



Biocore381: Evolution, Ecology, and Genetics

University of Wisconsin-Madison

Course Information

Fall 2022

Overview of the Biology Core Curriculum

The Biology Core Curriculum (Biocore) is a four-semester honors sequence that provides a solid foundation for any biologically oriented field of study. Biocore faculty come from all across campus and are eager to work with you! They are scientists and instructors with diverse expertise—from human genetics to plant pathology, from ecological restoration and evolutionary biology to cellular, developmental and neurological biology. The courses offer an *integrated, research-focused* approach to biology with rich opportunities to practice *scientific communication, problem solving, critical thinking* and *group learning*.

Biocore consists of seven Honors courses (4 lectures, 3 labs) taken over four semesters:

Lecture courses (3 credits)	Lab courses (2 credits)
Biocore 381: Evolution, Ecology and Genetics	Biocore 382: Evolution, Ecology & Genetics Lab
Biocore 383: Cellular Biology	Biocore 384: Cellular Biology Lab
Biocore 485: Principles of Physiology	Biocore 486: Principles of Physiology Lab
Biocore 587: Biological Interactions	

The lecture courses must be taken in sequence since they integrate and build on one another. There is more flexibility to take lab courses out of sequence, however we recommend taking either 382 or 384 prior to taking Biocore 486. For students who choose to study abroad or take a break in the middle of Biocore, it is possible to return to complete the program prior to graduation.

Fulfilling Major Requirements

Biocore is not a major but it fulfills many of the requirements for most biological science majors including Biology, Biochemistry, Zoology and Genetics. Biocore courses fulfill introductory biology requirements, upper level genetics (Genetics 466 equiv.), and physiology for some majors (Phys 335 equiv). In addition, students earn Comm-B credit and can fulfill intermediate/advanced laboratory requirement by taking Biocore 486 lab.

Recognition for taking Biocore

All Biocore courses are recognized on your transcript with an 'H' designation.

You will be eligible to earn a certificate in the Biology Core Curriculum that will be printed on your transcript as "*Certificate in Biology Core Curriculum Honors*". To earn this recognition, you must

- Complete all four Biocore lecture courses (Biocore 381, 383, 485, 587) and TWO of three Biocore

lab courses (Biocore 382, 384, 486)

- Earn a 'B' grade or better in all Biocore courses
- Complete your degree with a cumulative GPA of 3.3 or higher

We realize the hard work and dedication you commit to in order to complete four semesters of challenging Biocore courses. Regardless of whether your goals include earning the official certificate or not, we look forward to working with you ~ and celebrating with a *cupcake* at Biocore graduation!

Honors Learning Outcomes



By the end of your Biocore Honors experience, you will

Be able to

- Reach for and achieve high standards in the quality of your learning
- Actively engage in and practice group learning, collaboration and team work
- Demonstrate a learning mindset and intellectual curiosity for biology that transcends grades
- Demonstrate sophistication in your ability to reason scientifically and integrate your understanding of biology- from molecules to ecosystems and different life forms
- Demonstrate the process of science including development of novel scientific questions, formulate hypotheses, carry out experiments, and make logical conclusions based on evidence
- Demonstrate advanced scientific communication skills, oral and written, and the ability to translate their understanding to the broader community
- Apply a diversity, equity, and inclusion (DEI) lens to learning, leadership, and life.
- Articulate the value of your *Biocore Honors experience*

Gain

- Advanced level biology content knowledge, critical thinking, scientific reasoning, and process of science skills
- A supportive community of academically engaged peers
- A dedicated group of Biocore instructors who will support you in your learning and professional development
- A portfolio of materials demonstrating your research, communication and collaboration skills
- Certificate of Biology Core Curriculum Honors

Approved by Biocore Exec Committee 2/9/17

Welcome to Biocore!



Biocore 381: Evolution, Ecology, and Genetics

Biocore 381 is the first course in the four-semester Biology Core Curriculum. The prerequisite for Biocore 381 is being 'Declared in the Biology Core Curriculum' through an application process. Students with questions concerning prerequisites should check with Biocore Associate Director, Janet Batzli, 363 Noland Hall jcbatzli@wisc.edu

Course Description

Basic principles of ecology and interrelations between individuals, populations, communities, ecosystems and their environment; transmission genetics and introduction to population genetics; origin of life, evolutionary mechanisms, ancestral relationships among species, and the diversity of life.

