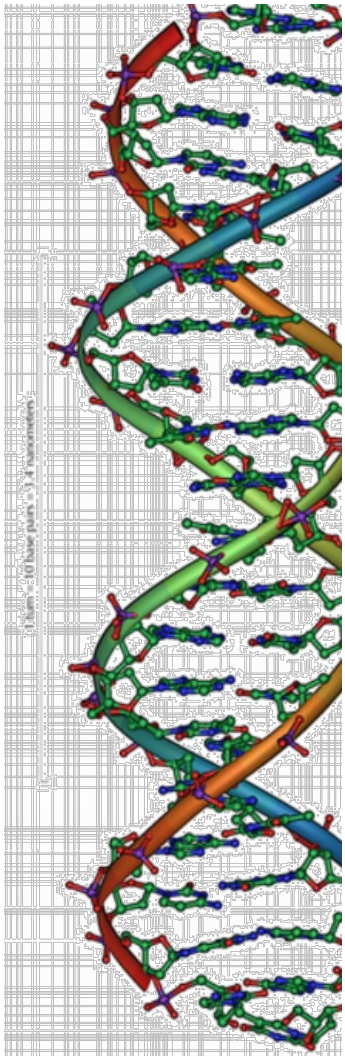


Genetics Home Page

Here is a link to the schedule of presentations of news items to the class.

Genetics in the News

We all know that "correlation is not causation" (and if you don't know that, you'd better just nod wisely and look it up, because if you *don't* know that, you're either not a scientist or an idiot scientist at best). Well, here's a hilarious demonstration of that truism.

French monks "petitioned the Pope, informing him that rabbits ... were actually fish. The Pope agreed" — with line like that, how could you not want to read more about the genetic changes associated with the domestication of rabbits?

Fruit flies love the smell of beer (but then, who doesn't? — besides me, that is). And that's because of the smell of the yeast that gives beer its alcohol and some of its flavor. But what about the yeast? Why would it have evolved genes for enzymes that produce those aromas? As is so often the case, Science may have the answer.

NASA scientists are putting fruit flies in space, taking advantage of the genetic similarities between flies and humans to glean insights into possible effects of long-term space travel on astronauts.

Using modern molecular genetic techniques, and taking advantage of mitochondrial inheritance, a British businessman and a molecular geneticist have claimed to have solved the mystery of Jack the Ripper's identity; it's interesting to compare the version of the story in The Daily Mail to that in The Inquisitor among others.

Nothing's ever as simple as you might like. Despite the clarity and simplicity of Mendel's Law of Segregation, there are exceptions. Some genetic elements are able to get themselves inherited in more than half of an affected individual's progeny; such elements are called "segregation distorters" or "drive genes." Researchers have been using them to try to develop ways of controlling pest populations, with a new and very promising version described recently.

"CRISPR" is a term you may have heard before now, but you'll definitely be hearing more about it in future. It's an extremely versatile genetic technique for modifying genomes, and not only does it work *in vivo*, but researchers have recently used it to modify mice with a form of muscular dystrophy, significantly reducing their symptoms. In the not-too-distant future, genetic diseases in humans may be treatable in a similar way, diseases which have stalked us pretty much since there was an "us" — powerful stuff.

The ability to rapidly sequence and analyze entire genomes is enabling us to much more quickly and effectively deal with disease outbreaks. The recent emergence of Ebola in west Africa has enabled geneticists to study the pattern of viral spread, determine where it began and how it is changing as it moves from person to person. This has the potential to affect both clinical testing and vaccine development.

Women are just better. We all know it (though not many are willing to say so, for fear of hurting men's delicate sensibilities), and here's some more evidence: although women seem to carry more mutations associated with abnormal development of the nervous system, they also appear to be less affected by them. Men are just weaker; deal with it, ya crybabies! (And there's an interesting hypothesis developed recently explaining why men die younger than women, and not just because of testosterone-induced stupidity.)

And genetically, what makes men different from women developmentally? Not much, it seems. A very small region of the Y chromosome, called SRY, is enough to turn females into

what look like males. The natural follow-up question? What happens when you remove SRY from males?

