that you will achieve your educational goals.

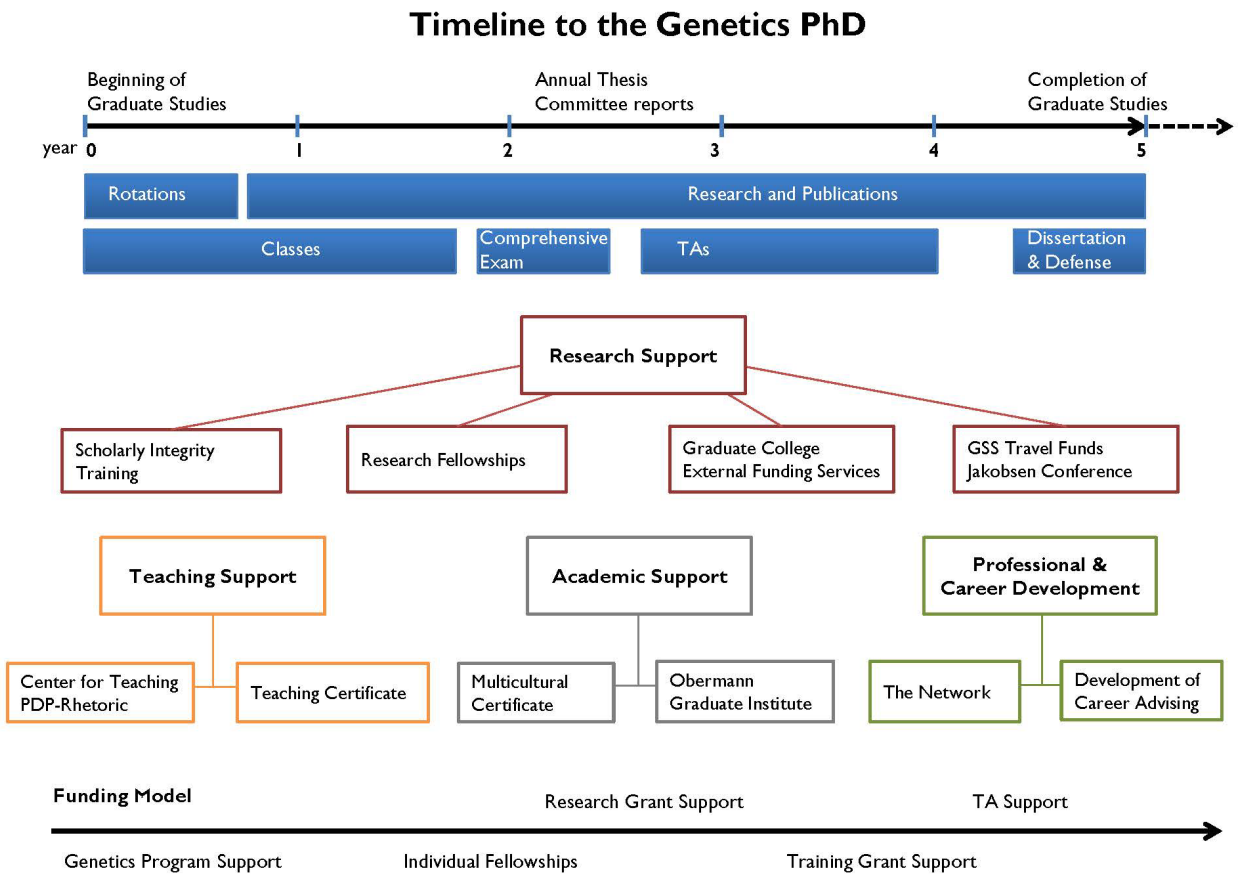
Approximately 2% of the US population holds a PhD degree. Thus, deciding to pursue your PhD in Genetics is honorable and represents a significant step in your education. You will need to make a commitment to achieving this goal and understand that it will fully occupy your life for several years. You should be passionate about research and motivated to gain training in the best research practices. In addition to scientific practices, during the course of your PhD training you will learn many success skills - such as how to critically evaluate data and communicate research to diverse audiences. The knowledge and skills that you gain will benefit you regardless of the career path you pursue after completion of the PhD. The training you will receive will prepare you for a career in academia, scientific industry, clinical trial design and management, teaching, patent law, government policy, science museum directorship, and many others. With countless career opportunities, the future is yours to discover!

This manual is designed to help you navigate your path to a PhD. The flowchart on the following page, developed by the Graduate College, and adapted for the Interdisciplinary Graduate Program in Genetics, depicts some of the major steps and considerations you will encounter along the path.

The guidelines in this manual reflect the operations and requirements of the Interdisciplinary Graduate Program in Genetics, taking into consideration the Graduate College requirements and procedures. As an interdisciplinary program student, you will have an affiliation with your PhD mentor's primary department as well as the program. This arrangement will broaden your experiences and introduce some individual variation in the administration of students in the program. Regardless, this manual serves to standardize the procedures and requirements as much as possible. Please feel free to contact the program office or me with any questions or concerns along the path to your PhD.

I look forward to working with you,
Lori L Wallrath, PhD
Director, Interdisciplinary PhD Program in Genetics
Professor of Biochemistry and Molecular Biology

B. Timeline to a PhD degree in Genetics



Aug 2014

II. Program Administration

A. Contacts

Program Website:
http://genetics.grad.uiowa.edu

Lori L Wallrath, PhD, Program Director
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Office Phone: 319-467-1306

B. Information You Need to Provide to the Program Office

1. Educational Milestones

Students need to contact the Program Office (grad-genetics@uiowa.edu) at each of these milestones:

- When you chose a rotation mentor
- When you choose your mentor
- When you select your committees
- When you schedule a committee meeting
- To submit committee reports
- Anytime your funding source changes
- When you have changes in your committee membership
- As soon as you know the date of your comprehensive examination
- When you identify a Teaching Assistantship
- As soon as you know the semester in which you will defend your PhD thesis
- As soon as you know the date of your PhD thesis defense

2. Non-educational Milestones

Students need to contact the Program Office (grad-genetics@uiowa.edu) at each of these milestones:

- Anytime your name, address, home phone number, cell phone number, or office/lab contact information changes
- When you need Amber to schedule committee meetings
  - If you prefer to schedule your committee meetings independently, immediately upon scheduling the meetings
- As an alumnus, whenever you change of position, institution, name, or contact information

3. Noteworthy Accomplishments

For website updates and to assist the Program Administration with other Genetics Program public relations, promotional, and training grant goals, please notify the Program Office through the Mitosis Monthly Submission Request form when:

Students

- You receive fellowships, grants, or other monetary awards
- You publish papers or book chapters
- You receive any honors or awards
- You receive any positive media attention

Faculty

- You receive moderate or high-level accolades of any sort
- You receive any award related to either teaching or research
- You receive noteworthy grants or other monetary awards
- You publish an article or book particularly noteworthy
- You receive any positive media attention
- Anything else you think may be announcement worthy

C. First contacts according to topic

Although Rob and Amber are both happy to assist you or guide you in the right direction, the table below lists the task distribution for some common Program Office requests.

First Contact	Topic of request
Rob DuBay	Course registration
	Registration changes (adds, drops, and change of hours forms)
	Stipend questions
	Tuition questions
	Budget questions
	U-Bill questions
	Grant and fellowship questions
Genetics Workflow Form	Rotation approval
	TA Request
	TA Report
	Committee membership approval or update
	Lab affiliation
Amber Arey	Rotation evaluations
Use program email	Room reservations
grad-genetics@uiowa.edu	Website updates and corrections
	Travel arrangements and reimbursements
	Meeting arrangements
	Invoice payments (e.g. restaurant or supply bills)
	Reports for committee meetings
	Poster printing
	Course evaluations
Amber and Rob	The educational milestones listed above
Lori Wallrath	Complaints/concerns/problems
Lori and Rob	Policy questions

D. Additional Contacts

Office of the Ombudsperson

The Office of the Ombudsperson (3rd floor of Jefferson Building, 129 East Washington Street) provides conflict management and problem solving to the entire campus community. Their services are confidential, neutral, informal, and independent. Appointments are suggested and can be scheduled by phone, 319-335-3608, or by email, ombudsperson@uiowa.edu. Meetings can take place in person or virtually. Detailed information is available on their website: https://uiowa.edu/ombuds.

III. Financial Support (stipend, tuition, covered fees)

Graduate students in the Genetics Program at the University of Iowa are normally fully supported (stipend, tuition, covered fees) throughout their training in the Program, contingent on satisfactory progress, for a period that normally runs 4 to 6 years (total expected training time). Support commitments are reviewed annually and are normally renewed each year if the student is making satisfactory progress. Whether the student is making satisfactory progress is determined by the student's mentor and Thesis Committee, the Graduate Affairs and Post-Comps Advisory Committees, and the Program Director.

Stipend, tuition, and covered fees are paid by either University and/or departmental funds, and/or by extramural sources. Graduate students receive support through the mechanisms listed below.

The tuition and mandatory fee scholarships are contingent upon remaining a degree-seeking, enrolled graduate student and maintaining your appointment for the entire semester, academic year, or fiscal year. Stipend, tuition, and covered fees are paid by either University and/or departmental funds, and/or by extramural sources. Graduate students receive support through the mechanisms listed below. You may be responsible for repaying tuition if you drop course credits after the beginning of the semester.

Tuition and covered fees include the following: (1) Base tuition and associated mandatory fees (arts & cultural events, mental health, professional enhancement fee for grad students, recreation fee, student activities fee, student health fee, student services fee, student union fee, international student fee [if applicable]); (2) All fees associated with core, required, and directly relevant elective coursework; (3) All fees associated with registration changes, credit hour changes, and other changes that occur in connection with required and directly relevant courses, except for late fees as noted below. The Program will pay for costs related to binding and shipping your final thesis for yourself, your mentor, and the Program.

Fees that are NOT covered by the Program include: (1) key deposits; (2) fees associated with extracurricular or other elective courses not relevant to the program of study in Genetics; (3) international tax withholding fee; (4) English proficiency evaluations; (5) fines, penalties, parking tickets, and other such violation-associated fees; (6) mandatory fees associated with submitting a dissertation, including a degree application fee, a publication and binding fee, and a thesis fee; (7) fees and regalia rental charges associated with participating in commencement; (8) costs associated with additional bound copies of final thesis and (9) late fees due to change of registration without prior notification to the Office.

A. Training Grants

Students in the early years of training may be appointed to federal traineeships, including the Genetics Training Grant (T32). Such appointments are competitive and based on merit, and thus should be listed as honors on your C.V.

Eligible students may be appointed to the Genetics Training Grant. Applications for Trainee positions on the Genetics Training Grant are solicited annually by the Training Grant Primary Investigator(s). Students may be eligible for other T32 training grants, such as the Interdisciplinary Training Program in Pain Research and the Predoctoral Training in Pharmacological Sciences. Applications to training grants normally require submission of specific materials by certain deadlines, and interested students are encouraged to consult with their mentor, the Genetics Program Director, and Program Directors of other potential T32 funded programs.

B. Genetics Program Graduate Research Assistantships

Students in the first year of training may be appointed to graduate research assistantships and awarded tuition scholarships, from funds allocated to the Genetics Program by the Graduate College.

C. Other Graduate Research Assistantships

Students may be appointed to a graduate research assistantship from a research grant or may receive funding from the department in which their research is being performed or may be awarded support from funds provided by the Graduate College.

D. Teaching Assistantships

Students may be appointed to a graduate teaching assistantship from funds provided indirectly through affiliated departments and programs (e.g. Biology).

E. Other Means of Support and/or External Funding

Students may receive support from other sources, including, Iowa Recruitment Fellowships, Graduate College Fellowships (Post Comprehensive Research Award, Summer Fellowship, Ballard Seashore Dissertation Fellowship, etc.), and a variety of nationally competitive NIH, NSF, and other individual awards.

Students are encouraged to solicit external funding. The University of Iowa provides numerous resources to assist students in the identification and pursuit of extramural funding. Two excellent consultation resources are: (1) The Graduate College Office of Graduate Success (https://grad.uiowa.edu/grad-success), and (2) The Division of Sponsored Programs (http://dsp.research.uiowa.edu/). The Scientific Editing and Communication Core in the Carver College of Medicine is also a great resource for editing your fellowship applications. https://medicine.uiowa.edu/sercc/resources

The Graduate College sponsors a Fellowship Incentive Program for UI graduate students (including students of the Genetics Program) and offers a stipend incentive to

apply for some competitive grants and fellowships (see https://grad.uiowa.edu/fellowship-incentive-program).