Course Designations, COVID-19 Instructional Mode, and Attributes

Biocore 381 is a 3-credit Honors, intermediate level lecture course that includes three live, face-to-face 50-minute meetings held MWF from 8:50-9:40am each week in Room 168 Noland Hall and a once per week 50-minute Discussion. As of this writing, the disease caused by COVID-19 and its variants is still active in our community. Although the Dane County Health Department and the UW campus are not requiring masks at this time, we highly recommend wearing a mask during lecture to protect yourself and those around you who are at high risk of severe disease. Check the following link:

<https://covidresponse.wisc.edu> for the most recent information. Should the COVID-19 situation change, we may revert to online instruction using live lectures accessed from our Canvas Course Website.

Lectures are led by Dr. Evelyn Howell (*course leader/chair) who teaches ecology and diversity; Dr. Daniel Parrell who teaches transmission genetics and basic models for inheritance; and Dr. Irwin Goldman who introduces evidence and mechanisms for evolution. During many lecture periods you will work in pre-assigned teams on In-Class Activities (see description below) based on material presented in class or pre-assigned lectures and videos.

The lectures are complimented by one 50-minute required discussion section per week led by one of our Teaching Assistants (TAs): Mollie Comella, Amanda Polanski, and Abigail Meder. Discussion sections enroll 15-16 students and are a significant component of the course that are separate from lecture yet guided by the learning objectives introduced in lecture. During the discussion periods, you will work together to clarify and extend concepts through activities and problems and conduct peer reviews. You will also have time to ask and discuss questions about lecture concepts, problem sets, exams, and written assignments.

Your work in Lecture and in Discussion will also be facilitated by our uTAs: Sam Neuman, Walter Camp, Allison Forsythe, and Nayef Hamden

Workload Expectations

You should plan to spend a minimum of 6 hours each week outside of the regular class meetings doing the following combination of learning activities: lecture readings, assigned pre-recorded lectures/videos, problem sets, writing and peer reviewing written work associated with the writing assignment, and preparing for exams. Given many opportunities to participate, communicate, and actively engage with the materials, you will learn to reason scientifically and solve problems in ecology, genetics, and evolution. You will practice writing and communication and work regularly in class in small groups of 3-4 students to apply concepts and work through problems with the guidance of instructors. Credit for this course counts toward the following requirements: Communication B, Biological Science (which also meets the Natural Science) Breath Requirement, and Honors credit that can be applied toward Honors in an array of majors. Biocore courses are Honors courses with no additional work required for Honors credit.

Learning Outcomes (Goals)

By the end of Biocore 381, you should be able to:

1. Understand what we know, how we know, and what we don't know in ecology, transmission genetics, evolution, and the current diversity of life at the intermediate level
2. Apply scientific theory, concepts, reasoning, and quantitative and qualitative approaches to understand and solve problems
3. Use terminology accurately and effectively within appropriate conventions of the discipline
4. Find, evaluate and relate scientific information found in primary scientific literature
5. Build a logical argument based on evidence and scientific reasoning
6. Analyze a problem using a systems approach, recognizing levels of biological scale and organization
7. Work as a member of a productive, collaborative group
8. Demonstrate scientific communication skills and the ability to translate scientific concepts to a broader community

Assignments

We have built a number of different types of assignments into *Biocore 381*. All of them are designed to help you achieve the course learning goals; each has a different purpose.

Exams: There are three exams, the purpose of which is for you and the staff to assess what you are learning. The questions (“Biocore Questions”) are short answer format (single or multi-part questions) and often require you to use data and/or a scenario to explain an outcome, make a prediction, develop a hypothesis, or design an experiment. Most often, you are asked to articulate the assumptions you make and the reasoning behind your answers. The first two exams are scheduled in the evening to give you ample opportunity to write. The third is during the final exam period. Each exam will emphasize material from the sets of lectures listed on page 7; however, given the integrative nature of the course, material from earlier parts may be included as part of an integrative question.

Each exam represents a different percent contribution to the final course grade.(See p.7)

The Problem Sets, In-Class-Activities (ICAs), and Learning Guides, described below, are all designed to help you learn and to prepare for and do well on the exams.

Problem Sets: The eleven problem sets (10 of which count towards determining your final grade) contain previews of the kinds of information and skills you will need to acquire to meet the course learning goals and perform well on the exams. They help you assess how well you really understand the material that we are discussing in lecture in time to ask questions if something is not clear. The questions in the problem sets are representative of exam questions.

These are individual assignments, meaning that you need to answer in your own words and demonstrate that you understand the material. Several problem sets may will include one essay question that will require 1-2 pages for a complete response. See Writing Assignments below for more on these essay questions.