Bananas are grown clonally: new plants start out as cuttings of old ones. As a result, there is almost no genetic diversity among commercially-grown bananas. And this is a problem for any species, because it makes them more susceptible to disease. And this is exactly what's threatening the world's banana supply today.

There are 3 billion basepairs in the human genome, which contains roughly 35,000 genes (it's hard to be exact for a lot of reasons, which we'll talk about as the course progresses). For at least some blonds, their hair color arose as the result of a single one of those 3 billion bases changing.

Never let it be said that geneticists aren't concerned about making the world a better place. The first line of this story says it all: " Researchers have created a mutant worm that can never get drunk."

Would you expect that, if you were to study your genes and those of your friends, your genes would be more alike than expected by random chance? It's not like you're related (probably) to them. In some ways this would be surprising, but it's just what researchers have discovered.

Most people wouldn't be surprised to learn that while success in athletics depends not only on training and perseverance, but also on your genes: some people are born with innate advantages in certain sports. It might be more surprising to learn that the same is true for musicians.

Two things: one, even professionals make mistakes. Two, Statistics is Real Important. (read more)

From a few years ago: "Word that genetic researchers had discovered a cell of rice contains more genes than a human cell caused widespread outrage as people across the globe attempted to prove that humans are easily as smart as a grain of rice." (read more)

Study Aids

Promega is a major bioreagent supplier, and they have a number of helpful videos available, including one on the basics of PCR.

The DNA Learning Center at Cold Spring Harbor Laboratory has a number of good animations of molecular genetic techniques, including ones for gel electrophoresis, PCR, and cycle DNA sequencing.

There are several good animations of molecular processes online, including several from Prof. John Giannini at St. Olaf College, including DNA replication, transcription, and translation. Another animation of transcription is at biostudio.com.

In a somewhat lighter vein, here's a link to a classic comparison of genetic and biochemical approaches to a problem.

Classes

Lectures will be held in Collier 202 (Mellon Lecture Hall)
Mondays, Wednesdays, and Fridays, 10:20 am to 11:30 am

Lab

Lab meets in Room 301, Collier Hall of Science

Wednesday afternoons from 1:15 to 4:15
Thursday afternoons from 12:45 to 3:45
Friday afternoons from 1:15 to 4:15

Text

The text required for this course is the 1st edition of *Genetic Analysis: An Integrated Approach*, by Sanders and Bowman, published by Pearson (2012).

For reasons that are not entirely clear to me, Moravian College considers this to be a personal page. Therefore it is incumbent on me to point out that "The views expressed on this page are the responsibility of the author, Christopher Jones (jonesc-at-moravian-dot-edu) and do not necessarily reflect Moravian College or Moravian Theological Seminary policies or official positions."

Course Objectives

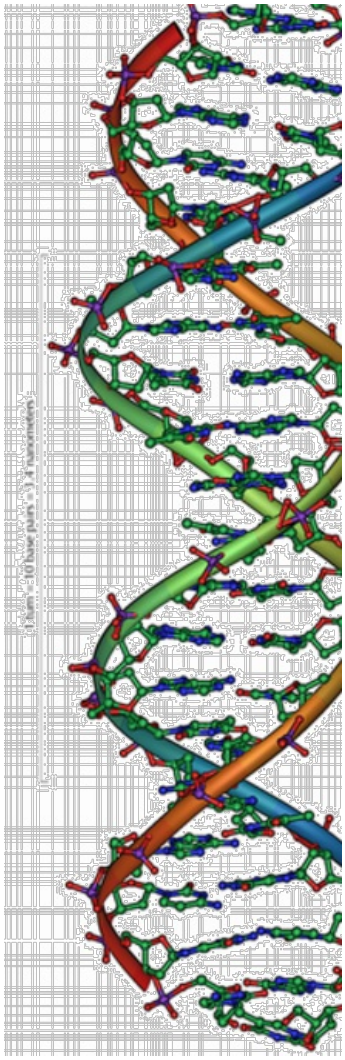
This is a one-semester course intended to give you a solid grounding in genetics, one of the keys (some would indeed argue **the** key) to understanding all the rest of biology. As Thedosius Dobzhansky famously said, "Nothing makes sense except in the light of evolution." Well, evolution doesn't make sense except in the light of genetics!