Students who receive extramural fellowships of $10,000 or more are eligible for a Supplement for External Fellowship from the Carver College of Medicine. Students should contact the Program and the Office of Graduate and Postdoc Studies to apply for the fellowship.

F. Summer Registration

Graduate students in the Program normally do not register for summer term. There are four exceptions to this: (1) first-year students, some of whom will take courses during their first summer in order to maintain progress in satisfying the required core and elective coursework, (2) students taking the Comprehensive Examination during the summer term, (3) students who are defending their PhD during the summer term, and (4) students who receive a Graduate College Scholarship which pays for Summer tuition. Outside of these exceptions, students will not register for the summer. (This policy is broadly in effect for all the bioscience-related programs at the University of Iowa.)

G. Tax Information

To receive tax advice, consult a professional income tax preparer. Information regarding how your paycheck may be impacted by taxes can be found on the University Human Resources website under Tax Information.

Students should be aware that a tightening of IRS regulations has led to FICA withholding for summer stipend checks for students not registered for the summer term. This income loss can be substantial, depending on the student's particular circumstances.

For students who are on a training grant or other fellowship (e.g., T32, Post-comp fellowship, Summer fellowship, Ballard & Seashore, etc.), it is recommended that you talk with a tax professional to determine the impact your appointment may have on your tax obligation. Information regarding taxes of Fellowship payments can be found on the Fellowship Payment Rules webpage. Students should be aware that Fellowships are taxed differently than Graduate Research Assistant appointments. Information can be found on the University's Human Resources Tax Information website and on this IRS website: https://www.irs.gov/taxtopics/tc421.

If you are awarded Federal financial aid through the Office of Student Financial Aid, you should check with that office regarding the potential impact of training grant appointments and other fellowship's stipend and tuition on your financial aid award (loans, etc.). You may contact the office via email (financial-aid@uiowa.edu), telephone (319-335-1450) or walk-in (2400 UCC).

H. University Bills – Program Specific Set-up Requirements

Students may NOT enroll in automatic U-bill payment methods offered by the University. Prohibited programs include payroll deduct of your U-bill from your paycheck and automatic payment from your checking/savings accounts. The Program Office does not have direct control of your tuition payments at all points in your academic career. Tuition payment delays are common for a variety of reasons.

If you enroll in these programs, your tuition and stipend bill (sometimes over $6,000) could be automatically deducted from your paycheck or your bank account. While the University of Iowa would eventually reimburse you for the tuition and fees deducted, most students do not have an extra $6,000 available to cover these expenses.

IV. Curriculum

This section outlines required courses for Genetics PhD students, some example schedules, and policies and procedures. There are four distinct curriculum paths within the Interdisciplinary Graduate Program in Genetics:

- Genetics PhD
- Genetics PhD, computational subtrack
- Genetics MSTP
- Genetics MSTP, computational subtrack

For an example plan of study, go to Sample Plans under student information on MyUI.

Courses listed under the Electives and Seminars headings should not be considered restrictive. If a student is interested in a course and their advisor believes it will enhance their training in relation to their research, students can submit a Curriculum Change/Exception Request through the Genetics Student Milestone Workflow Form which will seek approval from the Curriculum Committee. It is important for students keep the Program Office informed so information can be recorded in the students record. The request should include the course number and title, the course description, a copy of the syllabus if available, and a note from your advisor indicating how this course will enhance your training.

A special section of STAT:3510 Biostatistics has been created for the Genetics Program. When registering for this course, select the section indicating Restricted to Genetics PhD students. This section will have no discussion section or homework requirements. Final grade (A – F) will be determined by exam grades only. Students are encouraged to complete the homework assignments. The specific section number may change from semester to semester (e.g. STAT:3510:0A19 vs STAT:3510:0A21).

All students must inform the Program Office if they make registration changes (i.e. add or drop courses) following the deadline provided by the program. After the semester begins, no student will be allowed to drop a course without authorization by the program.

A. General Requirements (Hours, GPA, etc.)

Students, except MSTP students, are required to take 15 semester hours each semester during their first two years in the program. MSTP students should work with the Program Office to determine the correct number of semester hours to register for. Additional genetics or other biology, chemistry, mathematics, and physics courses will increase the number of hours taken toward the degree. These courses should be selected by students after consultation with their advisers and/or thesis committee. Such course programs will be tailored to fit individual students' research interests, abilities, and career objectives. As additional courses become available, the Curriculum Committee will add them to the groups of electives. In addition, the student must meet Graduate College requirements (minimum of 72 hours of registration, plan of study, etc.).

The student must maintain a Graduate College Program grade point average (GPA) of 3.0. Research, independent study, and S/U graded courses taken during a student's graduate training do not count in the GPA.

In calculating the GPA required for purposes of meeting the Program's 3.0 requirement, plus and minus grades will be considered. Grades received for courses below the 3000 level (in the instance of a student making up deficiencies) should not count in the student's GPA; if the grade is a D or F, the student is required to repeat the course. Students who repeat a course will have both grades counted in calculating the GPA required for purposes of meeting the Program's 3.0 requirement.

B. Academic Probation

The student shall be placed on academic probation by the Graduate College if, after completing 9 hours of graded (A – F) graduate work at The University of Iowa, the student's cumulative grade-point average falls below 3.00. If, after completing 9 more semester hours of graded (A – F) graduate work at the University of Iowa, the student's cumulative grade-point average remains below 3.00, the student shall be dropped from the degree program and denied permission to reregister within any Graduate College doctoral degree program. However, if a student’s cumulative grade-point average rises to 3.00 or above, the student will be returned to good standing and no longer on probation.

C. Requirements for all students

All students are required to register for GENE:6200: Current Topics in Genetics every Spring semester. Students that have not passed their comprehensive exam will receive a letter grade. Students who have passed their comprehensive exam will be graded on a S/U basis.

All students are required to register for GENE:6210: Seminars in Genetics every semester of their PhD training.

D. Scholarly Integrity / Responsible Conduct of Research (SI/RCR)

In addition to the Collaborative Instruction Training Initiative (CITI) completed during the students first year, students will enroll in SI/RCR courses their second year in the Genetics Program. MSTP students will enroll in these courses during the summer before entering the PhD portion of their studies.

Students must remain compliant with CITI & SI/RCR training as required by the University's RCR Training Plan, including Re-certification. This mandatory recertification typically requires students to re-take CITI training before Fall of their 5th year of studies and 2 additional modules of SI/RCR training (BMED 7270 & 7271) during fall and spring of their 6th year. MSTP students will re-take CITI and SI/RCR training in compliance with the training dates established in the MSTP.

E. ESL Requirement for Foreign Students

All foreign students for which an English proficiency evaluation is required must pass to the "B" level on the "University Request for Evaluation for TA Certification" form by the end of their 2nd year. If the student does not, they will be making insufficient progress and may be dismissed from the Program.

English proficiency requirements can be found on the English as a Second Language (ESL) Credit Program webpage of Languages, Linguistics, Literatures, and Cultures. Students with a TOEFL iBT score lower than 100 (or 5.0 taken after January 2026) or an IELTS overall score of 8.0 or higher are required to complete an English Placement Evaluation (EPE) before their first registration for classes. All students admitted using DuoLingo (DET) or PTE test scores will be required to take the EPE upon arrival to campus. An appointment will be made by International Student and Scholar Services (ISSS) for you to take the EPE. Depending on the results of the evaluation, students may be required to take one or more English as Second Language courses.

Graduate students who test into ESL courses are required to register for at least one ESL course each semester. Students who fail to do so will not be allowed to register for the following session. Graduate students must earn a grade of C- or higher to satisfy the requirement. This requirement is monitored by the Graduate College.

There is a $120 fee for the EPE which the student is responsible for.

F. Genetics PhD Curriculum Track

1. Required Genetics Core Courses (12 – 13 sh)

BMED:5207	FA	Principles of Molecular and Cellular Biology	3 sh
GENE:6150	FA	Genetic Analysis of Biological Systems[1]	3 sh
STAT:3510	SP	Biostatistics *or*	3 sh
BIOS: 4120	FA/SP	Introduction to Biostatistics	3 sh
GENE:7191	SP even yr	Human Molecular Genetics *or*	3 sh
BIOL:5172	FA/SP	Evolution *or*	4 sh
BIOL:3713	FA	Molecular Genetics *or*	3 sh
BIOL:4333	SP	Genes and Development	3 sh
		Total	**12 – 13sh**
GENE:6200	SP	Current Topics in Genetics taken each year	1 sh
GENE:6210	FA/SP	Seminars in Genetics	1 sh
		Total	**15 sh**

2. Electives (7 sh chosen from the following courses)

Biological Based Electives			
BIOL:5172	FA/SP	Evolution	4 sh
BIOL:3212	FA/SP	Bioinformatics for Beginners[2]	3 sh
BIOL:3713	FA	Molecular Genetics	4 sh
BIOL:4333	SP	Genes and Development	3 sh
FRRB:7001	SP	Molecular and Cellular Biology of Cancer	3 sh
GENE:7191	SP	Human Molecular Genetics	3 sh
IMMU:6241	FA	Writing a Scientific Proposal	2 sh
MICR:6268	SP	Biology and Pathogenesis of Viruses	2 sh
MMED:6220	FA	Mechanisms of Cellular Organization	3 sh
MMED:6227	SP	Cell Fate Decision	1 sh
NSCI:7235	FA	Neurobiology of Disease	3 sh
PCOL:6225	SP	Growth Factor Receptor Signaling	1 sh
RHET:7500	FA	Communicating Science in the Digital Age	2 or 3 sh
Computational Based Electives			
BIOL:4386	SP	Intro to Scientific Computing	3 sh
BIOS:4510	FA/SP	Data Science Foundations in R	2 sh
BIOS:5120	SP	Regression and ANOVA for the Health Sciences	3 sh
BIOS:7330	FA	Advanced Biostatistical Computing	3 sh
BIOS: 7700	SP	Special Topics: Machine Learning for Biomedical Data	3 sh
BMB:4310	FA	Computational Biochemistry	3 sh

[1] Must satisfy this requirement during the first year as a graduate student. In exceptional cases, credit will be allowed at the discretion of the Curriculum and Graduate Affairs Committees for an equivalent advanced course taken previously.
[2] Not allowed as an elective if previous bioinformatics coursework has been taken.

BME:5335	SP	Computational Bioinformatics	3 sh
CS:5430	SP	Machine Learning	3 sh
IGPI:5450	FA	Machine Learning	3 sh
IGPI:6480	FA	Knowledge Discovery	3 sh
MICR:6282	SP	Grad Applied Computational Biology	2 sh
STAT:3200	FA/SP	Applied Linear Regression	3 sh
STAT:4580	SP	Data Visualization and Data Technologies	3 sh

3. **Seminars (3 sh chosen from the following courses)**

ACB:6237	FA/SP	Critical Thinking in Biochemistry and Molecular Biology	1 sh
ACB:6238	FA/SP	Critical Thinking in Genetics	1 sh
ACB:6239	FA/SP	Critical Thinking in Cell Biology	1 sh
ACB:6248	FA/SP	Critical Thinking in Development	1 sh
ACB:6249	FA/SP	Critical Thinking in Cellular Physiology	1 sh
BIOL:6188	SP	Seminar in Writing in the Natural Sciences	2 sh
MMED:6280	FA/SP	Critical Thinking in Molecular Medicine	1 sh
PCOL:6015	FA/SP	Topics in Pharmacology and Neuroscience	1 sh

4. **Required SI/RCR Courses (0 sh)**

BMED:7270	FA	Scholarly Integrity/Responsible Conduct of Research 1	0 sh
BMED:7271	SP	Scholarly Integrity/Responsible Conduct of Research 2	0 sh

G. Genetics Program Subtrack: Computational Genetics

The explosion of big data science generated in the fields of genetics and molecular biology has generated a demand for sophisticated computational methods to extract meaningful information. Computational genetics has emerged as an important discipline in the biosciences fostering a connection between genetics and the computational sciences. To meet the needs of students interested in this area of research, a subtrack was formulated within the Interdisciplinary Graduate Program in Genetics that leads to a PhD in Genetics with a specialization in Computational Genetics.