In-Class-Activities (ICAs): We often include a series of short activities or worksheets during the lecture periods to help you work with the ideas we have just presented or which we have asked you to review (through posted videos or readings) ahead of time. ICAs are team activities and provide opportunities for you to assess your understanding, and also a means by which the teaching team can

identify misunderstandings, or concepts that need more explanation. The activities often include questions taken from past exams.

You will be assigned to a 4-person learning team made up of students who share the same lecture discussion section.

Each of the 3 course units (Ecology, Genetics, Evolution and Diversity) will have a total of 10 points for ICAs. How much each individual ICA contributes to the total depends on how many were included in the unit. Collectively the ICAs contribute 5% to your final grade.

ICAs give you practice in applying concepts with the benefit of guidance & immediate feedback from instructors, TAs, and uTAs. Research on learning indicates that students who actively engage in learning during class improve their overall achievement. See evidence some evidence that support this here: <http://www.pnas.org/content/111/23/8319.full.pdf> (“Large-Scale Comparison of Science Teaching Methods Sends Clear Message”)

Learning Guides: Each of the course lecturers will prepare guides that summarize the learning goals and expectations for the topics to be covered in their unit. The formats may vary, but all of the guides will include learning goals/objectives and reading or video assignments for each topic, as well as thought questions, study questions, lists of terms and concepts to understand, or links to practice problems.

Writing Assignments: One of the important learning goals of the Biocore program is to help you develop scientific communication skills. In Biocore 381 we are particularly focused on writing. There will be several opportunities to participate in peer review, gather feedback, revise and build your writing skills over the semester.

Most of the writing assignments will be single-authored. First is a **paper** focusing on the field of ecology. This assignment is designed to give you an opportunity to explore a course-related topic in more depth, to explore primary research articles, to practice translating technical information to an informed lay audience, and engage in peer review, an essential component of effective communication.

Several **weekly problem sets** will include an "essay" question that will require a response of 1-2 pages to meet both content (80%) and writing (20%) standards. These include appropriate use of scientific vocabulary and logical organization, and a demonstration of your ability to use of scientific reasoning based on evidence taken from course materials and journal articles to formulate appropriate conclusions.

The last unit of the course will feature a **diversity project** during which you explore a question related to a question related to biodiversity and evolution. This is a group activity in which the final product could take a number of forms (factsheet, slide presentation, etc) all of which will involve demonstrate scientific communication.

Together these assignments help to fulfill your Comm-B requirement.

Optional Field Activity: One of the best ways to engage in learning ecology is to experience and engage with the natural world. We will provide a list of suggested activities from which you can make your selection. The idea is for you to apply some of the ecological concepts discussed in class in a

relevant, real context—in the field—and reflect on your experience in a short paper. This activity must be done in accordance with COVID-19 Guidelines. **GET INVOLVED and HAVE FUN!! You will earn 10 bonus points upon completion.**

Board of Directors (BOD)

We will solicit student representatives who would like to represent Biocore 381 in the weekly staff meeting (on Wednesday immediately after lecture). We would like to have one student representative from each discussion section if possible. These folks will be the voice of all of the students to let the faculty know of issues and concerns in regard to the course. One representative each week will write up “minutes” summarizing the meeting that will be included in the weekly announcements. This is a good opportunity to contribute to course improvement and student advocacy. In addition, as a BOD member, you can get to know the course instructors better.

Scheduling and Enrollment

Biocore 381 meets from 8:50 to 9:40 in Room 168 Noland Hall. (Occasionally, some students will move to Room 123 Noland for In-class activities). The 50 min. discussion sections are listed below. It is very important that you attend the section for which you are registered. Part of your grade will be based on your participation and assignments in discussion section.

Section	Time	Place	TA	uTAs
301	8:50 R	342 Noland	Amanda Polanski	
302	9:55 R	342 Noland	Amanda Polanski	Sam Neuman
303	11:00 R	342 Noland	Abby Meder	Walter Camp
304	12:05 R	342 Noland	Abby Meder	Allison Forsythe
305	1:20 R	342 Noland	Mollie Comella	Allison Forsythe
306	2:25 R	342 Noland	Mollie Comella	Nayef Hamdan
307	3:30 R	342 Noland	Mollie Comella	Nayef Hamdan

Canvas – On-line Course Management System

We will be using Canvas to deliver our course materials over the internet. Canvas is a course management system that provides access only to students enrolled in a course and thus enables us to provide course materials in a secure environment. You will be able to use our Canvas site to download copies of course materials. You can log-on at the following web address <http://canvas.wisc.edu>.

