

**BIOL/GEN 114X - The Sky is the Limit**  
**Section 4: Decoding the Genetic Mechanisms of Metabolism and Aging**  
**Fall 2022**

**Class Meetings:** Wednesdays, 3:20 - 5:10 PM

**Location:** 1428 MBB

**Instructors:**

Dr. Hua Bai	hbai@iastate.edu	3260 MBB
Ping Kang	pkang@iastate.edu	3266 MBB

Office hours: Scheduled by appointment

**Peer Mentors:**

Brenna Mathers	brennam@iastate.edu
Cara McCutchin	carebear@iastate.edu

**Textbook and Course Materials:** There is no required textbook for this class. Any readings or videos will be provided to you via Canvas.

**Learning Outcomes:**

Students will:

1. Learn about what model organisms are and their importance for understanding biological and cellular functions.
2. Learn cutting-edge life science research on fluorescence live cell imaging and CRISPR/Cas9 genome editing techniques.
3. Gain hands-on authentic research experiences in fly genetics, tissue aging assessment methods, and imaging data analysis techniques.
4. Interact with faculty and students around ISU and get to learn about their research as well as their career perspectives.

**Grading Scale:**

Satisfactory/Fail

**Course Policies:**

**Attendance** - Students with more than 2 unexcused absences will receive a Fail. If you are feeling ill at all this semester, please stay home and take care of yourself. Please email your instructors if you are feeling ill and we will work to ensure your safety and the safety of your peers.

**Participation** - is required in order to benefit from the course and to receive a Satisfactory mark. This means being an active and respectful participant in group activities and discussions.

## Calendar of activities for the semester\*

\*Subject to change

Date	Activities	Location
August 24	Introduction: Overview of the syllabus A short survey. Form four teams.	Meet in 1428 MBB
August 31	Seminar: 1. What is aging? - Exploring the history of aging and related human disease 2. What's a model organism? Introduction to <i>Drosophila</i> genetics	Meet in 1428 MBB
September 7	Lab: Sort female and male flies Seminar: Climbing assay to study muscle aging	Meet in 1428 MBB
September 14	Seminar: Genome Engineering with CRISPR-Cas9 Lab: Week 1 climbing assay	Meet in 1428 MBB
September 21	Lab: Week 2 climbing assay Lab: Week 1 climbing data analysis	Meet in 1428 MBB
September 28	Lab: Week 3 climbing assay Lab: Week 2 climbing data analysis	Meet in 1428 MBB
October 5	Lab: Week 4 climbing assay Lab: Week 3 climbing data analysis	Meet in 1428 MBB
October 12	Lab: Week 5 climbing assay Lab: Week 4 climbing data analysis	Meet in 1428 MBB
October 19	Lab: Week 6 climbing assay Lab: Week 5 climbing data analysis	Meet in 1428 MBB
October 26	Lab: Week 7 climbing assay Lab: Week 6 climbing data analysis	Meet in 1428 MBB
November 2	Seminar: Breakthroughs in Intracellular Fluorescent Imaging Lab: Analyze all climbing data	Meet in 1428 MBB
November 9	Bai Lab tour	Meet in 1428 MBB
November 16	Prepare for the presentation	Meet in 1428 MBB
<b>November 23</b>	<b>Thanksgiving Week - No Class</b>	/
November 30	Group Presentation	Meet in 1428 MBB
<b>December 7</b>	<b>Dead week, No class</b>	/
<b>December 14</b>	<b>Final week, No class</b>	/

### General policies:

#### Free Expression

Iowa State University supports and upholds the [First Amendment protection of freedom of speech](#) and the [principle of academic freedom](#) in order to foster a learning environment where open inquiry and the vigorous debate of a diversity of ideas are encouraged. Students will not be penalized for the content or viewpoints of their speech as long as student expression in a class

context is germane to the subject matter of the class and conveyed in an appropriate manner.

## **Public Health**

If you are not feeling well, you should stay home and focus on your health. Should you miss class due to illness, it is your responsibility to work with your instructor to arrange for accommodations and to make up coursework, as consistent with the instructor's attendance policy.

You may choose to wear a face mask and/or receive the COVID-19 vaccine and boosters, as well as other vaccines such as influenza, but those options are not required. Thielen Student Health Center will continue to provide COVID-19 vaccinations free-of-charge to students. The university will continue to offer free masks and COVID-19 test kits during the fall 2022 semester. Other wellbeing resources for students are available at: <https://www.cyclonehealth.iastate.edu/wellbeing-resources/>

Public health information for the campus community continues to be available on Iowa State's [public health website](#). All public health questions should be directed to [publichealthteam@iastate.edu](mailto:publichealthteam@iastate.edu).

## **Academic Dishonesty**

The class will follow Iowa State University's policy on academic misconduct ([5.1 in the Student Code of Conduct](#)). Students are responsible for adhering to university policy and the expectations in the course syllabus and on coursework and exams, and for following directions given by faculty, instructors, and Testing Center regulations related to coursework, assessments, and exams. Anyone suspected of academic misconduct will be reported to the [Office of Student Conduct in the Dean of Students Office](#). Information about academic integrity and the value of completing academic work honestly can be found in the [Iowa State University Academic Integrity Tutorial](#).

## **Accessibility**

Iowa State University is committed to advancing equity, access, and inclusion for students with disabilities. Promoting these values entails providing reasonable accommodations where barriers exist to students' full participation in higher education. Students in need of accommodations or who experience accessibility-related barriers to learning should work with Student Accessibility Services (SAS) to identify resources and support available to them. Staff at SAS collaborate with students and campus partners to coordinate accommodations and to further the academic excellence of students with disabilities. Information about SAS is available online at [www.sas.dso.iastate.edu](http://www.sas.dso.iastate.edu), by email at [accessibility@iastate.edu](mailto:accessibility@iastate.edu), or by phone at 515-294-7220.

## **Discrimination and Harassment**

Iowa State University does not discriminate on the basis of race, color, age, ethnicity, religion, national origin, pregnancy, sexual orientation, gender identity, genetic information, sex, marital status, disability, or status as a U.S. Veteran. Inquiries regarding non-discrimination policies may be directed to Office of Equal Opportunity, 3410 Beardshear Hall, 515 Morrill Road, Ames, Iowa 50011, Tel. 515-294-7612, Hotline 515-294-1222, email [eooffice@iastate.edu](mailto:eooffice@iastate.edu).

## **Prep Week**

This class follows the Iowa State University Prep Week policy as noted the ISU Policy Library; as well as section 10.6.4 of the Faculty Handbook. Visit the [ISU Policy Library website](#) (<http://www.policy.iastate.edu/>) for policy wording.

## **Religious Accommodations**

Iowa State University welcomes diversity of religious beliefs and practices, recognizing the contributions differing experiences and viewpoints can bring to the community. There may be times when an academic requirement conflicts with religious observances and practices. If that happens, students may request reasonable accommodation for religious practices. In all cases, you must put your request in writing. The instructor will review the situation in an effort to provide a reasonable accommodation when possible to do so without fundamentally altering a course. For students, you should first discuss the conflict and your requested accommodation with your professor at the earliest possible time. You or your instructor may also seek assistance from the [Dean of Students Office website](http://dso.iastate.edu/) (http://dso.iastate.edu/) or via phone 515-294-1020 or the [Office of Equal Opportunity website](https://www.eoc.iastate.edu/) (https://www.eoc.iastate.edu/) or via phone 515-294-7612.

## **Contact Information for Academic Issues**

If you are experiencing, or have experienced, a problem with any of the above statements, email [academicissues@iastate.edu](mailto:academicissues@iastate.edu).