Due to the present shortage of researchers with computation biology/bioinformatics skills, the training of scientists whose primary career focus is computational biology/bioinformatics has been identified by NIH as an urgent need. This area includes the use of theory, computer implementation and application to the broad spectrum of molecular research in biological and biomedical fields including molecular sequence and structure, molecular function, cellular function, physiology, genomics, genetics, computational modeling, population biology, mathematical biology, and analysis of complex systems. The demand for bioinformatics professionals is pronounced among academia and biotechnology and pharmaceutical companies. The requirements are for individuals with substantial training in computer science and are well a foundational understanding of biology, including genetics. Thus, there is a

significant demand for individuals who can communicate with both geneticists and computer scientists to accomplish impactful research goals.

Essential details concerning the subtrack are summarized below. For more information or to express interest in becoming a Computational Genetics subtrack student, please contact the Program Director.

Computational Genetics Curriculum
All students in the Computational Genetics subtrack, regardless of their disciplinary origin, are required to master a set of core concepts in: (1) genetics, (2) computing, (3) statistics, (4) bioinformatics tools and applications, and (5) responsible conduct. These requirements can be met by enrolling in upper-level undergraduate courses prior to matriculation or by a combination of undergraduate and graduate courses selected to address individual student needs after matriculation. Satisfactory completion of the prescribed courses is to be accomplished during the first two years of the program. Current topics courses in areas of direct impact to the thesis may be taken as electives in post-comp years. Courses outlined in sections 1 and 2 below are recommendations, students should consult with their faculty advisor and choose course appropriate for their research training. Students taking courses not listed in sections 1 and 2 must submit a request for curriculum change through the Genetics Student Milestone workflow form.

1. **Required Genetics Core Courses (12 – 13 sh)**

BMED:5207	FA	Principles of Molecular and Cellular Biology	3 sh
GENE:6150	FA	Genetic Analysis of Biological Systems[1]	3 sh
STAT:3510	SP	Biostatistics *or*	3 sh
BIOS: 4120	FA/SP	Introduction to Biostatistics	3 sh
GENE:7191	SP even yr	Human Molecular Genetics *or*	3 sh
BIOL:5172	FA/SP	Evolution *or*	4 sh
BIOL:3713	FA	Molecular Genetics *or*	3 sh
BIOL:4333	SP	Genes and Development	3 sh
		Total	**12 – 13sh**
GENE:6200	SP	Current Topics in Genetics taken each year	1 sh
GENE:6210	FA/SP	Seminars in Genetics taken each semester	1 sh
		Total	**15 sh**

2. **Computing (6 sh)**

BIOS:5510	FA	Biostatistical Computing *or*	2 sh
CS:3210	SP	Programing Languages and Tools *or*	3 sh
CS:5110	FA	Introduction to Informatics	3 sh
		Total	**6 sh**

3. **Bioinformatics Electives**
(12 sh chosen from computational based electives)

Computational Based Electives			
BIOS:4510	FA/SP	Data Science Foundations in R	2 sh
BIOS:5120	SP	Regression and ANOVA for the Health Sciences	3 sh
BIOS:7330	FA	Advanced Biostatistical Computing	3 sh
BIOS: 7700	SP	Special Topics: Machine Learning for Biomedical Data	3 sh
BMB:4310	FA	Computational Biochemistry	3 sh
BME:5335	SP	Computational Bioinformatics	3 sh
CS:5110	FA	Introduction to Informatics	3 sh
CS:5430	SP	Machine Learning	3 sh
IGPI:5450	FA	Machine Learning	3 sh
IGPI:6480	FA	Knowledge Discovery	3 sh
MICR:6282	SP	Grad Applied Computational Biology	2 sh
STAT:3200	FA/SP	Applied Linear Regression	3 sh
STAT:4580	SP	Data Visualization and Data Technologies	3 sh
		Total	**12 sh**

H. Genetics Program: MSTP Curriculum

MSTP students affiliating with the Genetics PhD Program have some unique characteristics that call for specialized curriculum requirements. These students enter the Genetics program with 3 years of medical school coursework completed.

Compliant to the MSTP MOU regarding preclinical medical curriculum included in MSTP students' plan of study. The following courses are approved by the Graduate College for inclusion in total number of PhD hours required to graduate (72 sh). MSTP students must complete a minimum of 41 sh of additional graduate schoolwork.

Medical Gross Anatomy	5 sh
Foundations of Medical Science	5 sh
Mechanisms of Health and Disease I	5 sh
Mechanisms of Health and Disease II	5 sh
Mechanisms of Health and Disease III	5 sh
Mechanisms of Health and Disease IV	5 sh
Grant Writing Basics: Predoctoral Applications	1 sh
Total	**31 sh**

MSTP General Track Curriculum

MSTP students are not required to take BMED:5207 Principles of Molecular & Cellular Biology or additional elective courses. The seminar requirement will be satisfied by taking MSTP:8515 MSTP Topics. MSTP students are required to take the remaining core curriculum:

1. **MSTP General Track Required Genetics Core Courses**

GENE:6150	FA	Genetic Analysis of Biological Systems[1]	3 sh
STAT:3510	SP	Biostatistics *or*	3 sh
BIOS: 4120	FA/SP	Introduction to Biostatistics	3 sh
GENE:7191	SP even yr	Human Molecular Genetics *or*	3 sh
BIOL:5172	FA/SP	Evolution *or*	4 sh
BIOL:3713	FA	Molecular Genetics *or*	3 sh
BIOL:4333	SP	Genes and Development	3 sh
		Total	**9 – 10 sh**
GENE:6200	SP	Current Topics in Genetics taken each year	1 sh
GENE:6210	FA/SP	Seminars in Genetics	1 sh
		Total	**15 h**

MSTP Computational Track Curriculum

For MSTP students seeking a computational subtrack, Mechanism of Human Disease 1 & III will be used to satisfy the genetics course. They are required to take the Genetics Core Courses. Courses outlined in sections 3 and 4 below are recommendations, students should consult with their faculty advisor and choose course appropriate for their research training. Students taking courses not listed in sections 3 and 4 must submit a request for curriculum change through the Genetics Student Milestone workflow form.

2. **MSTP Computational Track Required Genetics Core Courses**

GENE:6150	FA	Genetic Analysis of Biological Systems[1]	3 sh
STAT:3510	SP	Biostatistics *or*	3 sh
BIOS: 4120	FA/SP	Introduction to Biostatistics	3 sh
		Total	**6 sh**
GENE:6200	SP	Current Topics in Genetics taken each year	1 sh
GENE:6210	FA/SP	Seminars in Genetics	1 sh
		Total	**15 sh**

3. **MSTP Computational Track Computing (6 sh)**

BIOS:5510	FA	Biostatistical Computing [3]*or*	2 sh
CS:3210	SP	Programing Languages and Tools *or*	3 sh
CS:5110	FA	Introduction to Informatics	3 sh
		Total	**6 sh**

4. **MSTP Computational Track Bioinformatics Electives**
   (6 sh chosen from computational based electives)

Computational Based Electives			
BIOS:4510	FA/SP	Data Science Foundations in R	2 sh
BIOS:5120	SP	Regression and ANOVA for the Health Sciences	3 sh
BIOS:7330	FA	Advanced Biostatistical Computing	3 sh
BIOS: 7700	SP	Special Topics: Machine Learning for Biomedical Data	3 sh
BMB:4310	FA	Computational Biochemistry	3 sh
BME:5335	SP	Computational Bioinformatics	3 sh
CS:5430	SP	Machine Learning	3 sh
IGPI:5450	FA	Machine Learning	3 sh
IGPI:6480	FA	Knowledge Discovery	3 sh
MICR:6282	SP	Grad Applied Computational Biology	2 sh
STAT:3200	FA/SP	Applied Linear Regression	3 sh
STAT:4580	SP	Data Visualization and Data Technologies	3 sh
		Total	**6 sh**

V. Individual Development Plan (IDP)

The IDP is a tool to assist trainees with career and professional development. The IDP provides a platform for trainees to identify professional goals, assess competencies relevant to these goals, and develop a plan to achieve specific objectives related to their career goals. The trainee developed IDP becomes a platform for discussion with their Ph.D. mentor and the post-comprehensive exam Advising Committee and serves to foster communication important for the trainee's professional development.

- Basic steps for Trainees
  - Conduct a self-assessment
  - Define your time commitment to various components of the graduate experience.
  - Assess your skills and interests.
  - Use outside resources to get feedback on your skills, strengths, and weaknesses. The following self-assessment tools provide a nice resource for this self-assessment.
    - http://myidp.sciencecareers.org

[3] May be taken multiple times with Curriculum Committee approval if content and focus are different, e.g. Programming with R vs. Programming with SAS

        - https://www.grad.uiowa.edu/individual-development-plan
    - Survey opportunities with mentor
    - Identify career opportunities that interest you.
    - Define differences between your current skills and additional skills needed for your identified career objectives.
    - Prioritize areas for development and discuss strategies for addressing objectives with your mentor.
    - Write/update your IDP, share it with your mentor, and review together
    - Identify specific skills that you need to develop in the short-term (e.g. 1 – 2 years)
    - Define strategies to develop each skill. Use the "SMART" principle:
        - **S**pecific – is it focused and unambiguous
        - **M**easurable – define metrics to know whether the objective is achieved
        - **A**ction-oriented – identify concrete steps to achieve the objective.
        - **R**ealistic – is the strategy feasible.
        - **T**ime bound – define a deadline.
    - Discuss draft with mentor
    - Implement the plan, and revise as needed
    - Review your plan with your mentor on a regular basis. Completion of the IDP is required on a yearly basis and after completion must be submitted to the Program no later than July 1.
    - Revise as necessary.
- Basic steps for mentor
    - Be familiar with training requirements and opportunities.
    - Discuss opportunities with trainee.
    - Review your trainee's IDP and help revise. Provide written comments at the end of the document.
    - Establish regular periods for IDP review and revisions, as needed but at least annually.

VI. Laboratory Rotations

Purpose

The purpose of the rotation system is to: (1) provide students with information that will help them in their selection of a PhD mentor, (2) experience new research techniques, and (3) gain knowledge in a new research area. It is also intended to educate students about more than one approach to doing genetics research and provide them with personal contacts with as many of their peers and mentors as possible.

A. The Rotation System

1. All students, except MSTP students, will be required to rotate among three laboratories during their first year in graduate school. MSTP students may be directly

admitted to a laboratory if they previously rotated with a faculty member within the Genetics Program and will be affiliating with that laboratory.

2. The choice of laboratories will be determined by the student in consultation with the Graduate Affairs Committee and is subject to approval by the head of the laboratory. The committee will encourage the student to speak to as many faculty members as necessary to make an informed decision that takes into account the student's likely research interests. Students will be encouraged, but not required, to do one rotation in a laboratory that may not be directly related to their probable areas of research interest.

3. The student and the rotation mentor will be required to submit a Rotation Evaluation to the Program Office at the end of each rotation.

4. Students will register for research credit in each Fall and Spring semester (see Section III. F. for more information on summer registration). It is expected that students devote a significant portion of their time to their rotation research. Faculty members in whose lab the student rotates should establish in advance the method by which the student's work will be evaluated. This may include an oral presentation or written report.

5. When registering for courses students must select the director of the program as the instructor for their research course.

6. For students beginning work with the start of the Fall semester, the rotation schedule will be set up to permit ~12 weeks in each laboratory (e.g., August 24 – November 13; November 16 – February 12; and February 15 – May 7). The middle rotation includes 1 week for winter break (e.g. December 24 – January 1). Students should discuss with their rotation sponsor an acceptable arrangement for time away from the laboratory.

7. For the first rotation selection, students should contact faculty based on their interview visit, reading of faculty profiles and websites, and publications listed in PubMed and Google Scholars. It is encouraged that students start contacting potential labs for the first rotation early in the summer. Students should choose the first rotation lab by August 1st and no later than the last day of the week of orientation

8. The second and third rotations should be scheduled approximately halfway through the prior rotation.

9. Near the end of the third rotation, students will give a short presentation during the GENE:6210 Seminars in Genetics course on the rotation of their choice. Students can present from any of their three rotations, with the rotation mentor’s approval.

10. The student must affiliate with the laboratory of their new PhD mentor upon completion of the third rotation, at which time the PhD mentor will assume responsibility for the student's stipend and tuition support.