Examples of Online Materials available through Canvas:

1. Course Information and Syllabus
2. Summaries of each week’s focus and content
3. Lecture Guides
4. Links to online-lectures to be viewed before class meetings
5. Problem sets and model answers
6. In-class group worksheets for ICAs and model answers
7. Ecology Paper and Diversity Project Assignments Statements
8. Biocore eTextbooks and links to additional readings

Texts and Other Materials for the Lecture Course

Biocore 381 is participating in the UW-Madison Engage eText Pilot. Your eTexts are available from the Engage tool in your Canvas course page. We will be using excerpts from three texts:

Ecology Concepts and Applications 9th edition by Sher and Molles (McGraw Hill 2022), *Biology*, 6th edition by Brooker et. Al (McGraw Hill, 2023), and *Genetics Analysis & Principles*, 7th edition by Brooker (McGraw Hill, 2021).

To access your eTexts follow these steps:

1. Log into the Biocore 381 Canvas page (<https://canvas.wisc.edu>)
2. Locate and click the Engage eText on the left column
3. Read and agree to the End User License Agreement (EULA). There is a blue “agree” box you can click at the bottom of the User Agreement page.
4. Click on the purple “Launch Unizin Engage” button.

Note: Engage works best when viewed online in Firefox or Chrome.

Biocore 381 Assignments, Exams, and Grades

Course Component	Date	Time	Emphasis	% Grade	Component %
Exam I	M Oct 3	7:30-9:30 pm	Sept. 8 – Sept 28	10	40%
Exam II	T Nov 8	7:30-9:30 pm	Sept 30– Nov 2 and comprehensive	14	
Exam III	M Dec 19	7:45-9:45am	Nov 4 – Dec 14 and comprehensive	16	
Problem Sets	Sept 16, Sept 23, Sept 30, Oct 14, Oct. 21, Oct 28, Nov. 4, Nov.11, Nov. 18, Dec 2 Dec. 9	Due before Lecture starts		20	20%
Ecology Paper	October 16	Due Noon		15	30%
Problem Set essays	Various due Dates			5	
Diversity Project	Dec 14	Due before lecture starts		10	
In-class Activities (ICAs)	Weekly	In lecture, varies	10 pts. / lecture unit (Ecology, Genetics, Evolution/Diversity)	5	5%
Participation					5%
	Attendance/Effort			5	

Total

100

*There are eleven problem sets. At the end of the semester, we will drop the lowest score.

%	Letter Grade
90	A
80	B
70	C
60	D

You are not in competition with anyone for a grade since neither the course as a whole nor the individual exams are curved. Intermediate grades (AB and BC) will be used at the end of the semester at the discretion of the teaching staff for scores on the borderlines. No one would be more delighted than the staff of this course if everyone earned an A!

Course Administration

Dr. Howell serves as the chair of Biocore 381. Grading questions can be taken up with Dr. Howell (eahowell@wisc.edu). Carol Borcharding (carol.borcharding@wisc.edu) is the Program Manager and is the first person to contact for questions regarding course enrollment and section changes. Please contact High Impact Practice Facilitator Diana Tapia Ramon (dtapia2@wisc.edu) to sign up for alternate exam times (allowed only for valid reasons) and McBurney Accommodations.

To minimize the amount of class time taken up with administrative details, all announcements and information of general interest will be sent to you on Wednesday afternoon by email. It will be your responsibility to read this email routinely, since most announcements posted there will *not* be reiterated in class.

Privacy of Student Records & the Use of Audio Recorded Lectures Statement.

Course materials and recordings for this course are protected intellectual property at UW-Madison. Students in this course may use the materials and recordings for their personal use related to participation in this class. Students may also take notes solely for their personal use. If a class meeting is not already recorded, you are not authorized to record class meetings unless you are considered by the university to be a qualified student with a disability requiring accommodation. [Regent Policy Document 4-1] Students may not copy or have course materials and recordings outside of class, including posting on internet sites or selling to commercial entities. Students are also prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor's express written permission. Unauthorized use of these copyrighted course materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.

Course Evaluations

Students will be provided with an opportunity to evaluate this course and your learning experience via mid-semester and final course evaluations. Student participation is an integral component of this course, and your confidential feedback is important to instructors. You are strongly encouraged to participate in the course evaluation.

Students' Rules, Rights & Responsibilities

Please use [this link](#) to access information about UW-student privacy rights (FERPA).

