Instructor: Agnes Ayme-Southgate
Office: RITA 225
Office Hours: Wednesday 11-12 and Thursday 10-11 or by appointment
Email: southgatea@cofc.edu  BEST

Note that there are 1 other lab section on Thursday taught by Dr. Richard Southgate. The experiment schedule is very similar. If you miss a lab, try to make it up that same week using one of the other sections.

Course description:
An introduction to the principles of heredity using common experimental organisms. Recent techniques in molecular genetics are also covered. Laboratory three hours per week.
Prerequisites: BIOL 111/111L, BIOL 112/112L.
Co-requisites or prerequisites: BIOL 211 and 211D, BIOL 305, MATH 250 or equivalent course in statistics or permission of instructor
Learning Outcomes

Students will

- Demonstrate the ability to analyze data obtained from crosses. Apply basic statistical tools to genetics data.
- Understand Mendelian Genetics and common deviations, such as epistasis, penetrance, and complex traits.
- Demonstrate an understanding of the critical genetic concepts of mutations, alleles, and gene interaction in genotype-phenotype interpretation.
- Demonstrate an understanding of some basic molecular genetic techniques.
- Exhibit proficiency for developing hypotheses and interpreting results based on hypotheses.
- Format, analyze, and communicate experimental results.
- Recognize some of the inferences of modern genetics to society in general.

Name and pronoun statement

I will gladly honor your request to address you by the name and gender pronouns of your choice. Please advise me of this early in the semester via your college-issued email account or during office hours so that I may make the appropriate notation on my class list.

Textbook

None. Protocols and other information will be provided in class or posted on OAKS.

Important dates

Experiments schedule and due dates for lab reports are posted on the Excel schedule file on OAKS.

Planned experiments

1. Allelic series, dominance, and molecular basis of phenotype in *Drosophila*
2. Understanding gene structure and mutation types
3. DNA Polymorphism:
   4. Penetrance and expressivity in *Drosophila*, and the role of modifier genes
5. Complex traits and gene mapping in dogs

We will also do multiple bioinformatics exercises throughout the semester. Please bring laptop/tablet every lab.

Please check the announcements on OAKS. As all experiments last more than a lab period, each lab section will usually deal with 2-3 different experiments. Detailed experiment schedule is provided on OAKS as an Excel file.
**Evaluation and grading:**
35% Team Lab reports: work on the reports as a team and submit 1 report/team.
35% Team lab exercises: work on the exercises as a team and submit 1 report/team.
10% mid-term exam: individual
20% Final exam and practical: individual

**Grading scale:**
- 92 and above: A
- 90-91.9: A-
- 87-89.9: B+
- 83-86.9: B
- 80-82.9: B-
- 77-79.9: C+
- 74-76.9: C
- 70-73.9: C-
- 67-69.9: D+
- 64-66.9: D
- 60-63.9: D-
- below 60: F

**COURSE POLICIES**
- **Lab Safety:**
The official SSM lab safety policy document is posted on OAKS and needs to be reviewed. A lab safety quiz will be given in lab (9/01-02) and need to be PASSED before you are allowed to work in the lab. Observance of all safety regulations is expected, in particular dress code and food/beverage rules. There will be NO EXCEPTIONS. **Failure to follow the safety guidelines will debar you from performing the experiment** on the given day and you will not receive any grades for the same. Repeated offenses will lead to withdrawal from the course.

- **Attendance.**
You are expected to come to every class, unless you are sick or in case of emergency. You are expected to do your share of the work. Many of the labs involve long period of time at the microscope, and it's unfair to expect your lab partner to do all the work if you miss a lab. If you're sick, please send me and your partner an e-mail so that arrangements can be made. Most of the investigations may be impossible to make up. There is a possibility of a make-up if you can make arrangements with your partner and get yourself scheduled into one of the other sections of the BIOL 305L within the same week.

**Accommodations will be granted in case of close contact to someone positive for COVID, quarantine, and of course if you are COVID positive. Let me know as soon as possible. Other serious medical emergencies also qualify.**
Only students officially registered (graded or auditing) for this course may attend class. During the week following the drop/add deadline, the professor will verify student enrollments in this course. Any student appearing on the class roll but determined not to have attended the class even once will be removed, except for cases where a student is absent because of quarantine or isolation due to COVID-19.

- **Excessive absence**
  Missing 2 laboratories without valid excuse will result in a midterm F, which can still be changed to a regular final grade. This policy does not apply if the absences are due to a SERIOUS medical or personal reason and verification is provided.

- **Electronic devices**
  You are encouraged to bring your laptop or tablet for every class, but they can only be used for class activities. Breach of that trust will lead to you losing that right and therefore the ability to perform certain experiments.

