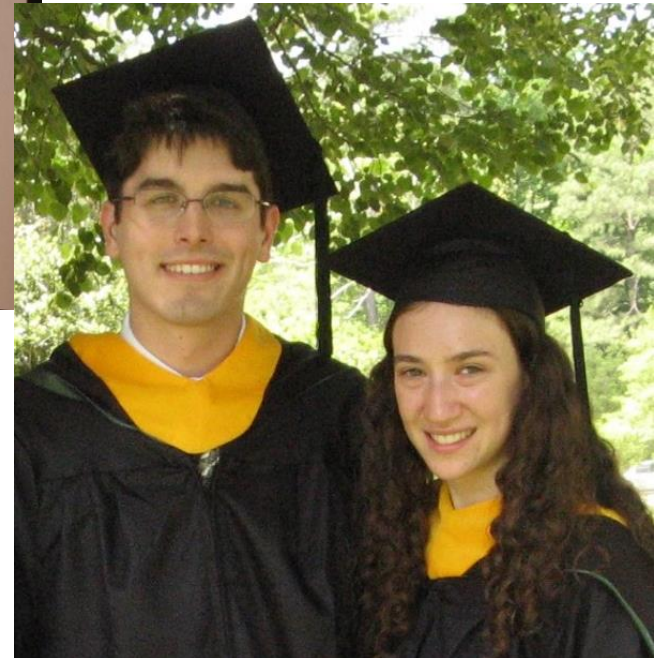
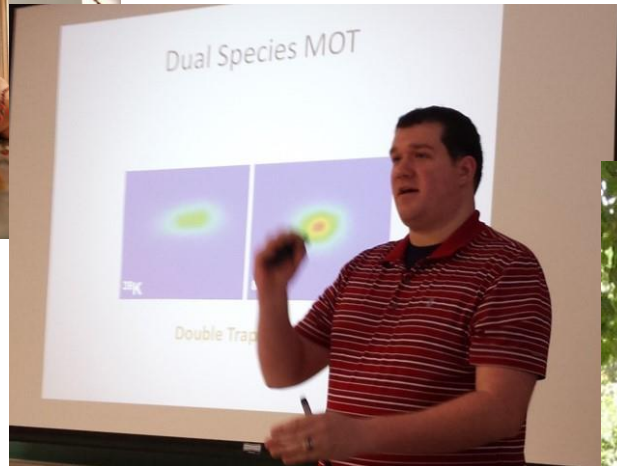
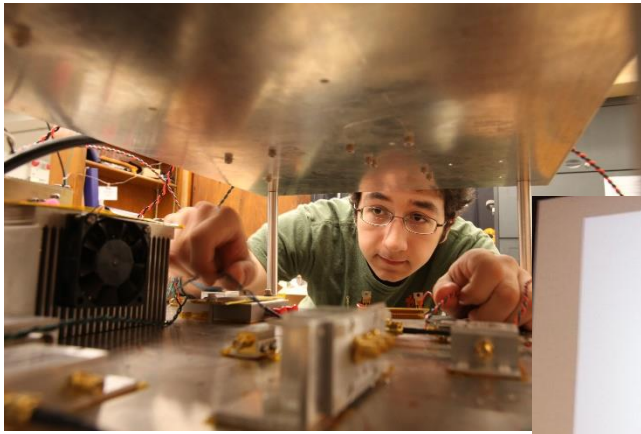


Physics 452 (496): Senior Thesis Research

(i.e. how to present scientific research & graduate)



Instructor

Prof. Seth Aubin

Office: room 255, Small Hall, tel: 1-3545

Lab: room 069, Small Hall (new wing), tel: 1-3532

e-mail: saaubi@wm.edu

web: <http://www.physics.wm.edu/~saubin/index.html>



Office hours:

Aubin: Open office hours and by appointment.

Course Objectives

Effective **oral** and **written presentation** of scientific research.

The course will cover the following topics:

- Abstracts, i.e. executive summary of a paper.
- The science pitch, i.e. “elevator” talk.
- Long talks.
- Project reports.
- Science literature search resources.
- Graduate school and employment.
- Science and engineering teams.
- Science ethics and professionalism.

Course Work

Thesis and defense (2nd semester): These written and oral presentations are the primary means of evaluating your work.

Research effort: Your weekly productivity and effort on your thesis project are essential components of your course performance.



Midyear report and talk: These written and oral presentations provide guidance on your research performance and can complement evaluations in the second semester.

Short talks and abstracts (1st and 2nd semesters): These short oral and written presentations will occur at the start of each semester.

Course participation: In class participation is required.

Grading

- You will receive a **grade of “G”** for the first semester of this senior thesis course.
- This “G” grade will then be **converted to a final grade** after completion of the thesis in the second semester.
- An **informal grade** will be provided at the end of the first semester, as well as guidance on the trajectory of the research.
- Your **final grade** for the course will be determined by your research advisor with input from the instructor.

Writing Resource Center

- The Writing Resources Center, located on the first floor of Swem Library, is a **free service** provided to W&M students.
- Trained consultants offer **individual assistance** with writing, presentation, and other communication assignments across disciplines and at any stage, from generating ideas to polishing a final product.
- To make an appointment, visit the WRC webpage www.wm.edu/wrc.

CAUTION !!!

Important academic deadlines

Add/drop deadline: Monday, January 28, 2019

Withdraw deadline: Friday, March 15, 2019

If you drop or withdraw from this course,
then you will not graduate in May 2019*.

You must register for a total of at least 3 credits to satisfy COLL 400

Schedule (I)

Week 0: 1/18

Class: Intro to Senior Thesis, 2nd semester

Overview of the senior thesis course during the 2nd semester.

Week 1: 1/25

No Class ... TBA

Week 2: 2/1

No Class ... TBA

Week 3: 2/8

No Class ... TBA

Week 4: 2/15

No Class ... TBA

Week 5: 2/22

No Class ... TBA

Week 6: 3/1

No Class ... TBA

----- Spring Break -----

Week 7: 3/15

No Class ... TBA

Week 8: 3/22

No Class ... TBA

Schedule (II)

Week 9: 3/29

Friday: 1st draft of thesis due to advisor

Week 10: 4/5

No Class ... TBA

Week 11: 4/8-12

Monday: Sign up for final presentations

Honors thesis: Corrected complete draft of thesis submitted to exam committee.

Week 12: 4/19

Friday: Corrected complete draft of thesis is due

COLL 400 Project Summary for Diverse Audience is due.

Week 13: 4/22-26

Thesis defenses, week 1

Format: 20 minutes for talk (30 minutes for honors) + 10 minutes for questions
(Honors presentations get priority for this week)

Week 14: 4/29 – 5/2

Thesis defenses, week 2

Friday, May 3, 11 am: Deadline for reporting honors

Student must submit thesis cover sheet (signed by entire committee) to Charles Ctr.

Wednesday, May 8, noon: Deadline for submitting final hardcopy version of thesis.

Friday, May 10: Deadline to submit electronic thesis copy to W&M Publish (library).

Note: A class on science research ethics will be added to the above schedule.

Research ...

Cons

- Research is hard.
- Research is really hard.
- Murphy is very strong.
- Research requires “blood, sweat, and tears”*

* see Marie Curie, Marguerite Perey, Enrico Fermi.

Pros

- Create new knowledge.
- Discover new phenomena and effects.
- Create new instruments, devices, and technologies.

Caveat: The “new” only exists and is relevant if it is documented in a paper, thesis, talk, and/or webpage, and distributed to a wider audience.

Career relevance