

# Welcome to Bioinformatics!

TR: 11:00 – 12:15 am  
JA 101

BIOL 435, BIOL 535, BIOT 535



## Instructor:

Dr. Joel Sharbrough  
<http://sharbroughlab.com/>

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## Zoom:

[Zoom link](#)

**Office Hours:** TWR 3 – 4pm

# Learning Objectives:

- Understand and assess homology
- Analyses of multiple sequence alignments
- Manage, manipulate, and assess quality of large datasets (e.g., Next-Gen Sequencing)
- Perform variant calling and associated analyses of genotypes
- Confidence to learn new and useful techniques

# **Grading:**

<u>Item</u>	<u>BIOL 435</u>	<u>BIOL 535</u>
Participation	20%	20%
Homeworks (15)	60%	50%
Scientific Writing Assignments* (2)	20%	20%
Project Presentation**	-	10%

# Grading:

<u>Item</u>	<u>BIOL 435</u>	<u>BIOL 535</u>
Participation	20%	20%

**ATTEND CLASSES, READINGS, CLASS/GROUP DISCUSSIONS,  
ASKING QUESTIONS, READING PROMPTS**

# Grading:

<u>Item</u>	<u>BIOL 435</u>	<u>BIOL 535</u>
Participation	20%	20%
Homeworks (15)	60%	50%

**DUE SUNDAY NIGHTS AT 11:59PM**

# Grading:

<u>Item</u>	<u>BIOL 435</u>	<u>BIOL 535</u>
Participation	20%	20%
Homeworks (15)	60%	50%
Scientific Writing Assignments* (2)	20%	20%

- (1) 5:00pm on FRIDAY, MARCH 11<sup>th</sup>  
(2) 5:00pm on WEDNESDAY, MAY 4<sup>th</sup>

# Grading:

<u>Item</u>	<u>BIOL 435</u>	<u>BIOL 535</u>
Participation	20%	20%
Homeworks (15)	60%	50%
Scientific Writing Assignments* (2)	20%	20%
Project Presentation**	-	10%

**UPLOAD TO CANVAS by 11:59PM APRIL 25<sup>th</sup>**

# Class Project:

- I'll present three project ideas, We'll vote as a class on the right one to pursue.
- I'll outline steps needed to complete the project, assign roles based on experience/interest
- Data needs to be uploaded to Canvas by **5pm Friday April 22<sup>nd</sup>**
- Presentation needs to be uploaded to Canvas by **11:59 pm Monday April 25<sup>th</sup>**
- If the results are interesting, we'll submit it for publication

"The best thing for being sad," replied Merlyn, beginning to puff and blow, "is to learn something. That is the only thing that never fails. You may grow old and trembling in your anatomies, you may lie awake at night listening to the disorder of your veins, you may miss your only love, you may see the world about you devastated by evil lunatics, or know your honour trampled in the sewers of baser minds. There is only one thing for it then—to learn. Learn why the world wags and what wags it. That is the only thing which the mind can never exhaust, never alienate, never be tortured by, never fear or distrust, and never dream of regretting. Learning is the thing for you. Look at what a lot of things there are to learn—pure science, the only purity there is. You can learn astronomy in a lifetime, natural history in three, literature in six. And then, after you have exhausted a milliard lifetimes in biology and medicine and theocriticism and geography and history and economics—why, you can start to make a cartwheel out of the appropriate wood, or spend fifty years learning to begin to learn to beat your adversary at fencing. After that you can start again on mathematics, until it is time to learn to plough."

(from *The Sword in the Stone*, by T H White)

# What is Bioinformatics?

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The use of computers  
to analyze **biological data**

# Questions?

What is coding?

Do I need to know how to do it  
to succeed in this class?

# HW assignment #0 (by Friday 5pm 1/21):

- Obtain a GitHub account
- Navigate to the course [GitHub Page](#)
  1. Create a new branch
  2. Make an **edit** to the README to introduce yourself to the class
  3. **Merge** the branch with the main page

Google Form

# Coming up next: Homology & BLAST searching

- Bring your device
- HW #1: Homology & BLAST searching due Sunday 01/23 at 11:59PM