

University of Mary Washington

Department of Chemistry

FSEM 100P6.02: Science and Technology - Because we can, should we?

Fall 2019

Section 2

Instructor: Dr. Randall D. Reif
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Office Hours: Mondays 1:30-3:30 PM
Wednesday 1:30-3:30 PM
Thursday 2:00-3:00 PM
Other times by appointment.
I also have an open door policy-drop by anytime my door is open!

Class Times: M, W, F 12:00 – 12:50 PM Jepson 423

Important People and/or Resources

Peer Mentor Anna Beth Tanner, Biology major, Environmental Sustainability & Digital Studies minors, atanner2@mail.umw.edu, 540-735-5249

Librarians Peter Catlin, Reference Librarian and Coordinator of First-Year Programs, pcatlin@umw.edu; 540-654-2438

Rosemary Arneson, University Librarian,
rarneso3@umw.edu; 540-654-1147

Writing Center The Writing Center offers free writing consultations for students at all levels and in all disciplines. No matter what you're writing and no matter where you are in the process (generating ideas, drafting, revising or proofreading), the peer tutors can assist you. The writing center is located in room 430 of the HCC. You may reach the writing center through their website at <http://academics.umw.edu/writing-fredericksburg/> or by calling 540-654-1036.

Speaking Center The Speaking Center offers help to plan and practice presentations a variety of oral presentations as well as other speaking assignments. The Speaking Center is located in room 437 of the HCC. You may reach the speaking center through their website at

<http://academics.umw.edu/speaking/speaking-center/> or calling 540-654-1347.

Digital Knowledge Center The Digital Knowledge Center (DKC), located in HCC 408, provides UMW students with peer tutoring on digital projects and You can schedule a tutorial at <http://dkc.umw.edu>; while appointments are not required, they are recommended. Tutorials cover a wide-range of topics related to common digital systems, technologies, new media, and tools used in courses at UMW.

Academic Services Charles Tate works with our FSEM. You can contact him at ctate@umw.edu.

Career Services Please [book an appointment](#), give us a call at 540-654-5646, or stop by the Center for Career and Professional Development (UC Suite 206) to make an appointment. For quick and easy questions, feel free to email us at ccpd@umw.edu

Required Course Materials:

The Immortal Life of Henrietta Lacks by Rebecca Skloot, Crown Publishers, 2010. ISBN: 978-1-4000-5217-2.

Brutes or Angels: Human Possibility in the Age of Biotechnology by James T. Bradley, University of Alabama Press, 2013. ISBN-13:9780817317881.

Articles and readings as assigned. **They will be posted on Canvas throughout the semester. All assigned readings for a particular day should be read prior to that day's class and are "fair game" for discussion, pop quizzes, exams and presentations.**

Course Prerequisites

None.

Learning Outcomes

This FSEM will:

- Utilize active, discussion-based, participatory learning,
- Be exploratory in nature, rather than just presenting conclusions;
- Revolve around reading primary literature;
- Synthesize material from multiple sources to aid student development of his/her own views on the topics covered;
- Articulate the value a liberal arts education as a multidisciplinary, systematic approach to knowledge.

All students will:

- Utilize a variety of research techniques to retrieve information efficiently, evaluate retrieved information, and synthesize information effectively to support his/her messages or arguments;
- Improve development and organization of written arguments;
- Demonstrate the ability to edit and revise in the writing process;
- Apply the basic theories and principles of oral communication;
- Communicate effectively in a variety of settings, including public speaking and group discussions;
- Apply specific academic solutions to broader, interdisciplinary fields of study;
- Integrate multiple viewpoints involving different cultures and/or perspectives.

