

FIRST-YEAR SEMINAR REAPPROVAL FORM
UNIVERSITY OF MARY WASHINGTON

COURSE TITLE:	Parasites: Monsters Within		
SUBMITTED BY:	Abbie Tomba	DATE:	11/21/14

RATIONALE. Include short statement addressing how this course meets the FSEM's basic components and new student learning outcomes (see FSEM call above).

- Parasites often attract attention for their “ick” factor, but their ecological and evolutionary importance far exceeds this. By focusing on the evolutionary arms race between parasites and their hosts, we can explore the amazing complexity of parasites, as well as the dramatic effects they have had on host evolution and the implications this has for human health. In this class we will use a combination of primary literature and science writing for non-scientists to explore many of the current hypotheses related to parasites and evolution (i.e. parasites are responsible for the evolution of sex, and reduced exposure to parasites is responsible for the increase in allergies and autoimmune diseases in humans). Through discussions, and oral and written assignments students will gain experience retrieving, evaluating, and synthesizing information from different sources, as well as formulating their own opinions and supporting them with well-developed arguments. Students will also be required to revise some written assignments to improve their development and organization of written arguments.

SYLLABUS. *Attach a course syllabus.*

SUBMIT this form and attached syllabus **electronically as one document** to Dave Stahlman (wdstahlm@umw.edu). All submissions **must** be in electronic form.

FSEM 100 – First Year Seminar – Fall 2015

Parasites: Monsters Within

the evolutionary arms race between parasites and their human hosts.

Professor: Dr. Abbie M. Tomba
Office: 334 Jepson
Phone: x1366
E-mail: atomba@umw.edu

Office Hours: MWF 9:30 a.m. to 11:00 a.m.
TR 1 p.m. to 2 p.m.
or by appointment

Lectures:

Required Texts:

Zimmer, C. 2000. *Parasite Rex: inside the bizarre world of nature's most dangerous creatures*. Simon and Schuster, New York.
Zuk, M. 2007. *Riddled with Life: Friendly Worms, Ladybug Sex and the Parasites that Make Us Who We Are*. Hartcourt, inc., Orlando.

Other Readings will be made available through Canvas.

FSEM Student Learning Outcomes

Upon successful completion, students will

- utilize a variety of research techniques to retrieve information efficiently, evaluate retrieved information, and synthesize information effectively to support their 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; and
- communicate effectively in a variety of settings, including public speaking and group discussion.

Course Description

In this course we will explore the on-going evolutionary arms race between parasites and their hosts and the implications this has for human health and evolution. We will use the parasite-host system to better understand the process of natural selection. You will also discuss and evaluate current hypotheses related to parasites and evolution (i.e. parasites are responsible for the evolution of sex, the increase in allergies and autoimmune diseases in humans are due to reduced exposure to pathogens and parasites; and parasites are to blame for the proliferation some human genetic diseases). You will explore these topics, and synthesize and develop your own well supported ideas through readings of primary literature, popular science as well as, class discussion and oral and written assignments.

Course Objectives

- Understand the mechanisms of evolution, particularly Natural selection
- Better appreciate and be able to apply the scientific method
- Acquire, synthesize, and evaluate scientific literature from a variety of sources
- Form and defend your own opinions regarding the scientific and societal value of hypotheses discussed in class and of scientific research in general
- Be able to clearly present scientific data in both oral and written form

- Engage in productive, civil group discussion about potentially contentious issues upon which diverse views are likely to be expressed

Some of the topics to be discussed:

- What is a parasite?
- What can parasitism teach us about the mechanisms of evolution and natural selection?
- How and why do parasites influence host behavior?
- How did sex evolve, and were parasites responsible?
- Can you be parasite free? And is it healthy?
- What insight does studying evolution and parasitism give us into human health?
- How can understanding evolution help us better control and treat parasitic diseases?

Honor Code:

You are expected to abide by the UMW Honor Code. All tests should be completed independently and pledged unless specifically instructed otherwise.

Honor Pledge:

“I hereby declare, upon my word of honor, that I have neither given nor received any unauthorized help on this work. **Signature**”

Grading

4 synthesis papers	400
2 journal article summaries	200
Discussion questions	100
Class participation	100
Leading discussion	100
Group presentations	200
Total	= 1100

Grading Scale:

A	94-100	C+	77-79	F	< 60
A-	90-93	C	73-76		
B+	87-89	C-	70-72		
B	83-86	D+	67-69		
B-	80-82	D	60-66		

Mid-semester reports: Averages below 70% will be reported as "U" (Unsatisfactory).