- **Lab reports**
  Instructions for lab reports are available on OAKS. There will be questions to answer and analyses to perform for each investigation. Reports are team-based. You must work closely with your partner to gather and analyze the data, which should be clearly presented, legible, and neat. The stepwise calculations done to obtain the results should be shown, as you will be graded accordingly. Images have to be processed properly (cropped, labelled, etc.) to reflect and focus on the data. Failure to do so will result in lost points. Reports should be posted in the correct Dropbox on OAKS on the week listed in the experiment schedule file. You have a week-long "grace period" in which you could submit your report for partial credit, but reports will not be accepted thereafter, except for extenuating circumstances.

**COURSE COLLEGE POLICIES**

- **Electronic devices**: you will need a working computer. All software needed for the class activities are either available on-line or downloadable free of charge. We may use one of the department computer rooms for some activities.

- **Academic Integrity Statement (3.12)**:
  As members of the College of Charleston community, we affirm, embrace, and hold ourselves accountable to the core values of integrity, academic excellence, liberal arts education, respect for the individual student, diversity, equity and inclusion, student centeredness, innovation, and public mission. Congruent with these core values, the College of Charleston expects that every student and community member has a responsibility to uphold the standards of the honor code, as outlined in the [Student]
Handbook, In pursuit of academic learning, you are expected to reference the work of other scholars, and complete your own academic work, while utilizing appropriate resources for assistance. Any acts of suspected academic dishonesty will be reported to the Office of the Dean of Students and addressed through the conduct process. Your adherence to these practices and expectations plays a vital role in fostering a campus culture that balances trust and the pursuit of knowledge while producing a strong foundation of academic excellence at the College of Charleston. Any questions regarding these expectations can be clarified by your instructor.

Land and Labor Acknowledgement
We are located on the traditional lands of the first people of Charleston: the Etiwan, Kiawah, Edisto Natchez Kusso, Santee, and Wassamassaw people (also known as Varner Town Indians). We acknowledge and honor all indigenous people who lived, labored and were faithful stewards of the land. We express our deep gratitude for the land and continued faithful stewardship to the next generations.

We also acknowledge the lives and labor of the Africans who were enslaved to build Charleston, South Carolina. On this campus and in this space, African and African-descended people used skilled labor in ornamental ironwork, historic architecture, and low country agriculture and food production. As a member of the College of Charleston community, I acknowledge the Black lives and labor that built our city and our campus.

Accommodations for Students with Disabilities (3.11):
The Center for Disability Services/SNAP is committed to assisting qualified students with disabilities achieve their academic goals by providing reasonable academic accommodations under appropriate circumstances. If you have a disability and anticipate the need for an accommodation in order to participate in this class, please connect with the Center for Disability Services/SNAP. They will assist you in getting the resources you may need to participate fully in this class. You can contact the Center for Disability Services/SNAP office at 843.953.1431 or at snap@cofc.edu. You can find additional information and request academic accommodations at the Center for Disability Services/SNAP website.

OAKS (3.10, for all instructional modalities)
OAKS, including Gradebook, will be used for this course throughout the semester to provide the syllabus and class materials and grades for each assignment, which will be regularly posted.

Inclement Weather, Pandemic or Substantial Interruption of Instruction (3.8)
If in-person classes are suspended, faculty will announce to their students a detailed plan for a change in modality to ensure the continuity of learning. All students must
have access to a computer equipped with a web camera, microphone, and Internet access. Resources are available to provide students with these essential tools.

**F2F courses when students are quarantined/isolated due to Covid-19**
If one or more students are absent for an extended period of time due to COVID-19 (quarantine or isolation), instructors may, at their discretion, conduct the class exclusively online via OAKS for the duration of student quarantine/isolation, record class lessons to share with students, or choose an alternate accommodation that provides the impacted student(s) with the opportunity to continue in the course. The specific accommodation will vary depending on the number of students affected, the expected duration of their absence, and the needs of the class.

**Diversity and Inclusion in the classroom**
I am committed to creating an inclusive and accessible classroom environment for all students. I view the diversity that students bring to this class as a resource, strength, and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, generational status, socioeconomic status, ethnicity, race, religious background, and immigration status. Any suggestions for promoting a positive and open environment will be appreciated and given serious consideration.

I will gladly honor your request to address you by the name and gender pronouns of your choice. Please advise me of this early in the semester via your college-issued email account or during office hours so that I may make the appropriate notation on my class list.

**Inclusion**
The Multicultural Student Programs and Services provides a safe haven for students to develop connections with other students. It exists to help students be successful, provide advocacy, support services, and culturally based programs that educate about diversity and multiculturalism and empower them to be agents of social change in an increasingly diverse and global community.