Course Objectives

1. Develop the ability to acquire appropriate scholarly resources for different tasks.
 - a. Distinguish between types of information sources
 - b. Select information sources relevant to topic/work
 - c. Identify and Use library resources
 - d. Critically examine validity of all sources
2. Demonstrate the ability to communicate results in both written and oral formats.
 - a. Informal and formal oral presentations - Capacity to clearly articulate a coherent and compelling line of thought
 - b. Class discussions and debates
 - c. Writings on readings - Capacity to clearly articulate a coherent, creative and compelling line of thought (even when not personal viewpoint)
 - d. Develop and revise an argument paper arguing for or against a scientific or technical advance.
3. Form productive peer networks and study groups.
4. Master processing skills such as:
 - a. Problem solving in the seminar setting
 - b. Critical thinking about technological advances
 - i. Recognize the context of a line of thought
 - ii. Evaluate the consistency and coherency of a line of thought
 - iii. Create a consistent, coherent and compelling line of thought
 - c. Reflective learning
5. Demonstrate skills in information organization and management.
 - a. Google Docs
 - b. Zotero

Grading

The grade in the course will be based on the number of points accrued throughout the semester. Each type of assignment is worth a specific percentage of the final grade, shown below. The dates for the assignments will be announced in class or are listed on the tentative schedule.

Grade component	Total %
Writing Assignments (including revisions)	40%
QEP and Learning Outcome Module Assignments	10%
Oral Presentations	25%
Debate/Trial	10%
Engaged Participation	15%
Total possible points for semester	100%

The final course grade will be based on the following point scale:

Points accrued	Letter grade	Points accrued	Letter grade
≥ 93 %	A	76.9-73.0 %	C
92.9-90.0 %	A-	72.9-70.0 %	C-
89.9-87.0 %	B+	69.9-67.0 %	D+
86.9-83.0 %	B	66.9-60.0 %	D
82.9-80.0 %	B-	≤ 59.9 %	F
79.9-77.0 %	C+		

A mid-semester report of unsatisfactory (U) will be reported if you have a D+ or below in the course thus far.

Writing Assignments

These assignments will include such assignments as small writings about readings, annotations of papers, library research method write-ups over scientific advances and assigned readings, as well as two longer 5-7 page argument papers. Both drafts and revised work will be assessed.

Learning Outcomes and Module Assignments

There are several specific QEP modules that address the learning outcomes for the course. These modules will include information retrieval, source evaluation, citation management, the writing process and theory/principles of oral communication.

Oral Presentations

You will give both brief (~2 minute) and longer oral presentations (5 - 10 minutes). Some will be formal including the use of visuals (such as PowerPoint), while others will be extemporaneous.

Debate/Trial

In the latter part of the semester the class will participate in a debate or trial of an ethically controversial scientific advancement. For this activity members of the class will be asked to defend a position on an ethical issue (the position will not necessarily reflect the personal stance of the participant). This activity is designed to allow for examination of a sensitive issue from multiple viewpoints in a respectful and constructive manner.

4th Hour Activities

These are activities outside of the class time for which attendance will enrich the learning environment, provide connection with faculty and students across campus.

Class Participation

The learning environment in every class is set by the students and the instructor. It is crucial for the success of this course that all students participate in activities and class discussions. Please email Dr. Reif to collect your 2 extra credit points for reading the syllabus. There will be many different forms of participation and students are expected to remain actively engaged while in class. The use of technology is requested for some activities, but otherwise, should be put away unless being used directly for a class activity.

Contact

Each student must regularly check their UMW e-mail address as well as CANVAS.

Announcements and assignments will be made or posted via email or on Canvas. In addition all students are required to **check Canvas** regularly, as this is where we will post class related material including readings.

Inclusive Learning

I feel strongly that the classroom and laboratory should be inclusive environments where People from different backgrounds, temperaments, experiences, and life circumstance can all participate in shared learning. Listening, respectfulness, and civility are cornerstones of inclusive learning and will be expected from everyone.

Disability Resources

The Office of Disability Services has been designated by the University as the primary office to guide, counsel, and assist students with disabilities. If you receive services through that office and require accommodations for this class, please make an appointment with me as soon as possible to discuss your approved accommodation needs. Bring your accommodation letter with you to the appointment. I will hold any information you share with me in the strictest confidence unless you give me permission to do otherwise. Any student with particular needs should contact the Office of Disability Resources; 401 Lee Hall or at 540-654-1266. They will require appropriate documentation of a disability.