Tips for doing well in Biocore 381

✓ **Take Notes and Ask Questions During Class.** All of our lectures will be recorded and available through the Canvas Website within one or two days after they occur. Instructors may also assign additional materials that you will need to have read or viewed (for example short videos) before lecture or have available during lecture (for example, ICAs). These will be posted on Canvas ahead of time. No matter what type of materials are available, make it a habit to take notes! It has been shown that taking notes is a very effective learning strategy, especially when you use the following steps as you write:

1. Summarize (Do not take verbatim notes of everything the instructor says.)
2. Contextualize, and
3. Organize

This process is important for memory and to question what you know and what you don't know. Whether you chose to take notes electronically or long hand (old fashion pen and paper has been found to be more effective... [see research article – “The Pen is Mightier than the Keyboard”](#)) – Make it a practice to take notes!

Asking questions is also a key part of learning. It helps you to frame your understanding, and uncover and discuss inconsistencies. Questions also help your instructors know what is or isn't clear about the concepts they are presenting. We want to help you learn!

Learning how to take good notes and ask questions is a skill. Start practicing now!

- ✓ **Time management** Time is a resource that few of us manage well naturally. Learning how to estimate how long it will take to accomplish a task assumes that you know the magnitude of the task. In learning something new, you actually do not know the magnitude of the task until you get started, and therefore the best practices for time management are:
- Look way ahead (in the syllabus), break down tasks into small chunks, make 'to do' lists, organize and prioritize your 'to do' list tasks using a daily/ monthly planner, and do a little bit of work everyday.
 - Identify and do a 'recharge activity' that relieves pressure and refocuses. Even a short 'recharge activity' (30 min) can release tension and help you refocus energy so you can be productive.
 - Attending a peer mentored study group on a weekly basis will keep you on task and caught up.
- ✓ **Study Differently.** Biocore focuses on problem solving, making predictions, and explaining ideas based on evidence and logical assumptions. These types of thinking skills require different types of study skills than you may be used to (e.g. flash cards or memorization activities). In order to prepare, you need to study differently.
- **Participate in a peer mentored study group** to keep you up-to-date with studying and help hone your study skills given guidance from peer mentors who have taken the course and done well. Group study is an excellent way to learn, support, and challenge yourself and each other. Be aware that group study can also give you a false sense of security that you know material, when it is really your group that knows. Make sure to always do the problem sets and other assignments on your own.

- **Use the Learning Goals** as your guide for reading and for studying. The instructors use the learning goals to create the assessments, the readings and the classroom activities. Use the learning goals to make your own problem sets and questions; generate diagrams and concept maps; create tables and charts to organize notes and summarize topics.
 - **Do Problem Sets Individually.** Problem sets are lower stakes opportunities to apply concepts and practice the kinds of reasoning and problem-solving skills you will need for the exams. In fact, many problem set questions come from old exams. Although you may discuss topics covered in problem sets with your peer mentored (PM) study groups, you should not do problem sets during PM study group time. Rather, go away from your group and answer the questions individually. Doing problem sets individually will help you avoid a false sense of security thinking you know the material when you may not; and will help you identify knowledge gaps, questions you have, and areas for improvement before the higher stakes exams.
 - **Invest in In-class Activities (ICAs)**-Your participation in ICAs is important to you and your team member's learning; therefore, **please notify Professor Howell** before class via email, if you are ill, or if you will be absent for some other valid reason.
 - **Do (and redo) the Practice Problems and Answer the Learning Guide Questions.** Do not make the mistake of simply looking at an answer sheet and thinking you understand how the solution was derived.
 - **Watch On-line Lectures** before (and after) lecture. These are short animated and narrated slide sets delivered via Canvas course page. You should view and take notes(!) on these before the lecture indicated in the syllabus in order to be prepared for the ICA on those days.
- ✓ **Be Responsible - Don't Cheat.** In this high stress world, where time and quality of work sometimes seem at odds, there are many temptations to take short cuts. Unfortunately, short cuts and cheating undermine the very reason you are here – to learn concepts and develop skills. Learning is challenging (especially in an honors course). Learning takes time and often requires bouts of hard work and sometimes 'failure' before achieving success. If you find yourself running out of time, contact your instructors and let them know what is happening and discuss consequences of late work (usually 1 grade/day). We will handle illness and personal emergencies by allowing you to drop your lowest problem set score. In addition, if you choose to work together with other students (collaborate) on problem sets, you must list the names of your collaborators on your assignment. Each student must write her/his **own answers**, in his/her **own words**, after working with the group. Assignments containing identical answers **will be investigated** as plagiarism with potential consequences outlined on the Biocore statement of academic integrity. Don't let these times of challenge lead you to cheat or in any way compromise the Biocore Honor Code (last page of this handout).