Synthesis papers: You will complete 4 two- page papers over the course of the semester. Papers should be 12 pt font, 1.5 line spacing and have 1 in margins. In these papers you will tie together ideas from multiple readings and discussions to demonstrate your understanding of the material as well as how the material relates to the themes of the course. **Paper Revisions:** In order to improve development and organization of written arguments; and to practice editing and revising, you will be required to revise and resubmit two of your synthesis papers.

Journal Article Summaries: You will also be required to summarize two primary journal articles. These will be due the day we discuss the article in class. Your paper should be 2 pages (same formatting as above) and should summarize each section of the paper independently. The goal of this assignment is to help you become familiar with the structure and content of primary scientific literature as well as enhance your comprehension of the material.

Discussion questions: For each reading/discussion day you will have a short pre-class assignment designed to help facilitate discussion. You will be required to either 1) write 5 questions pertaining to the reading that you would like to discuss in class OR 2) answer 1-2 discussion questions I post prior to class. These questions are open ended and designed to help you think and reflect on the material as well as to provide “discussion starters” for the next class period. Both assignments are to be submitted on-line through canvas and are due an hour before class.

Class Participation: Class participation is crucial to your grade and to the success of the course in general. All students start out with a base score of 50. For each class, 2 points will be awarded for thoughtful, informed and appropriate contributions to the discussion. Absences (unless approved by the instructor) and inappropriate contributions will result in the loss of 2 points. No points will be awarded or lost for attending but not participating

Leading Discussion: Over the course of the semester you will be responsible for leading two class discussions. For both discussions you will work in pairs (partners can be different for each discussion). For the first, you and a partner will lead a discussion of one of the assigned readings on the syllabus. For the second, you and a partner will lead a discussion on a primary literature article you selected a related to the current topic being covered in the class. You must submit the article in a PDF form to me a week before your discussion date so I can approve it and make it available to the class. Your second Journal summary article will be on this paper.

Group presentation: This is your opportunity to explore additional topics relating to parasites and evolution or to delve deeper into a topic we have discussed in class. For this project you will work in groups of 2 or 3 to select a mutual topic of interest. Each group will explore this topic in detail using a combination of sources (minimum of 3 primary sources) and give a 30 - 40 minute presentation to the class.

Disability Services:

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 the Office of Disability Services and require accommodations for this class, 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 strictest confidence unless you give me permission to do otherwise. To be able to receive accommodations for disabilities you must contact the Office of Disability Services (654-1266).

Tentative Schedule Spring 14

Date	Topic Reading Assignments
Jan. 14	Introduction
Jan. 16	Reading and discussion (R&D): Parasite REX, Prologue – Ch. 1
Jan. 18	Introduction to Library research (RM 225 Simpson library)
Jan. 21	NO Class
Jan. 23	Lecture: An Introduction to Parasites
Jan. 25	R&D: Art of being a parasite. prologue – Ch. 1
Jan. 28	Video : Evolution, genetics
Jan. 30	R&D: Parasite REX. Ch 2 – Ch3 SP1
Feb. 1	R&D: Parasite Rex Ch 4 & the Anatomy of a Scientific Paper
Feb. 4	Writing Center visit
Feb. 6	R&D: Bakker et al. 1997 JRS
Feb. 8	R&D: Webster, J.P. et al. 2006
Feb. 11	R&D: Cézilly, et al 2010.
Feb. 13	Speaking Center Visit
Feb. 15	R&D: Parasite REX Ch 5-6
Feb. 18	R&D: Student paper
Feb. 20	R&D: Parasite REX Ch 7-8 SP2
Feb. 22	R&D: Student paper
Feb. 25	Video: Evolutionary Arms races
Feb. 27	R&D: Art of being a parasite. 6-7
Mar. 1	R&D: Student paper
Mar. 4- 8	SPRING BREAK
Mar. 11	R&D: Riddled with Life: Intro – ch1
Mar. 13	R&D: Student paper
Mar. 15	R&D: Riddled with life: Ch 2-3
Mar. 18	R&D: Student paper
Mar. 20	R&D: Riddled with life: Ch 4-5 SP3
Mar. 22	Meet the parasites: (JEPS 203)
Mar. 25	R&D: Student paper
Mar. 27	R&D: Riddled with life: Ch 6-7
Mar. 29	R&D: Student paper
Apr. 1	R&D: Riddled with life: Ch 8-9
Apr. 3	R&D: Student paper
Apr. 5	R&D: Riddled with life: Ch 10-11 SP4
Apr. 8 – 12	Group presentations
Apr. 15 - 19	Group Presentations
Apr. 22-24	Group Presentations
Apr. 26	Conclusions Final discussion

SP - synthesis papers are due **JRS** – journal reading summary due