11. In the event a student does not affiliate with a lab after three rotations, a fourth rotation is possible. These exceptional cases are handled in consultation with the Program Director. If a student does not affiliate with a lab after the 4th rotation, they will be dismissed from the Program.

12. If a Computational Subtrack student did not gain wet lab experience during an undergraduate or masters experience it is strongly recommended they acquire some experience in a wet lab through rotations. If a rotation mentor does not conduct wet lab research, the student should work with their mentor to gain the experience through collaboration of another laboratory.

VII. Teaching

A. Teaching Requirement

Students are expected to gain experience in teaching and to establish their credentials in teaching excellence. Students are required to serve as a teaching assistant (TA) in at least one “major” or two “minor” Teaching Assistantships (TAships) in different courses during their graduate career. MSTP students are also required to complete one minor TAship. Each teaching assignment must be 1/4-time or greater. The major and minor designations reflect the amount and types of teaching responsibilities are incorporated into the TAship. It is recommended that students complete their teaching assignments are completed by the end of the 3rd year. The Graduate Affairs Committee determines which Teaching Assistantships fulfill this requirement; therefore, students must seek approval of TA positions through the Genetics Student Milestone Workflow Form. Students who are ready to pursue a TAships may either contact the Graduate Affairs Committee Chair for suggestions or directly approach an instructor of a course they wish to teach. Regardless, all TAships must have approval of the Graduate Affairs Committee prior to the student signing any agreements or officially committing to the teaching assistantship with a department or instructor. Courses commonly used to meet the TA requirement and their designation as major or minor can be found on the Genetics Program SharePoint site.

B. Office of Graduate Teaching Excellence

Additional instruction in teaching, designed specifically for graduate students, is offered through the Office of Graduate Teaching Excellence. In partnership with the College of Education and the Graduate College, OGTE enables all University of Iowa doctoral students to complement their home discipline’s curriculum and research training with the development of effective teaching skills. OGTE provides doctoral students with the knowledge and skills needed for success in the classroom when they accept academic positions upon graduation and/or after completion of post-doctoral

training. OGTE's goal is to provide students who intend to enter academia with the tools and preparation to be effective teachers.

C. Graduate Certificate in College Teaching

The Graduate Certificate in College Teaching is offered through the University of Iowa Graduate College. In some cases, Genetics Program students will be allowed to complete the certificate's requirements during their time in the program. See Appendix III: Certificate in College Teaching at the back of this Graduate Student Manual for more information.

VIII. Establishing a PhD thesis committee and holding the first meeting

Requirements for the Timing of the Comprehensive Examination

Students typically complete their comprehensive examination (oral defense of their proposals) by the last day of finals week of their second year in the program. Exceptions may be made in the case of illness, family crisis, or other serious circumstances that could interfere with a student's ability to follow the schedules outlined. Students who fail to meet this deadline may not be eligible to continue in the program. In the rare instance of a student enrolling in a semester other than fall, the deadline will be at the end of four semesters (not including summer semester).

Students will begin their comprehensive exam process in consultation with their research advisor, typically by the end of their second semester of their training in the program. The students PhD thesis committee members are selected by the first day of the second academic year in the Program (i.e. August 22nd of the students second year). The student must schedule a pre-comp PhD thesis committee meeting approximately six months prior to anticipated date of the comprehensive exam (e.g. November 15th of the students second year). If possible, the ad hoc member should attend as well.

The research adviser will not take part in the comprehensive examination. Therefore, the student and research adviser will select another member of the thesis committee, or the ad-hoc member of the comprehensive examination committee, to be the chair of the comprehensive examination committee.

Four of the five PhD thesis committee members must be members of the Interdisciplinary Graduate Program in Genetics, and one member must be a tenure-track University of Iowa Graduate Faculty that is not a member of the Interdisciplinary Graduate Program in Genetics. To represent a reasonable diversity of research interests, no more than three members may be from any one department. In case of PhD thesis committees with more than five members, the limitation of no more than three members from any one department remains.

The research adviser does not participate in any aspect of the comprehensive examination. Instead, an additional ad hoc member must be chosen from the Genetics

Program Faculty to participate in the comprehensive exam in place of the PhD research adviser. The proposed composition of the PhD thesis committee and the comprehensive exam committee must be submitted to the Graduate Affairs Committee for approval.

The pre-comps thesis committee meeting will be chaired by the PhD thesis adviser. The student must notify the Program Office before the pre-comps meeting takes place. In preparation for this meeting, at least two weeks prior to the meeting the student will submit the completed thesis proposal to the committee (see details below) for review. The thesis proposal will have significant input from the thesis advisor. This meeting, and the thesis proposal itself, will NOT be evaluated as part of the comprehensive examination. Rather, this meeting will achieve several major goals. First, it will encourage the student to think about the thesis project early in their training. Second, it will allow the student to practice writing a proposal (with adviser's help) and to present it to the committee. Third, it will inform the comprehensive examination committee of the thesis topic, so this committee can make an informed decision regarding relatedness of the comprehensive examination proposals. Fourth, it can form the basis of an individual fellowship application, which is strongly encouraged.

It is highly recommended that the thesis proposal is prepared in the format (and on actual forms, if available) of a doctoral fellowship application appropriate to your research and eligibility. This will serve the purpose of the thesis proposal AND it will facilitate submission of the fellowship application after polishing in response to your thesis committee feedback. Length of this proposal is 20 double-spaced pages, 11-point Arial font, not including figures and references, OR as dictated by the fellowship application instructions. The thesis proposal should be distributed to the thesis committee two weeks prior to the scheduled meeting.

IX. The Comprehensive Examination

A. Requirements for the Timing of the Comprehensive Examination

1. Timeline

Required Deadlines:

These are the required deadlines to be met PRIOR TO THE LAST DAY OF FINALS WEEK of SPRING SEMESTER of the SECOND YEAR. The student must notify the office of the exam at least three weeks prior to the exam date.

Comprehensive Exam Schedule

There is a **60-day limit** from date student is notified of accepted abstract to submission of the final proposal. Students must work with program office and their committee to make these deadlines.

Timeline **Dates below are examples of the last possible dates for each step using May 10 as the last day of finals week (assuming abstracts are accepted with no revisions required).**					
First day of Spring semester	February 19	February 26	April 27	Three weeks prior to exam	Last day of finals week
Notify Program Office of exam plans and complete Plan of Study	Submit abstracts to Committee	Student notified of committee decision in 1 week	Submit final proposals to Committee two weeks prior to oral defense	Notify Program Office	Last day to take Oral Exam

*If a date falls on a weekend, then the next Monday is the deadline.

B. Requirements for Membership of Comprehensive Examination Committee

1. The comprehensive examination committee shall consist of five members who will be the same as members of the thesis committee, with the exception that the thesis adviser is replaced by an ad hoc member on the comprehensive examination committee. Four of the comprehensive examination committee members must be members of the Interdisciplinary Graduate Program in Genetics and one member must be a tenure-track University of Iowa Graduate Faculty who is not a member of the Interdisciplinary Graduate Program in Genetics. To represent a reasonable diversity of research interests, no more than three members may be from any one department.

2. The ad hoc member will be chosen by the student and the student's PhD thesis adviser with the approval of the Graduate Affairs Committee (GAC). The ad hoc member ordinarily will not be a permanent member of the thesis committee but can remain so after the comprehensive exam if desired. Students must leave sufficient time (at least two weeks) to achieve GAC approval of their committee membership prior to the pre-comps meeting.

3. The student and their thesis adviser will select one member of the comprehensive examination committee to act as chair during administration of the comprehensive examination. It is recommended that a faculty member familiar with the Interdisciplinary Graduate Program in Genetic comprehensive exam procedures be chosen as the chair.

4. The proposed comprehensive examination committee, with ad hoc member and chair designated, will be submitted to the Graduate Affairs Committee for approval through the Genetics Student Milestone Workflow form.

5. The comprehensive examination committee must be in place prior to submission of abstracts.

6. The thesis adviser will not be present during administration of the comprehensive examination.

C. Comprehensive exam proposals

1. Semi-off Topic

The chair of the comprehensive exam committee will meet with the student to discuss the examination format. The student will identify two semi-off topic abstracts, one of which is chosen by the committee to be developed into a full proposal for the exam. Semi-off topic means that at least one of the following criteria must differ substantially from the student's proposed PhD thesis research: (1) specific biological problem or process, (2) organism, and (3) technique or methodology. Final determination of what is sufficiently semi-off topic will be made by the comprehensive examination committee, and the student may consult with the comprehensive exam committee chair for more specific guidance in preparation of the abstracts. Abstracts must be submitted by Feb 19th. Each abstract is 4 double-spaced pages with one-inch margins, 11-point Arial font. When developing abstracts, students should keep in mind that committees will typically use the written proposal to guide their discussion during the oral exam, but questions during the oral exam are not limited to the proposal and can include general topics of genetics.

2. General Guidelines for the proposal

The chair will distribute the abstracts to the committee. The student and the comps committee chair must notify the Program Administrator by email that abstract submittal has occurred and specify the date of submittal. After reviewing the abstracts (one week deadline), the student will be notified if the abstracts are accepted and if so, which one of the abstracts is to be expanded into a detailed proposal to serve as the basis for the comprehensive examination. If one of the two abstracts is deemed unsatisfactory, then the student must improve this abstract to meet the committee's standards within a time frame specified by the committee. If both abstracts are deemed unsatisfactory by the examination committee, then the student is required to prepare two new abstracts within a time frame to be specified by the committee. If the second set of abstracts are also deemed unsatisfactory by the examination committee, then this will be considered as a fail for the student and the student must wait 4 months prior to the second and last attempt at the comprehensive examination (see section G-5).

The basic ideas and concepts in the written proposal should be original thoughts from the student. However, the student is free to consult with faculty members and other graduate students concerning the details of certain techniques or the feasibility of a particular approach. The input of faculty should be limited to factual information. The thesis adviser should not be involved in preparation of the written proposal. In addition, students are encouraged to organize "mock oral comprehensive exams" involving other graduate students and postdoctoral fellows as part of the preparation process.

Since the proposal is a major component of the examination, it should be of the highest quality. A poor proposal can (in exceptional cases) be rescued by a good oral examination. In preparation of the full proposal, the student must meet the two-week

timeline to allow the committee sufficient time to consider the proposal. Failure to do so will result in failure of the comprehensive exam.

There is a sixty-day limit between the notification of which abstract to expand, and the final submission of the complete Comprehensive Examination proposal. This is a maximum limit and can often be done in a shorter time.

Full proposals will be developed in the format of any national grant format (typically an NIH F30/31/32, NSF, AHA) or a 20-page double spaced limit (excluding figures and references) using 11-point Arial font.

D. Proposal Preparation

The construction of an experimentally feasible research proposal is a test of both imaginative and critical ability of the candidate. The following statements provide additional information and direction for a graduate student submitting a proposal for the comprehensive examination.

The proposal should include the following:

1. A concise summary of the pertinent information upon which the proposal is based, adequately but not exhaustively referenced. This summary should logically develop a point of view to be used in stating the hypothesis. It should not contain lengthy quotations from the literature.

2. A concise and precise statement of the proposal.

3. A concise statement of the experimentation to be performed including the purpose of each experiment, a general summary of protocol, and interpretation of the anticipated results.

4. A statement of the significance of the project.

5. The maximum length of the proposal is 20 pages, double-spaced with 11-point Arial font, excluding figures and references.

Proposals will be submitted to the examination committee at least two weeks prior to the scheduled date of the examination. An oral examination will be conducted on whatever is submitted; there is no opportunity for revision.

E. Criteria for Evaluation of the PhD Comprehensive Examination

1. Clarity of written proposal: Is it easy to see what is being presented? Is the background information clear enough to understand the problem? Is the proposed solution to the problem developed in a logical sequence? Are highly specialized terms or abbreviations explained?

2. Importance of proposal: Is the problem relatively minor or would its solution result in an important contribution? Is the problem so narrowly conceived that only a few approaches are possible to solve it? Is the project too vast to be solved by alternative sets of experiments? What is the value of a solution to the problem? What are the biological or practical implications of the research?

