

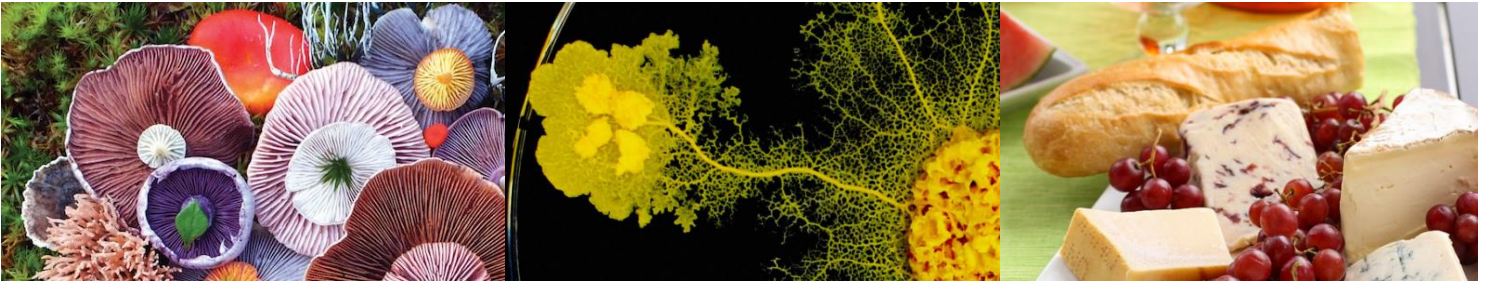
EVPP / BIOL 408-002

# Mushrooms, Molds and Society

Spring 2022

M 4:30-5:45 Peterson Hall 1106

W 4:30-5:45 online



Nature Medley, by Jill Bliss on my ModernMet.com; Physarium Polycephalum by Audrey Dussutour, CNRS, on Quanta Magazine; Cheese plate by Julie Ruble, WillowbirdBaking.com

Instructor: Dr. Natalie Howe

Office hours: by appointment on Mondays, 6pm-7pm, or online as requested

Email: [nhowe4@gmu.edu](mailto:nhowe4@gmu.edu)

## Course Description and Learning outcomes:

In this course we will explore the diverse and intriguing world of the fungi; how we interact with the fungi every day and how they shape the world around us in seen and unseen ways.

Students will:

- Find and use a variety of sources including scientific sources, popular sources, and alternative ways to knowing to increase understanding of biology, ecology, and uses of fungi.
- Demonstrate understanding of fungal diversity, physiology, and role in ecosystem processes and society.
- Consider, appreciate, and communicate a variety of perspectives on how the study of fungi relates to other fields.

## Course Website:

Blackboard 9.1 will be used for this course. You can access the site at <http://mymasonportal.gmu.edu>. Login and click on the “Courses” tab. You will see EVPP/BIOL 408 course; username and passwords are the same as your Mason email account) You must have consistent access to an internet connection in order to complete the assignments in this course through Blackboard. Announcements, readings, lecture slides, assignments and discussion boards will be posted on Blackboard. Students should check Blackboard and their Mason email regularly for updates.

**Required texts:** None

**Recommended readings are posted every week. Other recommended texts include:**

- \* Sheldrake, Merlin. 2020. How Fungi Make Our Worlds, Change our Minds, and Shape our Futures.
- \* Money, Nicholas. 2006. The Triumph of the Fungi: A Rotten History
- \* Pollan, Michael. 2018. How to Change your Mind: What the New Science of Psychedelics Teaches us About Consciousness, Dying, Addiction, Depression and Transcendence
- \* Stamets, Paul. 2005. Mycelium Running: How Mushrooms Can Help Save The World



## Course Work (Approximate)

### Weekly items:

- **Class Participation** (not graded). Much of the course is discussion-based and requires your input in order to be a robust and exciting experience, so students should come to class prepared with a discussion question about the topic.
- **Blackboard discussion board** (10%). The online discussion board is an important way to practice crafting an argument using reliable outside sources.