By the end of the semester, you should have an understanding of (and appreciation for):

- mitosis and meiosis
- the principles governing inheritance
- genetic linkage and recombination
- chromosomal and molecular mutations
- the basic structures and roles of DNA, RNA, and proteins
- the basic molecular processes governing genetic function
- quantitative genetics
- population and evolutionary genetics
- the techniques used in modern genetic investigations
- what kinds of questions can be answered using genetics

You should be able to:

- predict and interpret the outcomes of genetic crosses
- read and understand primary articles in the genetics literature
- articulate current discoveries in genetics research
- understand the principles underpinning basic genetics laboratory techniques
- carry out those well-understood techniques!
- accurately and concisely describe your own research findings
- use a pooter



Course Policies

Below you will find various course policies, including:

- Reading
- Late Assignments
- Extra Credit
- Food
- Cell Phones and their ilk
- Lab Conduct
- Group Lab Reports
- Studying Genetics
- Academic Honesty

Attendance

It's important that you be in class. As you will discover, there will be no lecture notes for me to give you should you miss a meeting, no little PowerPoint handouts. Classes will be devoted to reviewing the topic(s) for the day, informed by your preparatory reading. Needless to say, that reading is critical to your ability to participate in class, clarify any difficulties you're having, and succeed in learning as much as you can about genetics.

Grading

I do not grade on a curve, so I hope that each of you will do your best to help your fellow students: if they benefit, it does you no harm. In fact, one of the best ways to learn something is to explain it to someone else, so talk to your classmates (see "Studying Genetics" below). Grades for this course will be determined as follows:

I'm going to be using the point system for this course, so you don't have to worry about calculating percentages for individual components. I'll try to keep an up-to-date total here on the website, so you can always determine your grade so far by comparing what you've earned with the max possible. (And don't you just hate Max, that little weenie?) Given my grading scale (see below), you can therefore calculate your own grade in the course at any time.

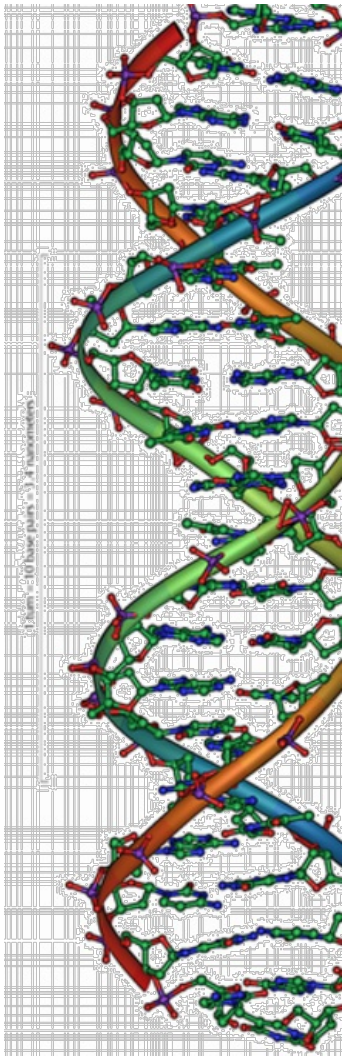
You want to learn genetics. I want to help you learn genetics. It's imortant that you come to class prepared, and I'm going to assume that you will do so. If not — if it becomes clear to me that many of you are not doing the necessary reading before class — I will start giving **quizzes** at the beginning of class. **IF** I give quizzes, they will be very low-impact individually, but how much (if anything) they contribute to your grade will depend on how many there are.

- There will be two **hour exams** in this course, plus a final. Each will focus primarily on the material covered since the previous exam, but anything covered during the semester up to that point is fair game. Yes, that means that the final will be cumulative. Each hour exam will contribute 100 points toward your final grade, and the final exam will contribute 200 points.