3. Creativity: Is the approach entirely new in respect to the problem? Are the ideas novel and imaginative or ordinary? Does the solution require the development of a new technique or instrument or a new way to use existing equipment? Knowledge of the subject and methods: Does the student understand the genetics of the problem area; what is known and what is not? Is the student's knowledge superficial or is it relevant to solving the problem? Is the student sufficiently aware of the limitations of the methods used to solve the problem?

4. Suitability of methods: Are the proposed methods the best ones? What are alternatives? Does the student recognize experimental difficulties in the selection or use of methods? Would these methods be suitable for a solution to the problem in a reasonable period of time?

5. Reasoning and data interpretation: Can the student interpret all reasonable data so as to come to a conclusion or to suggest another experiment? Have alternative interpretations been considered sufficiently? When presented a set of data, can the student interpret it properly?

6. Ability to explain difficult or unusual concepts: This pertains to the student's oral performance rather than the written proposal which was evaluated according to criteria listed above. Is the student understandable or confusing in explaining difficult material?

7. Knowledge of material peripheral to the abstract: Are there serious gaps in the student's knowledge of genetics when questioned about material somewhat removed from the abstract?

F. Oral Comprehensive Examination

The oral examination should be taken no later than the last day of finals week of Spring semester of the second year. If abstracts or full proposals are judged unsatisfactory or with reservations throughout the process, students may take the oral examination during the summer. Summer tuition will apply. The length of the oral exam is approximately two hours and will cover the full proposal prepared for this purpose, and any other areas of foundational topics in genetics. Following successful completion of the comprehensive examination and courses in the plan of study, the committee will certify the student to the program as a candidate for the PhD degree.

A formal report of the student's performance on the comprehensive examination will be placed in his/her permanent file. This report should be sufficiently detailed and approved by all members of the committee for the first and, if applicable, the second attempt (see section G-5).

G. Protocol for Taking the Oral Comprehensive Examination

1. It is the responsibility of the student to notify the Genetics Program Office of the intention to take the comprehensive examination by the first day of Spring semester. The student must also notify the Program Office of the exam date at least three weeks prior to the exam date. The Program Office completes and submits the Plan of Study along with the Request for Doctoral Comprehensive Examination to the Graduate College.

2. If desired, it is the responsibility of the Comprehensive Examination Committee Chairperson to obtain the student's file (from the Program Office), in advance of the examination. The student's file must be kept confidential.

3. Examinations are considered passed when at least 2/3 (66%) of the committee evaluates it as satisfactory. Based on a five-person committee, four of the five committee members must vote positively ("satisfactory") that a student has passed the examination for the student to receive a passing grade. If two members vote unsatisfactory, the grade reported to the Graduate College will be an "unsatisfactory,". If one member votes "reservations" and one member votes "unsatisfactory", the grade reported will be reservations. See Section XII. Doctor's Degrees of the Graduate College Manual of Rules and Regulations for additional explanation.

4. If the student receives "reservations". The Comprehensive Exam Committee will set the specific conditions required for lifting the reservations and the time limit within which these conditions must be met. The conditions and time limits must be presented to the student in writing and must be sent by the Program Office to the Graduate College no more than 3 working days after the exam is taken. If the conditions are not met satisfactorily in the specified time, the comprehensive exam decision will be "unsatisfactory", and will be considered a fail for the student. It is the Comprehensive Exam Committee Chairperson's responsibility to notify the Program Office in writing if the reservations have been satisfactorily met or not within the specified timeline. This result must be sent by the Program Office to the Graduate College.

5. If a student fails the Comprehensive examination, the student may be allowed, with the advisor's support and approval of the program, to begin the comprehensive exam process again. A second attempt cannot be started until a minimum of four months has passed from the date of failure, which is according to the University's policy.

6. For the second attempt, an additional committee member will join the comprehensive examination committee and is expected to be an active participant during the oral comprehensive examination; **The new member will have a formal satisfactory/unsatisfactory vote**. Thus, with a six-person voting committee, three "unsatisfactory" votes in this second attempt will be considered an "unsatisfactory" and the grade reported to the Graduate College. Refer to Examining Committees of Section XII. of the Graduate College Manual of Rules and Regulations.

This additional member will be assigned by the Director of the Interdisciplinary Graduate Program in Genetics and should be a member of the Graduate Affairs committee (GAC) to ensure that similar evaluation criteria among students. The limitation of no more than three members from any one department is maintained when considering this sixth, ad hoc, comprehensive examination committee member.

A student must pass the comprehensive exam by the second attempt to remain in the PhD program.

H. Additional Recommendations in Preparing for the Oral Comprehensive Examination

The student is expected to know the most important literature related to the proposal. One recommendation is to identify the 10 most important papers from your reference list and make notes regarding the salient information in those papers, so that you can quote (author/date) as you respond to questioning during your oral exam. For the remaining papers, identify key points of information that are relevant to your proposal.

1. Refresh your foundational knowledge of genetics by reviewing a standard textbook in Genetics. You should already know these principles, but it may have been some time since you studied them, and this approach will make them more accessible to you when you are on your feet in front of the committee. You will not remember everything, but you should be able to remember some important basics and demonstrate a working knowledge of them.
2. The subject of the oral exam will be based on your written comprehensive exam proposal (not your thesis proposal) and can include questions on foundations of genetics.

I. Responsibilities of the comprehensive examination committee chair

1. Read and understand the comprehensive exam procedures outlined in this handbook.

2. Provide consultation and general direction about procedures, deadlines, formats, and relatedness to thesis.

3. Refrain from providing guidance about specific experiments proposed, though some general guidance as to proposed approaches or scope may be provided.

4. Provide consultation regarding changes to the proposal after the abstract has been approved. The student should base their proposal on the abstract, with flexibility to make minor changes in specific proposed experiments. However, sometimes a more major change is required, usually based on further reading, to generate a defensible proposal — these should be discussed with the committee chair.

5. Enforce submission deadlines, receive submissions from the student, circulate proposals to committee members, assimilate feedback from committee members, and correspond with the student throughout the process and inform the program office of key benchmarks (such as abstract submission and approval).

6. Ensure that committee members are aware of electronically reporting their evaluation (pass, fail, or reservations) through the electronic workflow system. A grade of pass with reservations **is not possible**.

X. The PhD thesis

A. The PhD thesis committee

As described above, the PhD thesis committee, which is chosen and approved by the beginning of classes of the second year (about August 18), will be chaired by the research adviser.

Four of the five thesis committee members must be members of the Genetics PhD Program, and one member must be a tenure-track University of Iowa Graduate Faculty that is not a member of the Interdisciplinary Graduate Program in Genetics. To represent a reasonable diversity of research interests, no more than three members may be from any one department.

The names of the proposed thesis committee members must be submitted to the Graduate Affairs Committee for approval through the Genetics Student Milestone Workflow form.

The first committee meeting will be held approximately six months prior to the comprehensive exam, typically before December15th. In preparation for this meeting, the student, with the help of the adviser, will prepare the thesis proposal and distribute it to the thesis committee. (See Section IV.A. for more information about preparation of the thesis proposal.) During this meeting the thesis research plan will be presented and the format for the upcoming comprehensive exam will be discussed. The ad hoc member chosen to replace the thesis advisor on the comprehensive exam committee, will normally attend this meeting.

The thesis committee serves as an advisory body for preparation of the thesis. The thesis committee's responsibilities are as follows:

1. To assist the student in deciding on a plan of study.

2. To meet with the student at least annually to review progress in research (and courses) and provide a written report to the Graduate Affairs Committee (copy of the report should be sent to the student).

3. To administer the oral dissertation examination (thesis defense) upon completion of all other degree requirements.

4. The student, thesis advisor or thesis committee may request a meeting at any time.

B. Protocol for the PhD thesis examination

1. It is the responsibility of the student and research adviser to notify the Genetics Program Office of the place, date, time of the thesis examination and a thesis title at least 3 weeks prior to the thesis exam and no later than at least one week prior to the Graduate College request for exam deadline. The Program office must submit the Request for Final Examination and the thesis title to the Graduate College.

2. The student must give the final draft to all members of the thesis committee at least 2 weeks before the final examination. Failure to meet this deadline may require re-scheduling the final examination so that all committee members have at least two weeks to read the thesis.

3. When a thesis chapter includes work from others, it is the responsibility of the student and research adviser to include an introductory page indicating the specific contribution of the student. This is particularly important when the work is, or is prepared to be, a published article.

4. Although the Genetics program does not establish a firm minimum number of publications as requirement to be awarded the Ph.D. degree, it is the expectation of the program that all students will have their thesis research published in peer-reviewed journals. When no thesis-related research has been published or submitted for review at the time of the thesis defense, the research advisor and thesis committee should include a brief description of the causes for this anomaly to the program office together with a final copy of their dissertation.

5. The final PhD examination consists of a formal seminar presented to the public, including opportunity for questions, comments, and discussion. The seminar will be followed by a private meeting with the thesis committee for the final thesis defense.

6. The PhD degree is not awarded until the thesis is deposited with the Graduate College and signed by the thesis committee with all required revisions being completed before this signing.

7. Graduates of the Interdisciplinary Graduate Program in Genetics are required to submit a final electronic copy of their dissertation to the Genetics Program office.

Thesis Exam Schedule

4-6 months prior to exam	4-6 weeks prior to exam	2 weeks prior to exam
Meet with Thesis Committee	Notify Program Office of date, time, place and thesis title	Submit final draft of thesis to the Thesis Committee

XI. Dismissal of students from Interdisciplinary Graduate Program in Genetics

A. Committee responsibilities

Two committees are responsible at different stages for the primary review of the progress of individual graduate students. These are initially the Graduate Affairs Committee and subsequently the student's thesis committee. The Graduate Affairs Committee will also be responsible for advising the student and reviewing the student's progress if at any time it becomes necessary for the student to form a new thesis committee.

B. Procedures

If, in the judgment of the responsible committee, the student is not making satisfactory progress toward the PhD degree, the procedure shall be as follows:

1. The student will be advised by the committee of potential dismissal and will be given an opportunity to meet with the committee and defend his/her work. Following any such meeting the committee will forward to the Director and to the student its written conclusions and recommendations. These recommendations may be for no action, for a probationary period to be followed by a new review, or for dismissal.

2. If the committee recommends dismissal, the Executive Committee must review the matter with the student and with the recommending committee. For example, the Executive Committee could resolve some cases by helping the student form a new Thesis Committee. Any member of the Executive Committee who participated in the original recommendation shall abstain in subsequent decisions.

3. If, after the review of the Executive Committee, the student continues to believe that dismissal is improper, the student may request in writing that an ad hoc Appeals Committee be established to consider the case. In this request, the student will nominate five faculty members and two graduate students in the Interdisciplinary Graduate Program in Genetics for the Appeals Committee.

4. From among those nominated, the Executive Committee shall appoint three faculty members to the Appeals Committee and designate a chairperson. The Executive

Committee shall also appoint one of the nominated graduate students to be a reviewer who will meet with the Appeals Committee in all proceedings but will not vote.

5. The Appeals Committee chairperson shall convene the committee promptly. The committee will give the student an opportunity to discuss his/her grievances with it and will review all pertinent materials.

6. Upon completion of its review, the Appeals Committee shall communicate its findings and decision in writing to the student and to the Executive Committee. These reports should include the major considerations in the decision.

Note: This procedure does not apply to an appeal of a decision on passage or failure of the comprehensive examination or PhD Thesis defense.

XII. Best Practices for Graduate Students and their Research Advisors

The progress, development, and success of a graduate student hinges on the commitment of both the student and the research advisor. Basic principles of best practices in mentoring and graduate student life appear in the two lists that follow. Graduate students should be aware of what is necessary for their success and their advisors likewise should be aware of practices that promote their students' best interests.

Although the concepts of commitment and responsiveness underlying the lists of expectations apply to all disciplines, the specifics of these principles vary considerably among the biological sciences, physical sciences, social sciences, and humanities. The following guidelines are generally construed and are generally appropriate for students in the Genetics Program, but not every detail will apply to every student.

A. Expectations of Graduate Students

1. A graduate student has the primary responsibility for successful completion of his or her degree. A graduate student should be committed to his or her graduate education and should demonstrate this by efforts in the classroom and in research. A graduate student is expected to maintain a high level of professionalism, self-motivation, engagement, excellence, scholarly curiosity, and ethical standards.

2. A graduate student should meet regularly with the research advisor and provide updates on the progress and results of ongoing research.

