BIOTECHNOLOGY *BCMB (BTEC, ENTO) 4200/6200* ***SPRING SEMESTER 2022***

Course Coordinators: Michael Adang adang@uga.edu Michael Pierce hawkeye@uga.edu

Life Sciences C127 11:10 to 12:25 Tuesdays and Thursdays

Date			
1/11 (Tu) 1	Introduction to Biotechnology		Adang/Pierce
1/13 (Th) 2	Biotech stock watch assignment; Overview of Biotechnology companies		Pierce
1/18 (Tu) 3	DNA Sequencing and Functional Genomics		Adang
1/20 (Th) 4	Functional Genomics, Part 2		Adang
1/25 (Tu) 5	Biomanufacturing &Bioprocessing		Blum
1/27 (Th) 6	Genome Editing	Comments on EXAM	Adang
2/1 (Tu) 7	Synthetic Biology	--HANDOUT TAKE-HOME EXAM	Adang
2/3 (Th) 8	Natural Product & H-T Drug Discovery		Cassera
2/8 (Tu) 9	Engineering Mosquitoes for Human Disease Suppression		Adang
2/10 (Th) 10	**EXAM I**	**TAKE HOME EXAM DUE Upload to eLC Assignments**	
2/15 (Tu) 11	GMO Plants I		Parrott
2/17 (Th) 12	GMO Plants II		Parrott
2/22 (Tu) 13	The story of Bt plants and BtBooster	**TEAM PROJECT and ASSIGNMENTS**	Adang
2/24 (Th) 14	Biotechnology of Plastic production and remediation		Adang
3/1 (Tu) 15	The Story of Femasys	--HANDOUT TAKE-HOME EXAM	Sepsick
3/3 (Th) 16	Mechanisms of antibiotic resistance		Quinn
3/8 (Tu) 17	SPRING BREAK		
3/10 (Th) 18	SPRING BREAK		
3/15 (Tu) 19	**EXAM II**	**TAKE HOME EXAM II DUE Upload to eLC assignments**	
3/17 (Th) 20	Vaccine biotech		Harn
3/22 (Tu) 21	Fighting Global diseases using biotechnology		Adang
3/24 (Th) 22	Stem Cell Biotechnology		Pierce
3/29 (Tu) 23	Inexpensive glycoconjugate vaccines for livestock		Szymanski
3/31 (Th) 24	Biomedical Biotech I		Pierce
4/5 (Tu) 25	Biomedical Biotech II		Pierce
4/7 (Th) 26	Biomedical Biotech III		Pierce
4/12 (Tu) 27	Cancer therapeutics and Wrap-up	**STOCK PROJECT DUE**	Pierce
4/14 (Th) 28	Team Presentations	**HAND OUT THIRD TAKE HOME EXAM**	
4/19 (Tu) 29	Team Presentations		
4/21 (Th) 30	Team Presentations		
4/26 (Tu) 31	Team Presentations		
4/28 (Th) 32	Team Presentations		

5/3 (Tu) 33 **EXAM III. TAKE HOME EXAM DUE** Upload exam as pdf file to cLC. Details for uploading will be provided.
Honors Option and 6200 student papers due Upload paper as a pdf file to eLC. Details for uploading will be provided.

5/16 (Mon) Grades Due 12:00 pm (Noon)
5/17 (Tues) Student grades available in Athena

Grades will be determined by the following percentages:

5%	Stock Project assignment
30%	Exam I
30%	Exam II
30%	Exam III
5%	Team Presentation
100%	

