

Yale Poorvu Center for Teaching and Learning

- Fundamentals of teaching physics workshop series
- Teaching workshops
- Classroom observations and consultations
- Scientific teaching fellows course
- McDougal Graduate Teaching Fellows program



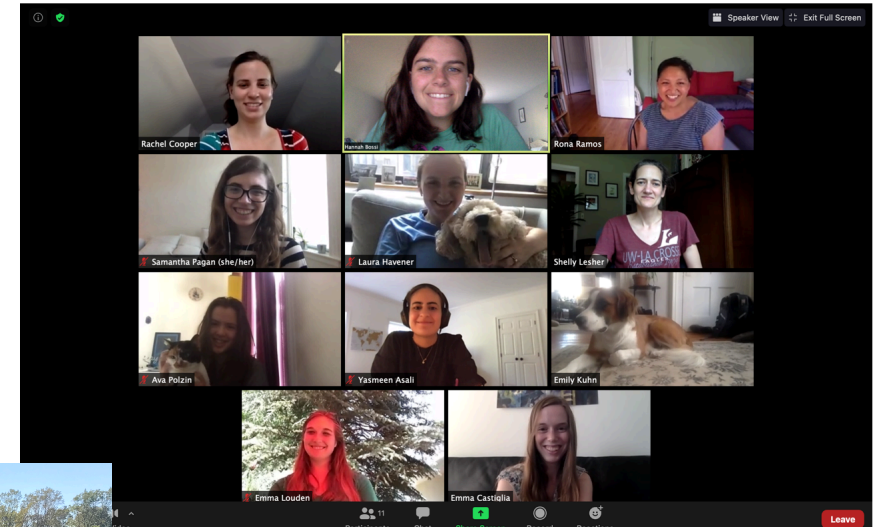
Women in Physics+

Who are we?

WIP+ is focused on **fostering a supportive environment for underrepresented genders** in the Physics, Applied Physics, and Astronomy departments. We **coordinate mentoring and social events** for graduate students, post-docs, research scientists, and faculty. The group and many events are open to all allies in the department, from whom we welcome support for our initiatives.

What do we do?

- *Monthly Coffee Chats*
- *Monthly Lunches with the Allies*
- *Special Events:* Apple Picking, Holiday Party, Brunch, Ice Cream Trips, & Graduating Student Farewell
- *Advocacy:* Initiatives within the department, Women in Physics Families with the Undergrad WIP group



WIP+ Board: Feel free to reach out to any of us!

Twitter: @yale_wip

Chair: Emma Castiglia

Events: Hannah Bossi

Social: Rachel Cooper

Advocacy: Samantha Pagan and Ava Polzin

Faculty Advisor: Simon Mochrie





QuArk

Q**U**eer-Affiliated
f**R**iends of
ph**y**si**K**s

We're here,

We might be queer,

Come and have some bagels.

Graduate Student Assembly (GSA)



- **Representation:** The Graduate Student Assembly is an elected body of Yale students in the GSAS.
- **Advocacy:** We aim to identify the needs and concerns of graduate students, consider possible solutions, and present these to administrators. We also discuss, propose, and advise on possible changes to Graduate School policy proposed by the administration.
- **Communication:** Provides a means for communication and deliberation both among graduate students and between graduate students and other members of the Yale community.
- **Support:** We provide services for all graduate students such as Tax Facts, Ask-a-Lawyer.



<https://gsa.yale.edu/>
Twitter: @GsaYale
The Compass:
<https://gsa.yale.edu/compass>

Graduate Student Advisory Committee (GSAC)

Communication – Serves as a point of communication between the graduate students and the administration of the department

Advisory role – Advises the Graduate program team on matters related to the graduate program, including the planning of annual departmental events

Advocacy – On behalf of the graduate students, by identifying matters which might require change to better the graduate student experience

<https://physics.yale.edu/academic/graduate-studies/GSAC>

Last year:

Virtual open house

DEI action plan

Grad curriculum, qual format

Covid-19 concerns, virtual classes

Coming up:

Improving first-year experience

Mentoring

Continued execution of DEI plan

...your suggestions here!

Girls' Science Investigations



GSI seeks to interest, empower, and inspire girls to pursue careers in science and engineering. We focus our efforts on middle school, a time when many girls lose interest in science or are told they can't do it.

When we can hold in-person events, GSI invites ~200 middle school girls to campus for a day of fun science projects based around a theme. We also had our first virtual event in November!

The program relies on volunteers, primarily from Yale and local high schools. We welcome volunteers of any gender!



Department Happy Hour!



- Meet and socialize with other physics grad students (approx 1/month)!
- Free food and drink when in person meeting become possible.
- Contacts:

Derek Sherry derek.sherry@yale.edu

Andy Ding zhenghao.ding@yale.edu

Zachary Sun zachary.sun@yale.edu

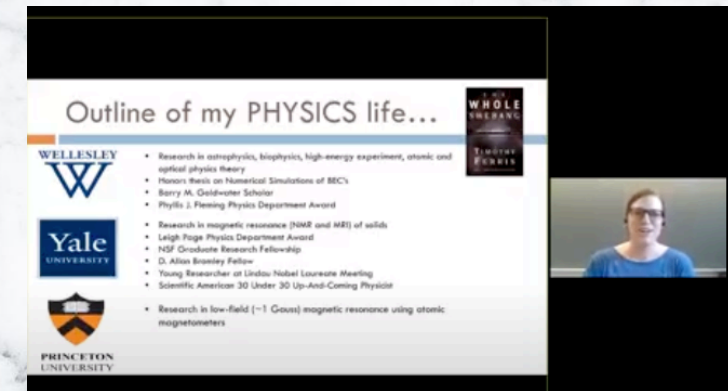
Yale Physics Professional Development Organization (YPPDO)