Title IX

University of Mary Washington faculty are committed to supporting students and upholding the University's *Policy on Sexual and Gender Based Harassment and Other Forms of Interpersonal Violence*. Under Title IX and this Policy, discrimination based upon sex or gender is prohibited. If you experience an incident of sex or gender-based discrimination, we encourage you to report it. ***While you may talk to me, understand***

that as a “Responsible Employee” of the University, I MUST report to UMW’s Title IX Coordinator what you share. If you wish to speak to someone confidentially, please contact the below confidential resources. They can connect you with support services and help you explore your options.

Resources

-Stefanie Lucas-Waverly
Title IX Coordinator
540-654-5656
slucaswa@umw.edu
-Crystal Rawls
Title IX Deputy for Students
Area Coordinator
540-654-1801
crawls@umw.edu

Confidential Resources

-Talley Center for Counselling Services
LeeHall 106
-Student Health Center
Lee Hall 112
-Empowerhouse
540-373-9373
-RCASA
540-371-1666

Course Recording Policy

To ensure the free and open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student’s own private use. Students who wish to record lectures or class activities for study purposes must inform the faculty member first. Students with approved accommodations from the Office of Disability Resources permitting the recording of class meetings must present the accommodation letter to the instructor in advance of any recording being done. On any days when classes will be recorded, the instructor will notify all students in advance. Distribution or sale of class recordings is prohibited without the written permission of the instructor and other students who are recorded. Distribution without permission is a violation of educational privacy law. This policy is consistent with UMW’s Policy on Recording Class and Distribution of Course Materials.

Honor System

Any assignment for which you will receive a grade (unless designated as a group assignment) must be completed and pledged as your own work. The honor pledge must be written in full: *I hereby declare upon my word of honor that I have neither given nor received unauthorized help on this work. (Signature).* It is your duty as students and ours as faculty to uphold the Honor Code, which is described in detail in the [Guidebook & Constitution](#). Suspected violations of the Honor Code will be addressed according to the policy established by the Honor Council. I will not grade an assignment without a signed pledge.



Tentative Daily Schedule

Note: Topics, Dates and Assignments are Subject to Change. Please Check Canvas for most up to date information.

Dates	Topics, Modules, & Readings	Assignments Due
Week 1 – Introductions and Resources – Read Brutes Ch. 1 & HeLa Part I: Life		
8/26	Introductions, Overview and Expectations Scientific & Technology Interests	
8/28	Online Information Sources “Down the rabbit hole” with sources	Popular press articles - printed
8/30	Introduce <i>The Immortal Life of Henrietta Lacks</i> Scientific Breakthroughs – nuts and bolts Last day to add course by 5 pm	Popular press sources & writing prompt <i>Class Discussions</i> module by 5 pm
Week 2 – Resources and Scientific Breakthroughs – Read Brutes Ch. 2 & Discuss HeLa Part I: Life		
9/2	No Classes – Labor Day	
9/4	Search Tools & Strategies Rosemary Arneson - Librarian Last day to drop 8-week course w/o a grade of W	Science/Technology Topic of Interest <i>Finding a Topic</i> module
9/6	Definition of Scientific Breakthrough Discussion Breakthrough Research and Justification Search Terms Discussion Peer Academic Consultants	<i>What to Type in Search Boxes</i> module Reading Reflection 1 Search Results Assignment
Week 3 – Scholarly Articles & Ethics – Read Brutes Ch. 3 & HeLa Part II: Death		
9/9	Discuss <i>Immortal Life of HeLa</i> Brief Discussion of Ethical & Cultural Viewpoints	Ethics Readings
9/11	Library tour and Scoping out Types of Sources (Simpson Library 225B) – Rosemary Arneson	<i>Checking for CRAAP</i> module
9/13	Where the rubber meets the road – Ethics in the World Last day to drop 16-week course w/o a grade of W	<i>Communication Apprehension</i> module
Week 4 – Oral Communication and Ethical Decisions – Reach Brutes Ch. 6 & Discuss HeLa Part II: Death		
9/16	Oral Presentation of Breakthrough Topics	Oral Presentation (elevator speeches)
9/18	How to Read Scientific Articles	Three References Assignment
9/20	Discuss <i>Immortal Life of HeLa</i> Talk about writing style/audience Last day to change to/from pass/fail grade & withdraw w/o grade of F for 8-week course	Reading Reflection <i>Communication Theory</i> module