Biocore Peer Mentoring Program

This year we will be offering a Peer Mentoring program in Biocore 381. In this program, second year Biocore students or alums of the program (juniors & seniors) will be leading study sessions for groups of 5-6 Biocore 381 students. Checkout this video to learn more about Peer Mentoring in Biocore <http://www.youtube.com/watch?v=Z9vTwiMvNA> . If you decide to participate (participation is VOLUNTARY), we ask that you commit to come to at least the first 5 weeks of the semester. After that, you may switch groups or stop attending if you do not find it helpful. Guidelines for participation and sign up sheets will be available during the second week of classes.

Peer mentors facilitate weekly study sessions (1-2h) to study material related to the material you will be covering in Biocore 381. As a participant in these groups, it is important to note that peer mentors will NOT be expected to have the answers, rather they will serve as peer learning guides. The peer mentors

will help you think about how to approach problems, develop study skills, and navigate through the material most effectively. As a result, we not only hope that you become more confident in your learning and understanding of the material, but that you establish a relationship with the larger Biocore learning community.

If you have any questions please contact Janet Batzli (jcbatzli@wisc.edu). Look for details about this exciting program coming soon in your weekly email announcements and sign up!

Creating a Diverse and Inclusive Community and Classroom

Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals. The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.

<https://diversity.wisc.edu/>

In Biocore, we strive for the utmost equity for all students, TAs, and faculty/ staff. We are a community of students and instructors committed to and in full support of students who identify as Black, Brown, Indigenous, students of color, students with disabilities; students with racial, ethnic, gender, LGBTQ+ diverse identities. Your perspective, your learning, your interests, and your contributions matter within our engaged learning community. Our community and our science depend on engaging and embracing different perspectives and this starts with each of us understanding and recognizing our own biases. It takes a great deal of awareness and self-work to recognize bias and our own lack of awareness/ ignorance on specific topics. As a program, we all need to work on this recognition and how to hold each other accountable. Accountability in this context is a willingness to accept responsibility for ourselves, our intentions, words, and actions—when it comes to mitigating discrimination, microaggressions, and bias in all of its forms.

If you experience or notice discriminatory behavior or language

We, as Biocore program faculty and staff, encourage you to speak up in the moment if it is safe to do so and to let us, Biocore faculty and staff, know. We promise to hold ourselves accountable in the event of any such offenses. If the incident reoccurs despite intervention or you continue to experience bias, do not hesitate to bring this to your instructor’s attention and/or report the case through UW Madison’s [Bias Incident Reporting system](#).

Accountability: What to do when you do or say something that offended

Apologize, say ‘I’m sorry’ and take ownership when you have offended someone, even if it was unintentional. Saying nothing to remedy the situation perpetuates inequality. Taking responsibility for your words, actions, and behaviors is how you can be accountable to our community and our inclusive classroom goal. It takes everyone to create an accountable, supportive and productive learning environment. Biocore thrives when all individuals feel supported, especially those who are historically underrepresented at the university. As a learning community, we hope to support all students and staff to the fullest extent. This relies on instilling a trustful, accepting, and accountable environment for all.

[See strategies and suggestions for navigating difficulties in the classroom](#) (adapted from “Promoting Inclusive Classroom Dynamics in Higher Education” by Kathryn C. Oleson).

Special Needs and Religious Holidays

Please let Evelyn Howell (eahowell@wisc.edu) or Diana Tapia Ramon (dtapia2@wisc.edu) know by September 12 if you have any special needs that we should accommodate, scheduled absences, a potential exam conflict, or a religious holiday that conflicts with a course activity.

Accommodations for Students with Disabilities

The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students should contact the McBurney Disability Resource Center at <http://mcburney.wisc.edu>. Students are expected to inform Diana Tapia Ramon(of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Diana will work either directly with you or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations.

Students' Questions and Feedback

The staff of this course, lecturers and TAs/ uTAs alike, welcome your questions, suggestions, and comments. We want to get to know you, and we appreciate your feedback. Our contact information is listed on page 15. Dr. Janet Batzli serves as the Associate Director of Biocore. She would be happy to talk with you about any aspect of the program.

Preventing and Reporting Illness

All university departments are being asked to monitor and keep track of student illness. If you need to miss class due to illness please contact your TA and for Biocore 381 Dr. Evelyn Howell (eahowell@wisc.edu), especially if your absence is for more than one week. Under extenuating circumstances, we will work with you to complete course work within a reasonable time.