3. A graduate student should be knowledgeable of the policies and requirements of the graduate program, the graduate college, and the institution. The student should strive to meet these requirements, including teaching responsibilities.

4. A graduate student should work with the research advisor to develop a thesis/dissertation project. This will include establishing a timeline for each phase of the work. The student should strive to meet the established deadlines.

5. A graduate student should work with the research advisor to select a thesis/dissertation committee. The student should meet with this committee at least annually (or more frequently, according to program guidelines) and be responsive to the advice of and constructive criticism from the committee.

6. A graduate student should discuss policies on authorship and attendance at professional meetings with the research advisor. The student should work with the advisor to submit all relevant research results that are ready for publication in a timely manner prior to graduation.

7. A graduate student should attend and participate in meetings, seminars and journal clubs that are part of the educational program.

8. A graduate student should seek opportunities for career enhancement, including individual fellowships. The student should work with the research advisor in the preparation and submission of the fellowship applications.

9. A graduate student should contribute to maintaining a research environment that is intellectually stimulating, emotionally supportive, safe, and free of harassment.

10. A graduate student must participate in the institution's Responsible Conduct of Research Training Program and practice those guidelines in conducting thesis/dissertation research.

11. A graduate student should discuss policies on work hours, sick leave and vacation with the research advisor or graduate director. The student should consult with the advisor in advance of any planned absences.

12. A graduate student should acknowledge primary responsibility to develop a career following the completion of the doctoral degree. The student should seek guidance from available resources, including the research advisor, the post-comps advising committee, career counseling services, thesis/dissertation committee, and any other mentors.

13. A graduate student should comply with all institutional policies, including academic program milestones. The student should comply with both the letter and spirit of all best practices and policies of the institution.

B. Expectations of Research Advisors

1. The research advisor should be committed to the education and training of the graduate student as a future member of the research community.

2. The research advisor should meet one-on-one with the student on a regular basis. The advisor should provide timely feedback on the student's written work to facilitate ongoing progress on the thesis/dissertation.

3. The research advisor should be knowledgeable of the requirements and deadlines of his/her graduate program as well as those of the institution, including teaching requirements and human resources guidelines. The research advisor should guide the student in these areas to ensure academic and professional success of the student.

4. The research advisor should help to plan and direct the graduate student's project, set reasonable and attainable goals, and establish a timeline for completion of the project. The research advisor should anticipate conflicts between the interests of externally funded research programs and those of the graduate student and should help keep these interests from interfering with the student's thesis/dissertation research.

5. The research advisor should help a graduate student select a thesis/dissertation committee. The advisor should help assure that the committee meets at least annually (or more frequently, according to program guidelines) to review the graduate student's progress.

6. The research advisor should discuss authorship policies regarding papers with the graduate student. The advisor should acknowledge the graduate student's contributions and work with the graduate student to present and publish his/her work.

7. The research advisor should encourage the graduate student to attend scientific/professional meetings and make an effort to secure and facilitate funding for such activities.

8. The research advisor should encourage the student to seek appropriate individual fellowships and work with the student in the preparation and submission of the fellowship applications.

9. The research advisor should provide an environment for his/her graduate students that is intellectually stimulating, emotionally supportive, safe, and free of harassment.

10. The research advisor should discuss intellectual policy issues with the student regarding disclosure, patent rights and publishing research discoveries.

11. The research advisor should not require the graduate student to perform tasks unrelated to his/her academic and professional development.

12. The research advisor should provide career advice and assist in finding a position for the graduate student following his/her graduation. The advisor should provide honest letters of recommendation and be accessible for advice and feedback on career goals.

13. The research advisor should lead by example and facilitate the training of the graduate student in complementary skills needed to be a successful researcher, such as oral and written communication, grant writing, lab management, animal and human research policies, the ethical conduct of research, and scholarly professionalism. The advisor should support the student's opportunities for teaching to meet the requirements of the program.

14. The research advisor is primarily responsible for providing or securing financial resources for the graduate student to facilitate the student's thesis/dissertation research. Advisors have the prerogative to pay their student's mandatory fees associated with submitting a dissertation, including a degree application fee, a publication and binding fee, and a thesis fee. However, they are not required to do so.

XIII. Scientific Ethics: Guidelines/Other Resources

A. Policy on Authorship of Publications

The following guideline has been suggested by Virginia Commonwealth University, Dean S. G. Bradley.

To merit authorship, an individual should:

- Contribute significant ideas and experimental design to the project,
- Take part in the actual experimentation and data analysis,
- Be able to present and defend the work at a scientific meeting. (Exceptions may be made when one author has carried out a unique, sophisticated study or analysis.)

Students should also read "Ethical Obligations of Authors" in Accounts of Chemical Research 18(12), pp. 356-57 (1985).

This is one example of a guideline; the major point to remember is that in the event of allegations of scientific fraud, all authors can be held accountable.

B. Scientific Misconduct

The U.S. Public Health Service has a formal policy dealing with misconduct. It is described in a special July 19, 1985, issue of the NIH Guide to Grants and Contracts. At the very least we must respect this statement. It says in part:

It is the policy of the PHS to maintain high ethical standards in research and to investigate and resolve promptly and fairly all instances of alleged or apparent misconduct.

As defined by the policy, "misconduct" is: (1) Serious deviation from accepted practices in carrying out research or in reporting the results of research. This includes fabrication, falsification, or plagiarism of data. (2) Material failure to comply with Federal requirements affecting specific aspects of the conduct of research; e.g. the protection of human subjects and the welfare of laboratory animals.

Misconduct does not include errors of judgment, errors in the recording, selection, or analysis of data or differences in opinions involved in the interpretation of data.

Scientific misconduct is grounds for dismissal from the Genetics PhD Program.

C. Academic Misconduct

Any form of cheating or plagiarism in respect to curricular requirements is grounds for dismissal. Plagiarism is taking another's ideas, words, or creative works and presenting them as your own, or presenting them without proper attribution (giving credit to the original source).

D. Sexual Harassment

The University of Iowa has clearly stated guidelines and regulations pertaining to sexual harassment. A copy of these rules is available and is considered required reading for all incoming students. The Genetics Program will follow and adhere to these guidelines and regulations.

E. Counseling Resources

We need to be constantly vigilant about not only the scientific health and status of our students and faculty, but also about their mental health. Graduate school is an extremely stressful time for students and faculty alike. We would like to remind our students and faculty that if concerns arise about their mental health status, for whatever reason, that it is appropriate to seek help. The University offers counseling services for students at University Counseling Service (3223 Westlawn, 335-7294) and for faculty at Faculty Services (5101A D, 335-2085). Individual faculty or students should feel free to contact those services directly or, if they feel it appropriate, to talk with the Director of the Genetics Program or any member of the Graduate Affairs Committee about the possible need for interventions.

XIV. Grievance

A. Graduate College Academic Grievance Procedures

https://grad.uiowa.edu/academics/manual/academic-grievance-procedure

Please see the appendix for more information on Procedures for Academic Grievances, unethical conduct, and violations of the Graduate College and Iowa Code of Conduct of Student Life.

For a graduate student, the particular grievance procedure to employ for a complaint will depend upon the area involved (student life, academic difficulties, employment, etc.). Generally, graduate students first explore how to pursue a grievance with their advisor/mentor of record or with an appropriate departmental/program administrator (department head, program director, and/or graduate coordinator). However, if students are uncomfortable or dissatisfied using this route, the CCOM Associate Dean for Graduate and Postdoctoral Studies and/or the Associate Dean for Academic Affairs of the Graduate College will counsel them on the options available. In addition, the Counseling Service, the Office of the Ombudsperson, and the Office of Civil Rights Compliance will counsel graduate students on a confidential basis and will assist them in selecting an appropriate grievance procedure.

XV. Food & Beverages for Meetings

The Genetics Graduate Program does not expect students to provide food and/or beverages for Committee meetings, Comprehensive Exams, or defenses. Further the lack of food/beverages will not be looked at negatively by those attending. This policy is supported by the Graduate Student Senate Resolution Addressing Food at Meetings.

XVI. Pay and Time Off

Successful graduate education in the sciences does not begin and end with the usual academic calendar, but rather is a full-time occupation. Reasonable vacation periods are certainly appropriate, but long or repeated absences are generally not permitted. Vacations or any other planned absences should be discussed in advance with the research mentor/PI in whose laboratory a student is rotating or working.

Kirschstein-NRSA trainees and fellows are eligible for other types of leave (vacations and holidays, sick leave, parental leave). Please refer to NIH Parental Leave Policy for NRSAs https://grants.nih.gov/grants/guide/notice-files/NOT-OD-18-154.html

Currently enrolled University of Iowa Ph.D. students with a 25% or more appointment are employed as:

- Teaching Assistants (FT19)
- Research Assistants or
- Graduate students appointed on federal training grants or federal fellowships

A. Paid Leaves

Ph.D. students are entitled to University-designated holidays and up to (15) working days per fiscal year of absence without pay deduction. All paid leave must be scheduled with the approval of the research mentor. Ph.D. students may be absent for the University-designated holidays unless the mentor specifically requires the Ph.D.

student to work. At such time, the mentor and the Ph.D. student shall schedule alternate paid time off. Mentors will make an effort to minimize holiday work for Ph.D. students and if they require work on a holiday, shall provide Ph.D. student(s) with no less than thirty (30) days written notice, whenever feasible.

1. University-designated Holidays:
    - New Year's Day
    - Dr. Martin Luther King, Jr.'s Birthday
    - Memorial Day
    - Independence Day
    - Labor Day
    - Thanksgiving Day
    - Friday after Thanksgiving Day
    - Christmas Day
    - A day before or after Christmas Day

Monday will be recognized as a holiday for all holidays occurring on a Sunday and Friday for all holidays occurring on a Saturday.

Any further paid leave should have the additional approval of the DEO/Director, which may be granted without financial support.

2. Sick Leave

Ph.D. students may be absent due to illness without loss of pay not to exceed (18) days during a twelve-month fiscal year appointment.

If a Ph.D. student has exhausted paid sick leave due to illness, they may request an unpaid leave of absence which will be granted at the sole discretion of the Program and mentor, and subject to any relevant policies of the Graduate College.

3. Family Illness Leave

PhD students may use available sick leave for care of and necessary attention to ill or injured members of the immediate family or for parental leave including birth and adoption.

4. Bereavement Leave

Ph.D. students may use available sick leave for three (3) workdays when a death occurs in the employee’s immediate family.

Ph.D. programs may grant additional paid leave - such leave may be granted provided the Program and mentor determine that the Ph.D. student is able to meet the time and effort obligations reflected in the percentage of appointment over the full term of the student’s appointment.

B. Unpaid Leave of Absence

A Ph.D. student may be granted an unpaid leave of absence during the term of their appointment, upon request to and at the sole discretion of the Program and mentor. Unpaid leave of absences will take effect after all available paid and sick leave has been exhausted.

The Program and mentor shall authorize leave requests in accordance with the provisions of the Family and Medical Leave Act of 1993 for qualifying individuals.

XVII. Resources for Civil Rights & Compliance

The Genetics PhD Program is committed to civil rights and compliance. For more information and resources, see the following website: https://ocrc.uiowa.edu/

XVIII. Appendices

A. Appendix I: Committees of the IDGP in Genetics Program

1. Executive Committee

Assists and advises the Director in the administration of program. Composed of: (1) the Director of the Interdisciplinary Graduate Program in Genetics (appointed by the Graduate College Dean in one year renewable terms), (2) one member of the Program elected at large (for a 3-year term); 3) one student members of the Program elected by the students (for a rotating 2-year term), (4) the PI of the Training Grant (if distinct from the Program Director), (5) the chair of the Admissions Committee, (7) the chair of the Graduate Affairs Committee, (8) the chair of the Curriculum Committee, (8) the chair of the Recruitment and Outreach Committee, and (9) the chair of Post-Comps Advising Committee. The last four positions will be appointed by the Program Director. For all committees, term appointments made by Program Director and consultation with the executive committee.

2. Admissions Committee

Reviews and evaluates qualifications of applicants; invites outstanding applicants to interview; recommends admission decision to program Director.