### Assignments:

- **Fungus of the Day** (5%). Once, during the semester, you will start the class with information on a fungus you find intriguing.
- **Sources Worksheet** (5%). Any modern scientific work relies on previous projects to inform its guiding questions and its methodological approaches. So that your class contributions will properly reflect these contributions from others, the class will involve these exercises that will familiarize you with standardized methods of citing sources.
- **Fungi Worksheets** (5% each x 3 worksheets, total 15%). These activities will give you hands-on experience in some of the main aspects of fungal ecology.

- **Mycologist Profile (10%)** This 2 page paper is a chance for your to explore some contributions of academics and non-academics to the field of mycology.
- **Fungal Conservation paper (10%)** This 2 page paper prompts you to conduct research on fungal species that is threatened and compare its ecology with a species of least concern.

**Semester-long projects:**

- **Wikipedia editing (15%)**. Students give back to the online community and elaborate on a topic in mycology not currently covered in Wikipedia
- **GMU mycoblitz inaturalist project (15%)**. Document the biodiversity around you using i-Naturalist. All students should document 20 taxa for full credit, but prizes will be given at the end of the semester for more observations.
- **Science Communication Project (15%)**. You reflect on existing science communication related to mushrooms, and will an alternative scientific communication approach (infographic/poster, website, video) on a topic of your choosing that demonstrates understanding of the topic and that clearly and compellingly conveys the material to members of the public. This assignment includes a 2 page paper and a presentation.

**Week Structure:**

I think of this course in 2 parts: the “in-class” time (whether it’s online or in person) where we engage with each other and talk about mycology (a total of 3 hours per week), and the “out of class” time where you learn on your own, by reading and writing assignments (minimum 3 hours per week). I think the space where you learn on your own can be the most productive and rewarding part of the class, but I also think, since you can schedule it “whenever”, it can often get passed over for more obvious commitments. So I wanted to propose what I think is a good way to stay on top of all the parts of the class so you learn about mushrooms, molds, and society in as low-stress a way as possible.

	Monday	Tuesday	Wednesday	Thursday	Friday
Out of class	Review Slides Main discussion board post	Reading		Discussion board responses	Turn in assignments
In class	In-person class		Online class		

Slides – I ask you to look over slides at the beginning of the week, so we can discuss the parts you find most interesting in class.

Reading – Each week there’s one reading that will complement the activity and lecture that week– there are also other optional readings if you’d like to go in depth on a topic.

## Course Schedule (subject to change)

Online days in grey – class meeting elsewhere in yellow

Week	Date	Topic	Items due*
1	Jan 24	Introductions to each other and the course	
	Jan 26	Fungi in ecosystems – overview	
	Jan 28		Plagiarism Assignment
2	Jan 31	Basidiomycetes - lab	
	Feb 2	Basidiomycetes – online discussion	
	Feb 4		Basidiomycetes Lab (Begin Wikipedia)
3	Feb 7	Ascomycetes & Zygomycetes lab	
	Feb 9	Ascomycetes – online discussion	
	Feb 11		Ascomycete Worksheet, Install R program
4	Feb 14	Assessing fungal diversity - Intro	
	Feb 16	Assessing fungal diversity	
	Feb 18		Fungal Diversity Worksheet
5	Feb 21	Mycorrhizae lecture	
	Feb 23	Mycorrhizae jigsaw discussion	
	Feb 25		Draft Wikipedia article Due
6	Feb 28	Lichen walk	
	Mar 2	Lichen lecture	
	Mar 4		Inaturalist profile w/ 5 fungi
7	Mar 7	Herbarium tour	
	Mar 9	Plant Pathogens lecture	
	Mar 11		Herbarium worksheet
Spring Break: Mar 14 – Mar 20			
8	Mar 21	Fungi and animals jigsaw discussion	
	Mar 23	Fungi and animals lecture/discussion	
	Mar 25		Mycologist Profile Due
9	Mar 28	Fungal food/medicine jigsaw discussion	
	Mar 30	Fungal food/medicine lecture/discussion	
	April 1		Science Communication idea
10	April 4	Human disease activity	
	April 6	Human disease lecture/discussion	
	April 8		Turn in Wikipedia Edits
11	Apr 11	Industrial uses of fungi lecture/discussion	
	April 13	Genetic engineering fungi lecture	
	April 15		
12	Apr 18	Science communication projects	Sci. Communication presentation
	Apr 20	Science communication projects	Sci. Communication presentation
	Apr 22		Finish I-naturalist
13	Apr 25	Fungal conservation IUCN activity	
	April 27	Fungal conservation lecture/discussion	
	April 29		Fungal Conservation Paper
14	May 2	Fungi in art discussion	
	May 4	Review class	