  There will be no make-up exams except in cases where I had advanced warning of your missing the exam, or you were unable to notify me due to circumstances beyond your control. Note that in **any** case, I may decide not to allow a make-up exam regardless of circumstance.

- **Homework problem sets** will be assigned. I will be selecting them throughout the semester, based on our pace and what I feel will be most helpful to you. I will assign points to these based on how difficult I feel they are. As I don't have them all mapped out, I can't know how much they will contribute to your final grade, but I estimate around 800 points or so.

- I will give occasional **miscellaneous assignments** over the course of the semester. These will be worth whatever points I announce at the time. I anticipate that there will



be a total of 100 to 200 points in this category by the end of the semester.

- **Class participation** will necessarily be somewhat subjective, but will encompass just that: participating in class. Asking questions, answering questions, being prepared to discuss whatever topics arise, doing your share of the work in lab — you're not children, you should have a reasonable idea of what is meant by the term "participation." I assume a certain amount of participation on everyone's part; I will award up to 25 points for participation "above and beyond" at the end of the semester toward your final grade. Conversely, I will also dock up to 25 points for anyone who is not holding up their end in class.
- **Quizzes** will be given before at least some, perhaps all, labs. They will be intended to make sure that you have read the appropriate background materials; I expect they will contribute about 100 points to your final grade.
- Keeping an accurate, legible, and comprehensible **laboratory notebook** is an ***absolute requirement*** of this course. Electronic lab notebooks are acceptable; for those of you more comfortable with analog notebooks, there should be lab notebooks at the bookstore to use for this course. We will go over some strategies for keeping notes in lab the first week. I will collect the copies (make sure you know how the analog notebook works if you're using one!) throughout the semester; your lab notes will be worth 100 points.
- In addition, I will be asking for **lab reports** for our lab experiments. I anticipate having 7 reports all told, worth a combined total of 700 points. **Laboratory technique** will account for another 100 points of your final grade.

Late assignments — including problem sets — will not be accepted.

In summary, then:

Hour Exams	200 points
Problem Sets	800 points
Misc. Assignments	100-200 points
Lab Quizzes	100 points
Laboratory Notebook, Reports, and Technique	900 points
Final Exam	200 points
Anticipated Total	**2300–2400 points**

I reserve the right to tweak these distributions as I see fit.

Here is the grading scale I use in all my classes:

numeric grade	letter grade
93.3 - 100	A
90.0 - 93.2	A-
86.7 - 89.9	B+
83.3 - 86.6	B
80.0 - 83.2	B-
76.7 - 79.9	C+
73.3 - 76.6	C
70.0 - 73.2	C-
66.7 - 69.9	D+
63.3 - 66.6	D

60.0 - 63.2	D-

Just to review, this is what the Student Handbook has to say about grades:

> **A and A-**
>
> These grades are given for achievement of the highest caliber. They reflect independent work, original thinking, and the ability to acquire and effectively use knowledge.
>
> **B+, B, and B-**
>
> These grades are given for higher than average achievement. Evidence of independent work and original thinking is expected.
>
> **C+, C, and C-**
>
> These grades are given when the student has devoted a reasonable amount of time, effort, and attention to the work of the course and has satisfied the following criteria: familiarity with the content of the course, familiarity with the methods of study of the course, and active participation in the work of the class.
>
> **D+, D, and D-**
>
> These grades are given for unsatisfactory work, below the standard expected by the College. They indicate work which in one or more important aspects falls below the average expected of students for graduation. The work is, however, sufficient to be credited for graduation, if balanced by superior work in other courses.

Note that there isn't a whole lot of emphasis on *knowledge* here (as traditionally defined). Which is odd, but in any event, these descriptions are guidelines, not absolute criteria for a given grade. If you work independently, think originally, and are able to acquire and effectively use knowledge, but don't know squat about genetics at the end of the course, that's simply not "A" work. Context is important, people.

Reading (and Viewing)

In this course, being prepared for each class meeting is critically important. Classtime will be spent discussing the material for that day; I will not be lecturing. If you don't keep up with the reading — and by that I mean **active** reading, not just using a highlighter — and the videos, you won't be able to keep up in class, you won't fully understand what's being taught, the class will rapidly become a waste of time for you.