3. Graduate Affairs Committee

Advises first-year students on requirements and registration; assists first-year students in lab selection and arranging rotations; advises students until they have a designated PhD mentor and a thesis committee; may advise students who are in the process of changing PhD mentors; monitors progress of all students and reviews GPAs once per semester; notifies students of academic probation; handles all student appeals

4. Curriculum Committee

Conducts yearly review of curricula. Evaluates new courses for appropriateness of inclusion. Recommends addition (and category) or deletion of courses to Director.

5. Recruitment and Outreach Committee

Coordinates program activities aimed at expanding and communicating with a broad and diverse applicant pool, at conferences, visits to campuses, recruitment fairs, and networking with alumni.

6. Post-Comps Advising Committee

Meets at least annually with each post-comps student to evaluate research and publication progress and advise on career planning.

7. Seminar Committee

The course director for Current Topics in Genetics solicits nominations from the faculty at large and selects from the pool to ensure a seminar speaker program with broad representation. In addition, the student representative solicits nominations from all students in the program; the student vote for a student-represented seminar speaker and play a major role in hosting the speaker

8. Retreat Committee

The committee consists of two faculty and two students. Schedule external speakers, invite alumni speakers; select oral presentations from abstracts; organize all aspects of the retreat schedule

9. Faculty Membership Committee

Reviews new faculty applications before submission to Executive Committee; monitors faculty participation and makes recommendations to the Director regarding faculty 3-year reappointments

10. Website Committee

Responsible for Program website content, design, and presentation

11. Student Activities Committee

Responsible for organizing and hosting social events for the students and faculty of the program

B. Appendix II: Certificate in College Teaching

The Graduate Certificate in College Teaching is offered through the University of Iowa Graduate College. For some students, completion of this certificate is a possibility during their time in the program, with eligibility determined on a case-by-case basis. Prior to affiliating with a lab, a student who is interested in pursuing the Graduate Certificate in College Teaching must discuss their interest with their potential advisor and complete the Certificate in College Teaching Completion Agreement for Genetics Students (see Appendix). Advisors have the prerogative to allow or deny students to pursue the certificate. The Certificate in College Teaching Completion Agreement for Genetics Students requires signatures from the student, advisor and program.

The Graduate Certificate in College Teaching requires students to complete courses in the 3 categories listed below, and meet a minimum of semester hours of approved coursework. Previous teaching experience will not be permitted to waive any of these requirements. For additional information, full requirements, and to enroll in the certificate program, visit the College Teaching, Graduate Certificate website.

Category 1
Provides an overview of basic instructional issues and methods in college teaching. The work requires students to engage in discipline-specific thinking as they consider their own teaching situations. Full list of available courses and semester hour requirements are on the College Teaching, Graduate Certificate website.

Note: By completing one Category 1 course, Genetics students enrolled in the Graduate Certificate in Teaching fulfill 1 of the 5 seminar credits required in the standard Genetics Program curriculum.

Category 2
Requires students to complete practicum courses under the guidance of two different professors. Prior or current experience as teaching assistant does not count toward this requirement.

Note: By completing the Practicum in College Teaching, Genetics students enrolled in the Graduate Certificate in Teaching may fulfill the TAship requirement in the standard Genetics Program curriculum, provided that the conditions outlined in the Certificate in College Teaching Completion Agreement for Genetics Students are met and approved by the Graduate Affairs Committee.

Category 3
Students develop a full portfolio that demonstrates their skills and competencies in teaching, research, and service. The portfolio requires sample syllabi, a statement of teaching philosophy, samples of assignments and student work, and reflective essays on critical issues in teaching in higher education.

Certificate in College Teaching Agreement for Genetics Students

Student: _____

Research Mentor: _____

For details of the Certificate, the student and mentor should consult the GCCT website: https://education.uiowa.edu/services/office-graduate-teaching-excellence-ogte/graduate-certificate-college-teaching

The student plans to complete the Graduate Certificate in College Teaching by enrolling in the courses checked below.

Category 1: Coursework (2 courses/6 sh minimum)

At least one of the following courses MUST be taken:

- ☒ EDTL/EPLS/GRAD/RCE/PSQF:7385 Teaching and Learning in Higher Education 3 sh
- ☒ GRAD/PSQF:6217 Seminar in College Teaching 3 sh
- ☒ EPID:7200 Teaching in Epidemiology 3 sh
- ☒ SOC:7010 Teaching Sociology 3 sh
- ☒ PSQF:6205 Design of Instruction 3 sh

One of the following courses MAY be taken:

- ☒ PSQF:6211 Universal Design and Accessibility for Online Learning 3 sh
- ☒ PSQF:6215 Web-Based Learning 3 sh
- ☒ PSQF:6216 Tools and Utilities for Online Teaching 3 sh

Note: By completing one Category 1 course, Genetics students enrolled in the Graduate Certificate in College Teaching fulfill 1 of the 5 seminar credits required in the standard Genetics Program curriculum.

Category 2: Required Teaching (2 practica/3 sh minimum)

Please fill out the semester hours you plan to take for each practicum (1-2 sh per practicum).

☐ EDTL/EPLS/RCE/PSQF:7380 Practicum in College Teaching supervised by a College of Education faculty member. Number of practica:_____, Total sh: ___

☐ GRAD:7400 Practicum in College Teaching, supervised by a faculty member outside of the College of Education. Number of practica:_____, Total sh: _____

By completing the Practicum in College Teaching, Genetics students enrolled in the Graduate Certificate in College Teaching may fulfill the TAship requirement in the standard Genetics Program curriculum, provided they satisfy both the practicum requirements and at least two of the following:

- Hold weekly office hours
- Lead a weekly discussion section
- Contribute to materials for assessment (quizzes, exams, clicker questions, etc.)

Note: Like all TA positions, the use of a teaching-certificate practicum to fulfill a TA requirement must be approved in advance by the Graduate Advising Committee.

Category 3: Required Portfolio (3 sh minimum)

☐ EALL:7475 PhD ePortfolio in College Teaching 3 sh

Tuition Agreement

Tuition for Teaching Certificate Coursework will be paid by:

☐ Student

☐ Mentor

☐ Other (describe) _____

By signing below, I agree to complete the Graduate Certificate in College Teaching as prescribed above.
Student Signature:_____Date: _____

By signing below, I agree to the student completing the Graduate Certificate in College Teaching as prescribed above.
Mentor Signature:_____Date: _____

The Genetics Program approves this plan and consents to student completion of the Graduate Certificate in College Teaching.
Program Signature:_____Date: _____

C. Appendix III: Academic Grievances

CCOM Office of Graduate and Postdoctoral Studies (OGPS)

Procedures for Academic Grievances, Unethical Conduct, and Violations of the Graduate College and Iowa Code of Student Life

(Date of Preparation: July 25, 2024)

I. General Principles

The University of Iowa Code of Student Life, published each year as an insert to *The Daily Iowan*, governs student non-academic conduct (including graduate and postdoctoral students).

The Graduate College Manual of Rules and Regulations governs graduate and postdoctoral student academic conduct.

Research misconduct, such as the fabrication or falsification of data and plagiarism, is defined by the US Health and Human Services (HHS) Office of Research Integrity (definition of misconduct). Egregious acts of research misconduct may also result in additional action by the University of Iowa as stated in section II-27.6, Ethics in Research, of the University's Operations Manual.

Graduate students in CCOM-affiliated departments and programs (including the Biomedical Science Program and its 7 subprograms; the Biochemistry and Microbiology Departmental Programs, and the 4 biomedical interdisciplinary programs (Genetics, Human Toxicology, Immunology, and Neuroscience) are expected to adhere to all sets of policy guidelines. Postdoctoral students in CCOM laboratories are expected to adhere to all sets of policy guidelines. Graduate students may be sanctioned or dismissed from their program in the event of policy violations. Postdoctoral students may be sanctioned or dismissed from their position in the event of policy violations.

Please contact the CCOM Associate Dean of Graduate and Postdoctoral Studies, your Graduate Program Director or Coordinator, or your Departmental HR Administrator, for further information about these policies.

II. Academic Grievances

The grievance procedure to employ for a complaint will depend on the area involved (student life, academic difficulties, employment, faculty). Generally, students first explore how to pursue a grievance with their mentor, PI, or with program leadership (Director of Graduate Studies, Program Director, Program Coordinator/Administrator).

An attempt should be made to resolve grievances at the lowest level, before escalating to higher levels. Nearly all grievances can be resolved at the level of the faculty member and student, or at the level of the Department. However, if students are uncomfortable or dissatisfied using this

route, the Associate Dean of Graduate and Postdoctoral Studies (ADGPS) can be contacted. *(see figures at the end of this document for quick visual reference of grievance workflows)*

If consultation with the Associate Dean of Graduate and Postdoctoral Studies does not lead to an appropriate or satisfactory resolution, the Associate Dean for Academic Affairs in the Graduate College will counsel students on further options. The Graduate College has established two complaint procedures:

1. Informal Academic Complaint Procedure of the Graduate College
2. Formal Academic Grievance Procedure (AGP) of the Graduate College

In addition, the Counseling Service, the Office of the Ombudsperson, and the Office of Civil Rights Compliance (OCRC) will counsel graduate students on a confidential basis and will assist students in selecting an appropriate grievance procedure. The UI Postdoctoral Association is a resource for postdoctoral students.

III. Student Grievances about Faculty Members

If a student has a grievance about a faculty member, they should first try to resolve the grievance directly with the faculty member, per the policies in II above. If that process is not available or successful, the grievance should be filed by emailing biomedgrad-postdoc@uiowa.edu in order to trigger a department-level review of the faculty member. If students are uncomfortable or dissatisfied using this route, the Associate Dean of Graduate and Postdoctoral Studies (ADGPS) can be contacted.

If consultation with the ADGPS does not lead to an appropriate or satisfactory resolution, the Associate Dean for Academic Affairs in the Graduate College will counsel students on further options, per II above. Beyond that, the grievance can be escalated to the Office of the Provost or the Board of Regents. In CCOM, grievances towards faculty members will also be reviewed by the Associate Dean for Faculty Affairs, and further follow-up from that Office may occur. HR sensitive faculty issues will remain confidential.

IV. Academic Integrity

Integrity is a core value of the University of Iowa and the CCOM. At the University of Iowa, we hold ourselves to the highest standard of professional and scholarly ethics, are accountable for our decisions and actions, exercise responsible stewardship of the resources with which we are entrusted, and treat one another with honesty and fairness. **Academic integrity** embodies the principles of honesty, fairness, responsibility, and respect, forming the foundation of ethical scholarship and intellectual growth. Upholding academic integrity is not only essential for maintaining the credibility and integrity of the academic community but also for nurturing individuals who contribute positively to society through their knowledge, skills, and ethical conduct. **Academic and research misconduct** undermine the efforts and achievements of other students, erodes the trust and credibility that society places in educational institutions and science, and can have lifelong consequences for the individuals involved.

Academic integrity is a teaching and learning issue, and our policies and procedures are written in that spirit. Academic misconduct can involve many gray areas. The ways that students are

allowed to work with other classmates or utilize additional resources can differ between courses which can lead to confusion. **Instructors** are responsible for making expectations regarding academic integrity and academic misconduct clear and explicit to students in the course syllabus, assignment instructions, and exam instructions. **Principal Investigators (PIs)** are responsible for making expectations related to research misconduct clear to their trainees. **Students** are responsible for actively seeking clarification from their course instructors and principal investigators if they are uncertain about whether a situation might involve academic/research misconduct.

V. Academic/Research Misconduct Reporting Procedures, Sanctions, and Appeals

A. Reporting Academic/Research Misconduct

University of Iowa Colleges track offenses on a shared database, with academic/research misconduct reports thus shared across UI colleges and with more severe consequences for repeat violations.

Incidents of academic/research misconduct will be investigated and reported in a manner that ensures due process and fairness.

- Instructors/PIs: Instructors/PIs are required to report incidents of academic/research misconduct by filing a violation report (email: biomedgrad-postdoc@uiowa.edu and notifying the accused student in writing and contacting the student's program director. Instructors/PIs are encouraged to maintain documentation of all communication with students accused of academic misconduct.
- Students: a student who witnesses an incident of academic/research misconduct is expected to report the violation to the course instructor/PI. During any investigation, the reporting student may be asked for additional information. The confidentiality of the reporting student will be protected to the greatest extent possible; however, confidentiality cannot be guaranteed in all cases.