- **Class Format**. Presentations will be delivered from C127 unless otherwise noted on the syllabus or via notices on eLC.
- **Class attendance.** While the need for students to quarantine or isolate due to COVID-19 will continue, students are expected to attend class in Life Sciences C127. Students who are showing infectious disease symptoms or have other legitimate excuses for not attending class in C127 must send an email to Dr. Pierce prior to class. A specific Zoom link for the class in question will be sent to the student. Powerpoint presentations from each class will be posted on eLC. A good strategy is to take notes in class during the presentations and then review these with the posted slide presentations.
- **Social Distancing and Masks in the classroom.** We encourage the wearing of masks and spreading out in the classroom as much as possible to minimize the risk of viral transmission.
- **Class participation.** The classes in this course are organized around the premise that students will use web-based tools to understand topics of biotechnology discussed in the class and will read assigned scientific papers and reviews. We strongly encourage students to ask questions during and after the lecture in person or on-line via Zoom
- **Exams.** Each exam will be 100 points, split between 25 multiple choice questions worth 2 pts each and two written, take-home questions worth 25 pts. each.
- **Team Project.** Team members are randomly assigned by course coordinators. Each team can claim as proprietary intellectual property any published intellectual property or patent that appeared in the literature since 2016. Each team will present a document consisting of Executive Summary, very basic Business Plan, and Research and Development Plan. The team will also give a 20 minute class presentation with Powerpoint to resemble an actual presentation to potential investors including scientists or a partner scientific company, and all members of the team must present to the class. Students hearing the presentation will critique and score each presentation, along with the faculty coordinators. Coordinators will provide assistance in choosing a topic and directing students to appropriate resources, including other University faculty. Details concerning the project will be discussed later in the semester, and sample documents and presentations from years past will be made available.
- **Plagiarism.** FOR ALL OF YOUR WRITTEN ASSIGNMENTS: IT IS NOT PERMISSIBLE TO COPY OR CUT AND PASTE WORDS OR FIGURES WITH NO REFERENCES. It is permissible to quote authors and provide a full reference to the quote. If we find a case of plagiarism on any of your assignments, you will receive an F on that assignment. When in doubt, reference. When you are answering a question, do not simply paste quotations together. An occasional quotation is acceptable, but you need to synthesize what others have written and give the answer in your own words (along with your own thoughts and creativity). We are looking for depth of understanding and amount of effort you expended in researching and writing your answers.
- ***UGA Student Honor Code:*** *"I will be academically honest in all of my academic work and will not tolerate academic dishonesty of others." A Culture of Honesty, the University's policy and procedures for handling cases of suspected dishonesty, can be found at www.uga.edu/ovpi.*
- **Honors Credit.** BCMB4200 and BTEC4200 are available for Honors Credit.

Presenters:

Michael Adang, Professor, Depts. of Entomology, and Biochemistry and Molecular Biology, UGA. Biological Sciences Rm 427. Phone 542-2436
David Blum, Dept. Biochemistry and Molecular Biology, Director, Bioexpression and Fermentation Facility
Maria B. Cassera. Associate Professor, Dept. of Biochemistry and Molecular Biology
Donald Harn, Professor, Dept. of Infectious Diseases, Vet School, UGA
Wayne Parrott, Professor, Institute of Plant Breeding and Genetics, UGA
Michael Pierce, Professor, Dept. of Biochemistry and Molecular Biology, UGA. CCRC Rm 3056. 542-1702
Fred Quinn, Professor, Dept. of Infectious Diseases, Vet School, UGA
Kathy Lee and Kayla Sepsick, CEO, Founder, and Project Manager, respectively, Femysis, Inc.
Christine Szymanski, Professor, Dept.of Microbiology, CCRC, UGA

CORONAVIRUS INFORMATION FOR STUDENTS

UGA adheres to guidance from the University System of Georgia and the recommendations from Georgia Department of Public Health (DPH) related to quarantine and isolation. Since this may be updated periodically, we encourage you to review the latest guidance here. The following information is based on guidance last updated on December 29, 2021.

Face coverings:
Following guidance from the University System of Georgia, face coverings are recommended for all individuals while inside campus facilities.

How can I obtain the COVID-19 vaccine?
University Health Center is scheduling appointments for students through the UHC Patient Portal (https://patientportal.uhs.uga.edu/login_dualauthentication.aspx). Learn more here – https://www.uhs.uga.edu/healthtopics/covid-vaccine.