Discussion board and fungus of the day assignments will be due on different days for different students.



*Hygrocybe appalachensis* by Walter on NJMA(FB)



*Mycena* sp. by Alan Rockefeller on NJMA (FB)

## Course Policies and Expectations

1. Respect: We expect all participants to treat each other with respect, and will discuss the details of that expectation in the first meeting of the class.
2. Attendance: Class attendance is important for building our mycology community, but your health comes first (mental and physical health), so please let Natalie know if you'll miss (virtual or in-person) class meetings
3. Grading: The letter grade will be determined at the end of the semester by the percentage of points you earn during the semester according to the following scale: 100-90%= A 89-80%= B 79 -70%= C 69-60%= D 59% or below = F
  - a. Grades will be posted on Blackboard.
  - b. Due dates: Some assignments have due dates on the syllabus, and for other assignments, different students will have different due dates for those projects. If you need extensions, or have a conflict or other issue, let Natalie know ahead of time.
4. Communication:
  - a. Office Hours: I will be available by appointment to meet with students on Mondays
  - b. E-mail: This is my primary form of personal communication with students so it is essential to use and check your Mason e-mail account regularly for all communication regarding this course.





*Xylaria liquidambar* on a *Liquidambar styraciflua* by Byron Meade (FB) Kentucky, USA



*Hypogymnia* and *Lachnellula* by Jeff Hollett (FB) Newfoundland, Canada



*Cladonia* by Darrel Thompson on Lichens Connecting People( FB)

## University Policies

### 1. Disability Accommodation:

Disability Services at George Mason University is committed to providing equitable access to learning opportunities for all students by upholding the laws that ensure equal treatment of people with disabilities. If you are seeking accommodations for this class, please first visit <http://ds.gmu.edu/> for detailed information about the Disability Services registration process. Then please discuss your approved accommodations with me. Disability Services is located in Student Union Building I (SUB I), S 2500. Email: [ods@gmu.edu](mailto:ods@gmu.edu) | Phone: (703) 993-2474.

### 2. Academic Integrity

Students at George Mason University should maintain a high standard of honesty in scholastic work. As members of the university community, students have a responsibility to be familiar with the University Honor Code and the guidelines regarding academic integrity. Among the conduct issues addressed are acts of academic dishonesty, including plagiarism or cheating on assignments, examinations, or other academic work, or without prior approval of the instructor, and submitting work already done for another course. Students should avoid all forms of academic dishonesty, including, but not limited to:

1. Plagiarism
2. Cheating
3. Stealing
4. Lying

See: <https://oai.gmu.edu/mason-honor-code/> for specific details.

### 3. Sexual Harassment, Sexual Misconduct, and Interpersonal Violence

George Mason University is committed to providing a learning, living and working environment that is free from discrimination and a campus that is free of sexual misconduct and other acts of interpersonal violence in order to promote community well-being and student success. We encourage students who believe

that they have been sexually harassed, assaulted or subjected to sexual misconduct to seek assistance and support.

As a faculty member and designated “Responsible Employee,” I am required to report all disclosures of sexual assault, interpersonal violence, and stalking to Mason’s Title IX Coordinator per university policy 1412. If you wish to speak with someone confidentially, please contact the Student Support and Advocacy Center (703-380-1434), Counseling and Psychological Services (703-993-2380), Student Health Services, or Mason’s Title IX Coordinator (703-993-8730; [cde@gmu.edu](mailto:cde@gmu.edu)).