Reports of academic misconduct are shared with the Graduate College, the Associate Dean in OGPS, the Director of Graduate Studies or Program Director, and Departmental Executive Officer (DEO, Department Head) in the student's home department. If the case involves founded allegations of research misconduct, the Office of the Vice President for Research (OVPR) is notified. Misconduct investigation records are not transferred to the student record in MAUI. However, depending on the result of a case (e.g., dismissal/expulsion), a dean's level note acknowledging misconduct as the reason for dismissal/expulsion may be added to the student's MAUI advising notes. Access to dean's level MAUI advising notes is highly restricted and campus advisors (e.g., DGS, DEO, Graduate Program Coordinator, faculty advisors) do not have access to these notes. Notes associated with misconduct are not recorded on the student's transcript. Records of misconduct violation(s) will be kept for seven years or until the student graduates, whichever comes first.

B. Misconduct Procedures and Sanctions

In the event that academic/research misconduct is suspected, the following procedures will be followed:

Course-Level/Lab-Level Procedures

- An instructor/PI who suspects a student of an incident of misconduct will investigate whether the suspected misconduct has, in fact, occurred.
- Instructors/PIs who intend to report a student for misconduct should inform the student about their concerns. The instructor/PI will make reasonable attempts to arrange a meeting with the student as soon as is feasible to clarify the situation and to discuss specifics of the incident. The student should be provided the opportunity to respond to the allegation. If the student does not respond or chooses not to meet with the instructor, the instructor/PI should proceed with sanctioning the student (see below) and reporting the incident.
- If the meeting between the instructor/PI and the student ultimately results in no sanction (e.g., grade reduction) because the allegation of academic misconduct is not supported, then the process will be considered completed. No additional reporting will be required, nor will there be any information related to the situation entered into the student's record.
- If after meeting with the student the instructor/PI determines that the allegation of academic misconduct is founded, then the instructor/PI will make a decision regarding whether or not a sanction (e.g., grade reduction) will be applied and report the allegation by filing a violation report.
    - If the instructor/PI decides not to apply a grade sanction (e.g., issues a warning or provides the student with learning opportunities to address any misunderstandings of misconduct), <u>the incident must still be reported at the level of the program (program director and/or DGS)</u>.
    - ***<u>Examples of Course-level Sanctions</u>***. In the case of academic misconduct that is related to a course, the instructor will determine the appropriate sanction. Sanctions may include but are not limited to:
        - Failing the assignment or assigning a lower grade than otherwise would have been given for the assignment.
        - Requesting a revision of the work in question and accepting the revision for grade assignment.
        - Failing a student for the course (must only be considered in consultation with the departmental/programmatic administrative home for the course)
- The student may:
    - Accept responsibility and the instructor's/PI's sanction.
    - Accept responsibility but appeal the instructor's/PI's sanction. Reasons could include inequitable enforcement of the sanction, the sanction is too severe, or the sanction is out of alignment with stated policy in the syllabus.
    - Deny responsibility for the violation and appeal the instructor's/PI's sanction.

- Sanctions are the responsibility of the instructor or department/program, and sanctions must be implemented, monitored, and enforced at the instructor or departmental/program level. If a case is appealed to a higher office (e.g., OGPS, Graduate College, Office of the Provost, Iowa Board of Regents), the decision reached by that office must be executed by the department/program (for department-level sanctions) or by the instructor/PI (for course-level/lab-level sanctions).

Student Appeals of Course-Level Sanctions

- If the student has any questions about the appeals process, then they should contact their Graduate Program Coordinator or Program Director to learn their departmental/program appeals process. The student may also choose to discuss their situation confidentially with a representative of the Office of the Ombudsperson.
- Appeals must be in writing to the DEO (Department Chair) of the department in which the course is offered within 30 calendar days of written notification of the instructor's finding. An email to the DEO is sufficient.
- The DEO will review the case and submit a decision letter to the student and to the Program Director of the student's program.
- If the student is not satisfied with the DEO's decision, the student may then request a review by the Associate Dean in OGPS in CCOM. The request must be written within 30 calendar days of receiving the DEO's finding. An email to the Associate Dean is sufficient.
- The Associate Dean will review the case and submit a decision letter to the student and to the Program Director of the student's program.
- If the student is not satisfied with prior decisions, then the student has the right to appeal to the Associate Dean for Academic Affairs of the Graduate College, followed by the Office of the Provost, and finally up to the Iowa Board of Regents.
- The instructor should send copies of the final determination document to the student, the department/program. The instructor should send a copy of the final determination document to biomedgrad-postdoc@uiowa.edu and they should notify any additional offices that have been involved in the appeals process that a decision has been reached.
- When a conflict of interest in the chain of appeals is identified (e.g., the DEO or Associate Dean is also the student's instructor, advisor, or supervisor), then an appropriate substitute to hear the appeal will be made.

NOTE: The course-level policies and procedures described above can be extended to non-course or lab-based situations, such as but not limited to the qualifying exam, comprehensive exam, prospectus defense, dissertation defense, seminars, and poster presentations. In these instances, the supervising faculty member, the committee, or others may report the alleged misconduct according to the procedures noted above. If the misconduct is founded, then the supervising faculty member and/or the student's committee will determine the appropriate sanction. Sanctions may include but are not limited to:

- Requesting a revision of the work in question and accepting the revision in order to receive a passing grade on the assessment.
- Failing a student on the assessment.

Supervising faculty members and/or committees are responsible for making expectations regarding academic integrity and academic misconduct clear and explicit to students.

Departmental Procedures

In the event that academic misconduct is founded, the student's home department/program will make a determination as to whether or not additional sanctions will be applied by the department/program according to the following procedures:

- Following a report of academic misconduct, a review committee of 2-3 primary faculty members will be appointed by the DEO, with one member designated as the chair. A meeting will be convened to allow the student an opportunity to discuss the alleged misconduct. The committee will meet to review the available evidence. After the committee has reviewed the report, the committee may assign the student additional sanctions (see below for examples) based on the severity of the offense and the number of previous offenses by the student reported to the department.
- ***Examples of Departmental Sanctions*.** Academic misconduct can involve many gray areas and borderline situations. In these cases, the department might combine or change the sanctions listed below so that they better fit the situation. At the department's discretion, egregious acts of misconduct may lead to more severe sanctions than suggested below even for a student's first or second report of misconduct.
  - **For first report** – The student receives a warning letter in which they are notified of the consequences of any additional offenses related to academic misconduct. The student is required to meet with the Director of Graduate Studies and/or Department Chair (DEO) to discuss the alleged violation(s) and departmental expectations regarding academic integrity. A summary of the violation report will be provided to the student. During the meeting, the DGS and/or DEO will review the sanction imposed by the instructor, review departmental sanctions, and review the appeal process and the deadline to appeal.
  - **For second report** – The department may require the student to enroll in a non-credit academic integrity seminar. The seminar is completed online, and most students complete the assigned readings and assignments in about 5-15 hours. The student will be charged a course fee of between $100 and $200.
  - **For additional reports** – In addition to any penalties listed above, the department may dismiss the student from the graduate program or recommend expulsion from the University. Decisions to dismiss a student from the graduate program or expel the student from the University are made in consultation with the Associate Dean for Academic Affairs of the Graduate College. Dismissal from the program/department may not automatically dismiss a student from the Graduate College.

Students who fail to complete any of the assigned sanctions may be restricted from course registration in future semesters. Degree conferral may be held for students in their final semester of enrollment until they complete their assigned sanctions.

Student Appeals of Departmental Sanctions

- If the student has questions about the appeals process, they should contact the Graduate Program Coordinator or Program Director. The student may also choose to discuss their situation confidentially with a representative of the Office of the Ombudsperson.
- Appeals must be in writing to the Associate Dean for OGPS in the CCOM within 30 calendar days of written notification of the department's finding. An email to the AD is sufficient.
- The AD will review the case and submit a decision letter to the student and to the Program Director
- If the student is not satisfied with the AD's decision, then the student has the right to appeal to the Associate Dean for Academic Affairs of the Graduate College, followed by the Office of the Provost, and finally up to the Iowa Board of Regents.
- The AD will send copies of the final determination document to the student, the department, and any offices that have been involved in the appeals process. In addition, the AD will file the final determination document.
- When a conflict of interest in the chain of appeals is identified (e.g., the AD is also the student's advisor or supervisor), then an appropriate substitute to hear the appeal will be made.

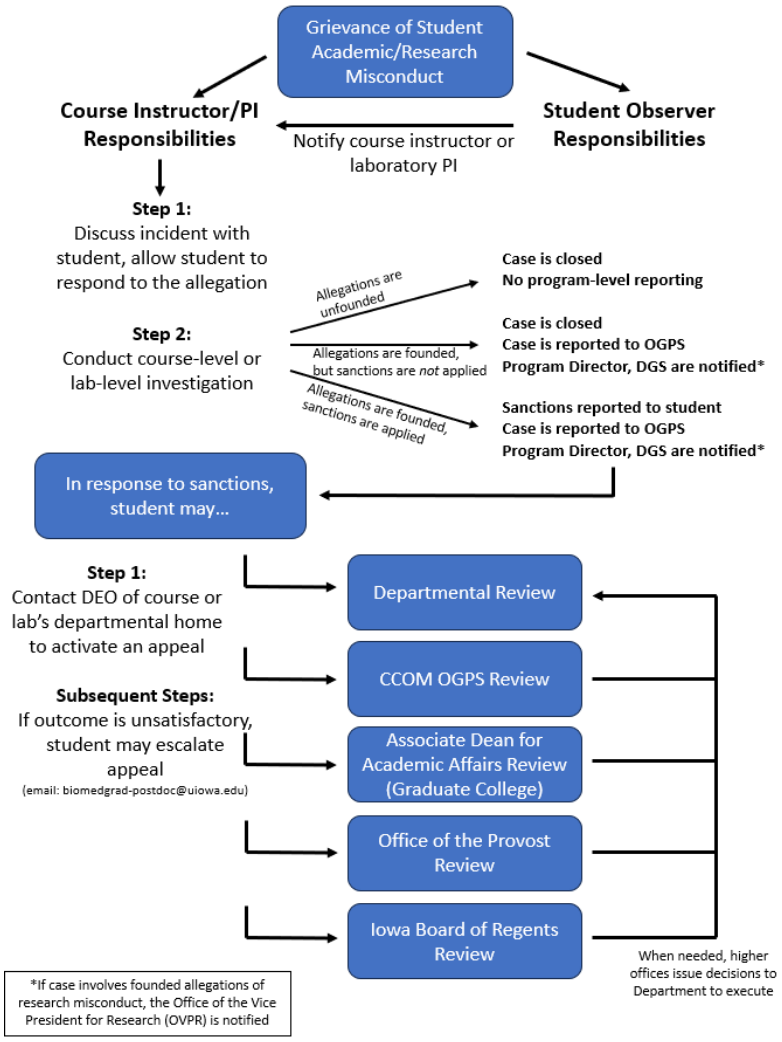

Figure 1: Workflow for grievances related to student misconduct.

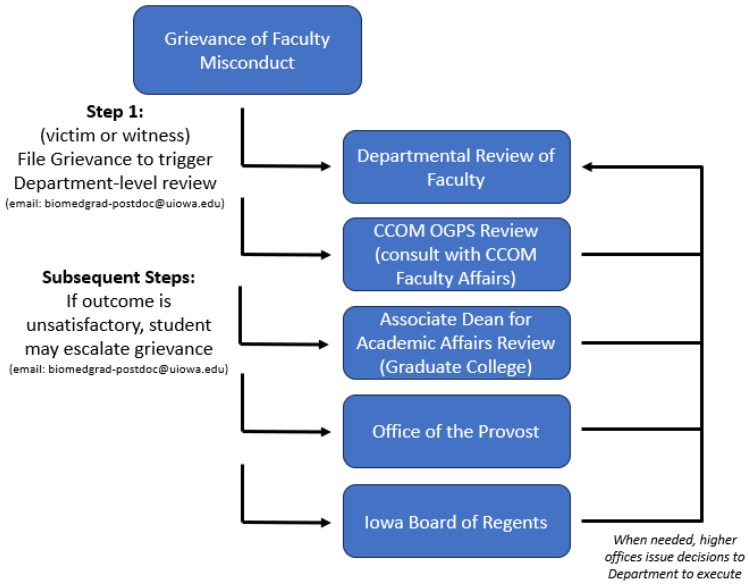

Figure 2: Workflow for grievances related to faculty misconduct.