The College of Charleston offers many resources for LGBTQ+ students, faculty, and staff along with their allies.
Preferred Name and Pronoun Information
On Campus Gender Inclusive facilities
Campus Resources
College of Charleston Reporting Portals
National Resources for Faculty & Staff
GSEC Reports
Documenting LGBTQ Life in the Lowcountry (CofC Addlestone Library Special Collections Project)
College of Charleston Quality Enhancement Plan (QEP)
Articles about CofC and LGBTQ+ Issues

In keeping with the College of Charleston’s core values of diversity, equity and inclusion, the Cougar Inclusion Team (CIT) provides education, information, and recommendations regarding support resources to members of the campus community who have experienced exclusion or bias. The CIT works to support members of our campus community who report concerns by listening, discussing resources, providing guidance on resolution options, conducting education, and collecting information about occurrences on our campus. A report to the CIT team helps us better understand our campus climate, informs our educational and infrastructure opportunities to address concerns that are shared, and fosters an environment where everyone feels welcome. More information about the CIT, including how to report an exclusion or bias incident can be found here: Purpose - College of Charleston (cofc.edu)

Mental & Physical Wellbeing
We take every student's mental and physical wellbeing seriously. If you find yourself experiencing physical illnesses, please reach out to student health services (843.953.5520). And if you find yourself experiencing any mental health challenges (for example, anxiety, depression, stressful life events, sleep deprivation, and/or loneliness/homesickness) please consider contacting either the Counseling Center (professional counselors at CofC Counseling Center or 843.953.5640 3rd Floor of Robert Scott Small Building) or the Students 4 Support (certified volunteers through texting "4support" to 839863, or meet with them in person 411 (4th Floor) Stern Center). Learn more about Students 4 Support on CofC's Hub. These services are there for you to help you cope with difficulties you may be experiencing and to maintain optimal physical and mental health.

Food & Housing Resources
Many CofC students report experiencing food and housing insecurity. If you are facing challenges in securing food (such as not being able to afford groceries or get sufficient food to eat every day) and housing (such as lacking a safe and stable place to live), please contact the Dean of Students for support (SALT - Student Affairs Leadership Team). Also, you can go to Student Food and Housing Insecurity to learn about food and housing assistance that is available to you. In addition, there are several resources on and off campus to help. You can visit the Cougar Pantry in the Stern Center (2nd floor), a student-run food pantry that provides dry-goods and hygiene products at no charge to any student in need. Please also consider reaching out to your Professor if you are comfortable in doing so.
Religious Accommodation for Students (4.6): (Faculty/Administration Manual VIII.A.10)

The College of Charleston community is enriched by students of many faiths that have various religious observances, practices, and beliefs. We value student rights and freedoms, including the right of each student to adhere to individual systems of religion. The College prohibits discrimination against any student because of such student’s religious belief or any absence thereof.

The College acknowledges that religious practices differ from tradition to tradition and that the demands of religious observances in some traditions may cause conflicts with student schedules. In affirming this diversity, like many other colleges and universities, the College supports the concept of “reasonable accommodation for religious observance” in regard to class attendance, and the scheduling of examinations and other academic work requirements, unless the accommodation would create an undue hardship on the College. Faculty are required, as part of their responsibility to students and the College, to ascribe to this policy and to ensure its fair and full implementation.

The accommodation request imposes responsibilities and obligations on both the individual requesting the accommodation and the College. Faculty members are expected to reasonably accommodate individual religious practices. Examples of reasonable accommodations for student absences might include: rescheduling of an exam or giving a make-up exam for the student in question; altering the time of a student’s presentation; allowing extra-credit assignments to substitute for missed class work or arranging for an increased flexibility in assignment dates. Regardless of any accommodation that may be granted, students are responsible for satisfying all academic objectives, requirements and prerequisites as defined by the instructor and by the College.

2022 – 2023 Religious Holidays

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<thead>
<tr>
<th>Date</th>
<th>Holiday</th>
<th>Religion</th>
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<tbody>
<tr>
<td>February 22, 2023</td>
<td>Ash Wednesday (Beginning of Lent)</td>
<td>Christian</td>
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<tr>
<td>February 27, 2023</td>
<td>Eastern Orthodox Beginning of Lent</td>
<td>Orthodox Christian</td>
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<tr>
<td>March 7, 2023</td>
<td>Purim</td>
<td>Jewish</td>
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<tr>
<td>March 21, 2023</td>
<td>Naw-Rúz</td>
<td>Baha’i</td>
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<tr>
<td>March 23 – April 20, 2023</td>
<td>Ramadan</td>
<td>Muslim</td>
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<tr>
<td>Date Range</td>
<td>Event</td>
<td>Religion</td>
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<tr>
<td>April 6 – April 13, 2023</td>
<td>Passover²</td>
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<td>Good Friday</td>
<td>Christian</td>
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<td>April 14, 2023</td>
<td>Good Friday (Orthodox)³</td>
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<td>Ridván</td>
<td>Baha’i</td>
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<tr>
<td>April 21 – April 22, 2023</td>
<td>Eid al-Fitr</td>
<td>Muslim</td>
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