Other Helpful Information:

1. **Bias Incident Reporting system** Report an incident if you experience or witness bias, prejudice, or discrimination in class or out; in any setting on the UW Madison campus
<https://doso.students.wisc.edu/services/bias-reporting-process/>
2. **Sexual Assault, Dating Violence, Domestic Violence, and Stalking - Options for Victims of Sexual Assault, Dating Violence, Domestic Violence, and Stalking (May 2014)**
<https://www.youtube.com/watch?v=pz2qR8gw25I>

Biocore 381: Evolution, Ecology & Genetics
Schedule for Fall 2022

Week	Date	Lecturer	Title
1	Sept. 7	Howell	The Big Picture: Evolution, Ecology, and Genetics
	Sept. 9	Howell	Introduction to Ecology; Adaptation of Organisms to the Physical Environment
2	Sept. 12	Howell	Adaptation of Organisms to the Physical Environment; Prairies *online-lecture 1
	Sept. 14 Sept 16	Howell Howell	Population Size, Measurement Techniques, Structure Population Size and Dynamics*online-lecture 2
3	Sept. 19	Howell	Populations and Conservation – Rare Species, Exotic Species, Metapopulations. Managing Populations
	Sept. 21	Howell	Adaptations of Organisms to Biota; Communities: Organization and Diversity. Competition
	Sept 23	Howell	Communities: Predator-Prey Interactions. Mutualisms
4	Sept. 26	Howell	Disturbance, Succession, "Stability"
	Sept. 28	Howell	Community Conservation: Restoration and Landscape Ecology
	Sept.30	Howell	Ecosystems: Food Webs and Energy Flow
5	Oct 3	Howell	Ecosystems: Nutrient Cycles
	Oct 5	Howell	Ecosystems: Nutrient Cycles
	Oct. 7	Parrell	Genetics Overview
6	Oct. 10	Parrell	Mendel's Principles
	Oct. 12	Parrell	Intro to Pedigree Analysis and Probability
	Oct. 14	Parrell	Probability and Hypothesis Testing
7	Oct. 17	Parrell	Mitosis and Meiosis
	Oct. 19	Parrell	Chromosomal Basis of Inheritance and Sex Determination
	Oct. 21	Parrell	Linkage and Pedigree Analysis II
8	Oct. 24	Parrell	Non-Mendelian Inheritance: Mitochondrial Inheritance, Imprinting, Penetrance, Expressivity
	Oct. 26	Parrell	Non-Mendelian Inheritance: Multiple alleles, Epistasis
	Oct. 28	Parrell	Mutations and Chromosomal Structural Alterations I
Week	Date	Lecturer	Title
9	Oct 31	Parrell	Mutations and Chromosomal Structural Alterations II
	Nov 2	Parrell	Polygenic Inheritance I: Quantitative Traits: QTL
	Nov 4	Goldman	Charles Darwin, Man of Curiosity

10	Nov. 7	Goldman	Charles Darwin, Reluctant Prophet
	Nov. 9	Goldman	Forces of Evolution: Mutation, Gene Flow, Selection, and Drift in Populations
	Nov. 11	Goldman	Absence of the Forces and the Hardy-Weinberg Equilibrium

11	Nov. 14	Goldman	Selection and its impact on Allele Frequency in Populations
	Nov. 16	Goldman	Species Concepts and Speciation
	Nov. 19	Goldman	Molecular Evolution and Tree Thinking

12	Nov. 21	Goldman	Phylogeny
	Nov. 23	Goldman/ Parrell	Quantitative Human Genetics and Human Evolution
			Thanksgiving Nov 24-27

13	Nov. 28	Howell	Diversity Overview: History; Modern Prokaryotes and Eukaryotes: Introduction to Major Clades
	Nov 30	Howell	Bacteria, Archaea, Protists, Fungi
	Dec 2	Howell	Plants and the Transition to Land

14	Dec 5	Howell	Animals
	Dec. 7	Howell	Animals
	Dec. 9	Howell	Animals

15	Dec. 12	Howell	Diversity Project
	Dec. 14	Faculty	Course Wrap-Up

	Dec 19	Exam III	7:45-9:45am

Biocore 381 Staff Directory Fall 2022

Lecturing Staff

Professor Evelyn Howell, Chair	eahowell@wisc.edu	25E Ag Hall	608 263-6964
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Biocore Administration

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Carol Borcharding, Program Manager	carol.borcharding@wisc.edu	345 Noland Hall	265-2870
Diana Tapia Ramon High Impact Practice Facilitator	dtapia2@wisc.edu	361 Noland Hall