Late Assignments

Assignments turned in late will not be accepted. Period.

Extra Credit

On a 100-point exam, I will give you 110 points-worth of questions. Thus, you can miss (nearly) 10% of the questions on any hour exam and still get the full 100 points. With the exception of these additional points on exams, I do not anticipate any opportunity for extra credit in this course. Spend your energy learning the course material; "extra credit" in a college course is almost always a sham and a cheat.

Food

No eating in class, unless you can convince me it's medically necessary. *I* don't eat in class!

Cell Phones and Their Ilk

Cell phones, like television, are tools of Satan. They are

without significant positive value in my world and while I don't expect you to share my view of them, I expect you to spare me from being rudely reminded of their existence. If you are expecting an ***urgent*** phone call while in class or lab, alert me to that fact ahead of time. Otherwise, if your cell phone goes off in class or lab, you can expect me to penalize you some number of points, based entirely on my whim. Someday this will be looked on as one of my loveable eccentricities, but until then you'll just have to put up with my sociopathy.

My antipathy extends to Blackberries, iPods, and other such devices as well. If you want to text, tweet, IM, email, browse the web, check your stocks, shop, or do anything else that you feel is more important than paying attention in class, go for it. But don't do it in this class: if I notice anything like that going on, I will fail you. For. The. Course. You have been warned.

Lab Conduct

There is to be ***NO*** food or drink in the lab at ***ANY*** time. Rules have gotten stricter, fines have gotten much higher, and the government is coming after undergraduate institutions like never before. If I see any comestibles or potables in lab you will be docked points in accordance with my mood; if I see you put anything into your mouth, I may well dock you several hundred (yes, *hundred*) points. This is a *serious* infraction of laboratory protocols.

The only thing worse is endangering other students or their data, whether through carelessness or malice. If I find anyone doing something which might result in harm to another student or compromise their experimental results, I will fail the perpetrator for the course. I am by and large a fairly easy-going guy, but there are some things which are simply beyond the pale; this is one of them.

Group Lab Reports

For certain labs I will require group (rather than individual) lab reports. When submitting group reports, please be sure to:

- Use "we," not "I" — this is to be a *group* effort.
- Include the title, date, and the names of your group members.
- Every member of the group must initial the report, indicating that they are satisfied with it and agree to its contents.

If you have any questions about this format, please don't hesitate to ask me.

Studying Genetics

Science is a collaborative venture. I urge you to get together with your fellow students as much as possible to study the material for this course in groups. Discussing problems, studying for exams with other students, and asking each other questions on the reading assignments are all examples of activities which will benefit you and which I encourage. Obviously you cannot consult with others during exams or quizzes, but the homework may be something of a grey area for many of you. For my courses, you must prepare your own answers to assigned problems, but I feel that getting together with other students in the course to discuss and think through problems together is not only perfectly acceptable, it is a very good idea. If you have arrived at what you believe to be the correct answer, put it aside for fifteen minutes before writing it down; this way you can be more confident that you really know what it is you're saying, and your answers won't be identical to your partners'.

Note that the idea of collaborative learning in this way does not mean that you should ask for answers from others who have already taken this or a similar course, nor should you just accept an answer from a classmate whom you think is likely to be right. Everybody is mistaken sometimes, and if you don't understand **why** his or her answer is the right one, well, then you don't understand it. And that is not where you want to be. Conversely, if you're sure you've got the right

answer, don't just tell your study group and be done with it. Try to help them arrive at the same conclusion you did step by step; someone else may come up with a very different view of the problem which forces you to rethink your approach. And rethinking your approach, even if it doesn't turn out to change your mind about your answer, is critical to your success as a scientist.

My concern is not that you "learn" genetics, seeing it as a (very large) pile of facts, but that you **understand** it. Your fellow students and I are resources to help you; it's up to you to do the work necessary to gain that understanding.