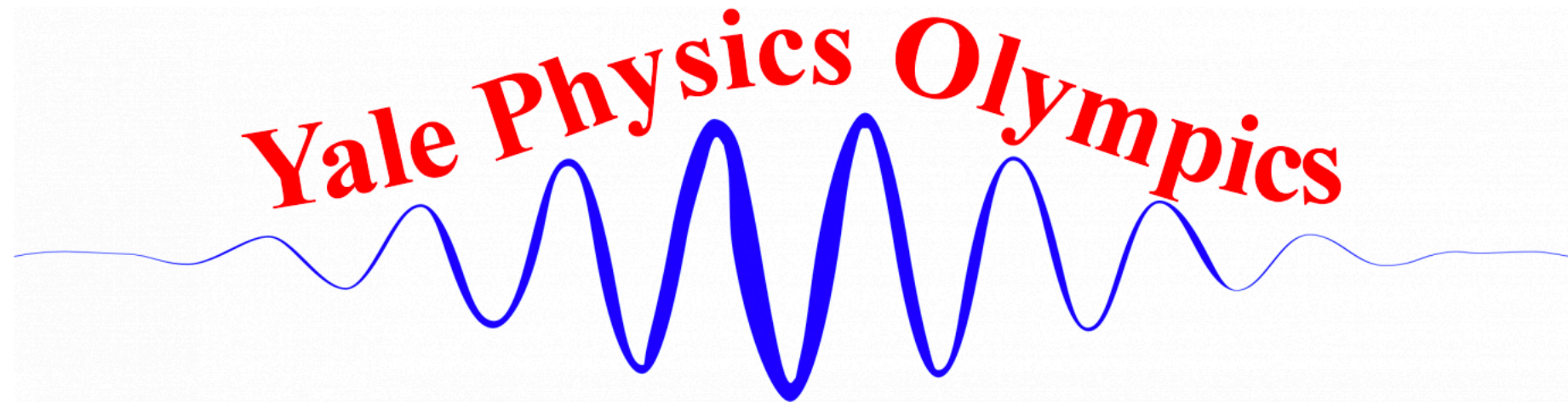
Goal: Expose physics PhD students and postdocs to a wide range of career opportunities, mostly non-academic, and provide professionalization resources.

What we do:

- Host monthly seminars/coffee chats/panels with physics PhDs to talk about their career paths after physics
 - Organize workshops on academic and non-academic professionalization topics
- **2020-2021 events:** Science Policy Panel, Recent Alumnae Panel, Postdoc Panel, Coffee Chats with Facebook AI Researcher, Sarah Lawrence Physics Chair, and a researcher from the US Air Force Office of Scientific Research

More info here: <https://yppdo.yale.edu/>

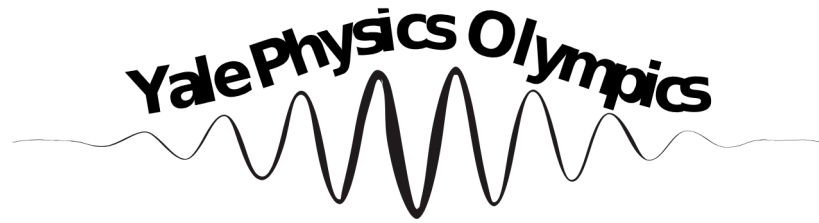




- Every mid October (Saturday 8:00am – 5:00)
- Competitive event for high school students
- Teams of 4 compete in pentathlon of physics themed events
- Graduate students can help design and run the events
- Prizes for best event score and best overall performance
- 2X FFO (Lunch and dinner provided)

<http://ypo.yale.edu>





Team Name: _____

Sadistics

MATERIALS:

Clay
Ruler
Fishing line
Calculator
Pen and paper

Objective: To create exactly 10 objects (of any shape) from clay all weighing an equal mass of 30 grams.

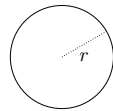
Method:

The Mass (M) and Volume (V) of a uniformly dense object are related through Density (ρ) by

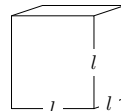
$$\rho = M/V$$

This means, given the density of a material one could produce an object of a specified mass by fixing its volume. The density of the given clay is $\rho = 1.5 \text{ g/cm}^3$ where g and cm are grams and centimeters respectively. You must calculate the volume needed to produce an object of 30 grams and create 10 objects of the calculated volume.

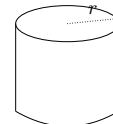
The volumes of some common shapes are shown below:



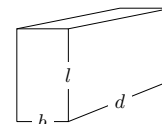
$$V = \frac{4}{3}\pi r^3$$



$$V = l^3$$



$$V = \pi r^2 l$$



$$V = lbd$$

Judging: Judges will use scales to measure the mass of each of the 10 objects. The score is defined as the Root Mean Square (RMS) of the deviation in mass from 30 grams

$$\sigma = \sqrt{\frac{1}{10} \sum_{i=1}^{10} (m_i - 30)^2}$$

The team with the lowest σ will win the event.

Judges: Report at least 3 Sig.Figs

$\sigma =$ _____