Office Hours

Name	Location	Day/Time
Dr. Evelyn Howell	25E. Ag Hall or via Zoom	By Appointment
Dr. Irwin Goldman	486 Moore Hall or via Zoom	By Appointment
Dr. Daniel Parrell	342 Noland	1 to 2:15 PM on Wednesdays
TA Mollie Comella	TBD	Wednesdays 12pm-1pm
TA Abby Meder	524 Noland	Fridays 9:45am-10:45am
TA Amanda Polanski	524 Noland	Thursdays 11am-12pm

BIOCORE STATEMENT OF ACADEMIC INTEGRITY

What is academic integrity and why are we promoting it? Academic integrity means being honest about your intellectual work which is fundamental to the pursuit of knowledge. We ask you to sign this honor code as a pact between you and the Biocore Program faculty/staff to abide by the academic rules of conduct laid out by the University. Without these rules of conduct our institution would be severely limited in its capacity to function as community of higher learning. We encourage you to visit the following website to become familiar with the University policy concerning Student Conduct and Disciplinary Rules: <https://conduct.students.wisc.edu/academic-misconduct/> As a student of the University of Wisconsin it is your responsibility to become familiar with, understand, and abide by the general Statement of Principles and Disciplinary Guidelines outlined by the Dean of Students and the UW Board of Regents. These guidelines protect both you and the university if an infraction has occurred. Ignorance of these regulations is not a defense in cases of infringement. So.. Just DON'T Do It!

DEFINITION OF ACADEMIC DISHONESTY

from UW Academic code 14.03 . https://docs.legis.wisconsin.gov/code/admin_code/uws/14

"Academic misconduct is an act in which a student:

1. Seeks to claim credit for the work or efforts of another without authorization or citation;
2. Uses unauthorized materials or fabricated data in any academic exercise;
3. Forges or falsifies academic documents or records;
4. Intentionally impedes or damages the academic work of others;
5. Engages in conduct aimed at making false representation of a student's academic performance;
6. Assists other students in any of these acts

“Examples of academic misconduct include, but are not limited to: cheating on an examination; collaborating with others in work to be presented, contrary to the stated rules of the course; submitting a paper or assignment as one's own work when a part or all of the paper or assignment is the work of another; submitting a paper or assignment that contains ideas or research of others without appropriately identifying the sources of those ideas; stealing examinations or course materials; submitting, if contrary to the rules of a course, work previously presented in another course; tampering with the laboratory experiment or computer program of another student; knowingly and intentionally assisting another student in any of the above, including assistance in an arrangement whereby any work, classroom performance, examination or other activity is submitted or performed by a person other than the student under whose name the work is submitted or performed”

CONSEQUENCES FOR ACADEMIC DISHONESTY

To determine whether academic dishonesty has occurred, the instructor and Biocore administrators will meet with the student. In Biocore, students who commit acts of academic misconduct will write letter describing what they did and, if appropriate, apologize to individuals who were involved in the incident. In alignment with the penalties listed in the University's UWS14, Student Academic Disciplinary Procedures we recognize three levels of consequences (1) An oral reprimand; and (depending on the severity of the case) written reprimand presented only to the student; or an appropriate assignment to be evaluated by the instructor or Biocore administrative staff, (2) a lower or failing grade on the assignment, exam, or course; removal of the student from the course or program; and a written reprimand included in the student's university disciplinary file, (3) recommendation for disciplinary probation for up to 2 years, suspension, or expulsion from the University. See a graphic representation of the misconduct process at the following link:

https://conduct.students.wisc.edu/wp-content/uploads/sites/274/2016/08/Academic_Integrity_Flowchart.png

BIOCORE HONOR CODE

You will be asked to sign a statement upon entering the Biocore program during the first week of class in Biocore 301. In order to participate in the Biocore Program you must agree to the following principles:

1. I will report laboratory data honestly and accurately. Under no circumstances will I fabricate data or change data to fit what I think it should be.
2. All work that I submit under my name to a peer for peer review or to an instructor for final grading will be my own. I will not copy or paraphrase from another student presently or previously enrolled in this course. For projects where collaboration is explicitly permitted, I will list the names of students with whom I worked.
3. I will not allow another student to copy or "borrow" my laboratory reports or other assignments.
4. I will not forge or falsify academic documents including graded assignments and examinations
5. I will not copy from fellow students nor share contents or answers associated with current semester exam or quizzes.
6. I will strive to make Biocore a community that is based on honesty and integrity.