You should expect to spend ***at least*** 2 hours studying on your own for every hour in the classroom. At a ***minimum***. That's true for every class, not just mine. If you're content to just slouch through, willing to trade a better grade in the course for whatever you think is more important than your studies, you're welcome to do so. But if you want to excel, not only for the sake of a higher grade on your transcript, but also for the sake of your own intellectual development, you owe it to yourself to put in enough effort that you can honestly say to yourself at the end of the semester, "I did my best, and I learned as much as I could in that course." If you do, I'll do everything I can to make this a worthwhile experience for you.

Academic Honesty

I adhere to the Academic Honesty policy of the College. There is nothing more important to me than personal integrity — not happiness, not power, not even genetics, nothing — and I conduct myself and all of my classes in that spirit. If you're not familiar with College policy, you should be.

Accommodations

Per Moravian College policy: "Students who wish to request accommodations in this class for a disability should contact Ms. Elaine Mara, assistant director of academic support services for academic and disability support, at the lower level of Monocacy Hall, or by calling 610-861-1401. Accommodations cannot be provided until authorization is received from the Academic Support Center."

BIOL210 Genetics

Fall 2014

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Exams

Homework

Quizzes

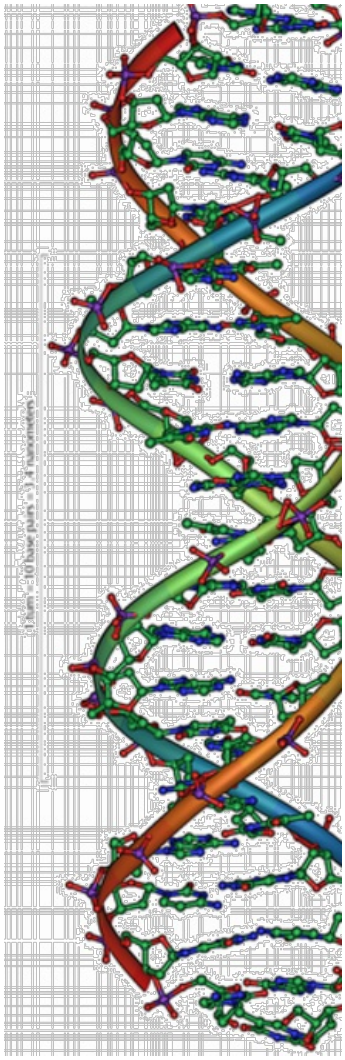
Labs

Prof. Jones

TAs

Syllabus

Meeting number	Date	In-Class	Background Reading
1	Mon., Aug. 25	organizational meeting	
2	Wed., Aug. 27	overview	chapter 1
3	Fri., Aug. 29	bacterial genetics	chapter 6 sections 6.1–6.3
4	Mon., Sept. 1	bacterial & phage genetics	chapter 6 sections 6.4–6.6
5	Wed., Sept. 3	basic Mendelian genetics	chapter 2 sections 2.1–2.3
6	Fri., Sept. 5	probability, χ-square tests, dominance, and recessivity	chapter 2 sections 2.4–2.6
7	Mon., Sept. 8	mitosis & meiosis	chapter 3 sections 3.1–3.3
8	Wed., Sept. 10	sex-linkage	chapter 3 sections 3.4–3.6
9	Fri., Sept. 12	genotypes & phenotypes	chapter 4 sections 4.1–4.2
10	Mon., Sept. 15	gene interactions	chapter 4 sections 4.3–4.4
11	Wed., Sept. 17	genetic linkage	chapter 5 sections 5.1–5.3
12	Fri., Sept. 19	genetic recombination	chapter 5 sections 5.4–5.6
13	Mon., Sept. 22	DNA structure & replication	chapter 7 sections 7.1–7.3
14	Wed., Sept. 24	exam review	
15	Fri., Sept. 26	**hour exam**	chapters 1–6
16	Mon., Sept. 29	DNA replication redux	chapter 7 sections 7.4–7.5
17	Wed., Oct. 1	prokaryotic transcription	chapter 8 sections 8.1–8.2
18	Fri., Oct. 3	eukaryotic transcription	chapter 8 sections 8.3–8.4
19	Mon., Oct. 6	translation	chapter 9 sections 9.1–9.3
20	Wed., Oct. 8	the genetic code	chapter 9 sections 9.4–9.6
21	Fri., Oct. 10	sickle cell disease	chapter 10
	Mon., Oct. 13	No Class (Fall Break)	
22	Wed., Oct. 15	chromosome structure	chapter 11
23	Fri., Oct. 17	mutation	chapter 12 sections 12.1–12.4