The Georgia Department of Health, pharmacy chains and local providers also offer the COVID-19 vaccine at no cost to you. To find a COVID-19 vaccination location near you, please go to: https://georgia.gov/covid-vaccine.

In addition, the University System of Georgia has made COVID-19 vaccines available at 15 campuses statewide and you can locate one here: https://www.usg.edu/vaccination

What do I do if I have COVID-19 symptoms?
Students showing COVID-19 symptoms should self-isolate and get tested. You can schedule an appointment with the University Health Center by calling 706-542-1162 (Monday-Friday, 8 a.m.-5p.m.). Please DO NOT walk-in. For emergencies and after-hours care, see https://www.uhs.uga.edu/info/emergencies.

What do I do if I test positive for COVID-19? (Isolation guidance)
If you test positive for COVID-19 at any time, either through a PCR test, an Antigen test, or a home test kit, you are **required to report it** through the DawgCheck Test Reporting Survey. Follow the instructions provided to you when you report your positive test result in DawgCheck.

As of December 29, 2021, when an individual receive a positive COVID-19 test: Everyone, **regardless of vaccination status,** should:

- Stay home for 5 days.
- If you have no symptoms or your symptoms are resolving after 5 days, you can leave your house and return to class.
- Continue to wear a mask around others for 5 additional days.

What do I do if I have been exposed to COVID-19? (Quarantine guidance)
If you have been exposed (within 6 feet for a cumulative total of 15 minutes or more over a 24-hour period – unmasked**) to someone with COVID-19 or to someone with a positive COVID-19 test and you are:

- Boosted, or have become fully vaccinated within the last 6 months (Moderna or Pfizer vaccine) or within the last 2 months (J&J vaccine)
    - You do not need to quarantine at home and may come to class.
    - You should wear a mask around others for 10 days.
    - If possible, get tested on day 5.
    - If you develop symptoms, get tested and isolate at home until test results are received, then proceed in accordance with the test results.
- Unvaccinated, or became fully vaccinated more than 6 months ago (Moderna or Pfizer vaccine) or more than 2 months ago (J&J vaccine) and have not received a booster:
    - You must quarantine at home for 5 days. After that you may return to class but continue to wear a mask around others for 5 additional days.
    - If possible, get tested on day 5.
    - If you develop symptoms, get tested and isolate at home until test results are received, then proceed in accordance with the test results.

** "Masked-to-masked" encounters are not currently considered an exposure; this type of interaction would not warrant quarantine.

You should report the need to quarantine on DawgCheck (https://dawgcheck.uga.edu/), and communicate directly with your faculty to coordinate your coursework while in quarantine. If you need additional help, reach out to Student Care and Outreach (sco@uga.edu) for assistance.

Well-being, mental health, and student support

If you or someone you know needs assistance, you are encouraged to contact Student Care & Outreach in the Division of Student Affairs at 706-542-7774 or visit https://sco.uga.edu/. They will help you navigate any difficult circumstances you may be facing by connecting you with the appropriate resources or services. UGA has several resources to support your well-being and mental health: https://well-being.uga.edu/

Counseling and Psychiatric Services (CAPS) is your go-to, on-campus resource for emotional, social and behavioral-health support: https://caps.uga.edu/, TAO Online Support (https://caps.uga.edu/tao/), 24/7 support at 706-542-2273. For crisis support: https://healthcenter.uga.edu/emergencies/.

The University Health Center offers FREE workshops, classes, mentoring and health coaching led by licensed clinicians or health educators: https://healthcenter.uga.edu/bewelluga/

Monitoring conditions:

Note that the guidance referenced in this syllabus is subject to change based on recommendations from the Georgia Department of Public Health, the University System of Georgia, or the Governor's Office. For the latest on UGA policy, you can visit coronavirus.uga.edu.