Week 5 – Information Synthesis and Management – Read Brutes Ch. 7 & HeLa Part III: Immortality

9/23	Zotero Module (Simpson Library 225B) – Peter Catlin	<i>The Writing Process</i> module
9/25	Primary Article Sharing & <i>HeLa</i> discussion	Breakthrough Paper Outline
9/27	Speaking Center – Presentation Basics	Annotation Activity
		<i>Intro. and Conclude Paragraphs</i> module

Week 6 – Science and Society – Read Brutes Ch. 8 & Discuss HeLa Part III: Immortality

9/30	Paper Annotation Editing & Evaluation	Article Hunt – Primary/Secondary
10/2	Writing Center Visit	Zotero References
10/4	Discuss <i>Immortal Life of HeLa</i> Start of Family Weekend	<i>Editing and Revision</i> module

Week 7 – Ethics – Discuss HeLa Part III: Immortality and Brutes

10/7	Ethics Discussion of <i>HeLa</i> and <i>Brutes</i>	Ethics Readings and Reflections Due
10/9	Our Ethics	
10/11	Ethics In and Beyond Science	Breakthrough Paper Draft Due
	Last day to withdraw from the university if registered for 8-week course	

Week 8 – Perceptions of Science – Read Brutes Ch. 5

10/14	Fall Break, No class	
10/16	Academic Services – Degree Works Workshop – Charles Tate Pre-registration Advising begins	
10/18	Peer Edit Breakthrough papers Start of Homecoming Weekend	

Week 9 – Societal Context for Breakthroughs and Advancements

10/21	Past Perceptions of Science & Tech	Ethics Readings
10/23	Introduction of Future Advancements	Writing Center Revision Appt.
10/25	Future Advancement Selection & Vetting	Articles on Future Advancement Topic
	Last day to change to/from pass/fail grade & withdraw w/o grade of F for 16-week course	

Week 10 – Science, Ethics and You!

10/28	Debate Introduction & Your Personal Ethics Advance registrations begins for Spring semester	
10/30	Academic and Career Services Visit	Breakthrough Paper Final Due
11/1	Debate Prep	Debate Preparation Materials

Week 11 – Debates

11/4	Debate Part I	Speaking Center – Presentation Appt.
11/6	Debate Part II	
11/8	Debate Part III Advance registration ends	

Week 12 – Breakthrough Presentations

11/11	Breakthrough Presentations	Oral Presentation (PowerPoint)
11/13	Breakthrough Presentations	
11/15	Breakthrough Presentations	

Week 13 – Looking Forward

11/18	Learning from the Past to Look at the Future	Future Advancement Draft
11/20	Ethics of Today's Society.	
11/22	Future Advancements Discussion.	

Week 14 – Learning from the Past to Help the Future

11/25	Enrichment Day	
11/27	Thanksgiving Break – Residence halls close at 10 am	
11/29	Thanksgiving Break – Residence halls closed until 2 pm Sunday	

Week 15 – Learning from the Past to Help the Future

12/2	Oral Presentations	Oral Presentation (5 minutes)
12/4	Oral Presentations	Oral Presentation (5 minutes)
12/6	Wrap-Up and Evaluations	
	Last day of classes and last day to withdraw from the university	

Week 16 – Reading Period and Finals

12/13	Final Exam 12:00 – 2:30 pm	Future Advancement Paper Final Due
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Color Key:

Orange – campus events or closures

Purple – academic calendar events pertaining to classes

Red – visits by academic support resources

Blue – visits by librarians for information literacy

Green – modules to improve skills in areas of speaking, writing and research