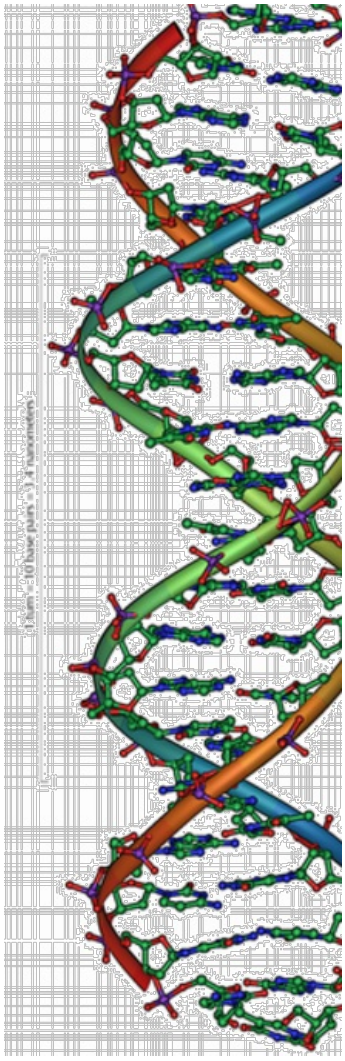


24	Mon., Oct. 20	DNA repair	chapter 12 sections 12.5–12.8
25	Wed., Oct. 22	chromosomal aberration	chapter 13 sections 13.1–13.3
26	Fri., Oct. 24	chromosome breakage & transposition	chapter 13 sections 13.4–13.7
27	Mon., Oct. 27	gene regulation I	chapter 14 sections 14.1–14.4
28	Wed., Oct. 29	gene regulation II	chapters 14 & 15 sections 14.5, 14.6, & 15.1
29	Fri., Oct. 31	gene regulation III	chapter 15 sections 15.2–15.3
30	Mon., Nov. 3	recombinant DNA technology	chapter 16
31	Wed., Nov. 5	exam review	
32	Fri., Nov. 7	**hour exam**	chapters 7–15
33	Mon., Nov. 10	creating transgenic organisms	chapter 17 section 17.1
34	Wed., Nov. 12	reverse genetics	chapter 17 sections 17.2–17.5
35	Fri., Nov. 14	genomics	chapter 18
36	Mon., Nov. 17	organellar inheritance & evolution	chapter 19
37	Wed., Nov. 19	developmental genetics	chapter 20
38	Fri., Nov. 21	quantitative traits	chapter 21 sections 21.1–21.3
39	Mon., Nov. 24	Hardy-Weinberg equilibrium	chapters 21 & 22 sections 21.4, 22.1, & 22.2
	Wed., Nov. 26	No Class (Thanksgiving Break)	
	Fri., Nov. 28	No Class (Thanksgiving Break)	
40	Mon., Dec. 1	genetics & evolution	chapter 22 sections 22.3–22.8
41	Wed., Dec. 3	"A Single Amino Acid Mutation Contributes to Adaptive Beach Mouse Color Pattern"	Hoekstra *et al*. (2006) *Science* **313**:101–104
42	Fri., Dec. 5	"A Single Amino Acid Mutation Contributes to Adaptive Beach Mouse Color Pattern"	Hoekstra *et al*. (2006) *Science* **313**:101–104
	Mon., December 8 8:30 am	**FINAL EXAM**	

Life is fluid, so this syllabus is subject to change. I may have to change the syllabus to best help you learn about genetics, but this is certainly preferable to rigidly adhering to some timetable in lockstep. So come to class and you'll always know what's going on with the syllabus; changes will of course also be posted here, but you should be in class anyway!

Lab Syllabus

Week	Date	Activity	Preparatory Materials
1	Aug. 27–29	Lab orientation & overview handling flies (1) examine wild-type flies and begin life-cycle observations	"In the Laboratory of Agassiz"
2	Sept. 3–5	(1) continue life-cycle observations (2) discuss plant sample collection (3) examine & score "alphabet" mutants	
3	Sept. 10–12	**(1) *Drosophila* life cycle report due** (2) extract genomic DNA from plant sample review fly genetic nomenclature (3a) review & set up "alphabet" mutant mapping cross 1	barcodebkgrnd.pdf (on Google Drive) plantDNAprep.pdf (on Google Drive) video on Drosophila genetic nomenclature instructions for the format for life cycle report
4	Sept. 17–19	(2) run PCR reaction on plant DNA sample for *rbcL* gene	review the basics of PCR before lab (e.g. text pp. 248–250 and here)
5	Sept. 24–26	(2) agarose gel analysis of plant PCR amplicons (3a) examine & score mapping cross 1 F_1 flies (3b) review & set up "alphabet" mutant mapping crosses 2 & 3	review gel electrophoresis (e.g. text pp. 335–338 and here)
		Here are the plant PCR barcoding gels.	
6	Oct. 1–3	sequence analysis tutorial	review BLAST and probability [Note that this week lab will meet in Collier 210A on Wednesday and Thursday, and PPHAC 112 on Friday]
7	Oct. 8–10	(2) analyze *rbcL* gene sequence data (3a) score mapping cross 1 progeny (3b) set up mutant mapping crosses 2 & 3 F_1 crosses	
8	Oct. 15–17	(4) review & set up mutant recombination mapping cross (cross 4)	



9	Oct. 22–24	**(2) plant identification report due** (3b) score mapping crosses 2 & 3 progeny	
10	Oct. 29–31	(4) examine & score mapping cross 4 F_1 flies; set up F_1 cross	
11	Nov. 5–7	**(3) alphabet mutant mapping report due** (5) collect human genomic DNA; set up PCR reactions	
12	Nov. 12–14	(4) score mapping cross 4 progeny (5) carry out restriction digests on PCR amplicons	review restriction digestion and RFLPs (text pp. 340–343)
13	Nov. 19–21	(5) run electrophoresis gels on digested amplicons	
14	Nov. 26–28	[no lab — Thanksgiving break]	
15	Dec. 3–5	**(4) recombination mapping report due** **(5) blood typing report due**	

Life is fluid, so this syllabus is subject to change. I don't anticipate any significant deviations, but remember that it's written in electrons, not stone.

Prof. Jones

If you ever have questions that you can't answer yourself using the textbook, the Web, or even (gasp!) *thinking*, realize that there are a lot of additional resources available to you: your classmates and me. Don't be shy about asking for help. This is part of my job, and one which I don't shirk. Depending on what the problem is, the most reliable method to contact me is probably email (I sometimes don't realize I have voicemail for a day or two). My email address is cjones [at] moravian [dot] edu and my office (and lab) phone number is 610-861-1614.

If you need to speak with me sometime when I'm not on campus (a rare event!), call me at home any time between 9 am and 9 pm. Students often tell me they don't feel comfortable calling me at home because they think I mind. Consider the logic here: there's nothing that says I have to give you my home phone number, yet I have done so in class. So ***why*** would I give you that number if I didn't want you to use it? Note that "use" is not the same thing as "abuse": don't call me at 3 am the day before an assignment is due and expect much sympathy (or pleasant conversation)!

Here's a copy of my current class schedule. My official office hours are from 11:30 am to 12:30 pm Mondays. If I'm not in my office (Room 310, Collier Hall of Science), try my lab (Room 233, Collier Hall of Science — between the elevator and the loading dock on the main floor). That said, my office hours are really a formality; feel free to get hold of me any time; if I can't spare the time to talk then, I'll tell you so, and we can set up an appointment at our mutual convenience.