

# Welcome to SPS 2021-2022!

Sign in link: <https://forms.gle/aZfbCPwNhAwkQoew8>

Please fill this out to join the mailing list! This is how we reach you!  
Link is also in Zoom chat!



# Welcome to the Society of Physics Students!

- What is SPS?
- Who runs SPS?
- How can you get involved?



# What is SPS?

- Local, dues-free chapter of national organization
- Meet every other Wednesday from 6:00-7:00 pm.
  - Attend in-person or on Zoom.
- Goals of SPS:
  - To **prepare** physics majors for their post-undergraduate careers
  - To foster a **community** of physicists
  - To be a **resource** for physics students
  - To help students **navigate the physics major**



# Prepare for Physics Careers

- Information about how to prepare for graduate schools
  - CV building
  - Selecting a graduate program
  - Research opportunities
  - Connections w/ grad students & faculty
- Other career paths: high school teaching (talk to Adam LaMee!) or industry
  - Info sessions about diversity of options that come with a physics degree.



# Fostering a Physics Community

- Social events!
  - SPS Talent Showcase
  - Potlucks and holidays
  - Game/trivia nights
- Having fun with physics
  - Bad movie physics
  - Physics jeopardy
  - Special topic explorations



# Resources for Physics Students

- National SPS Awards
  - Chapter Awards, e.g. Chapter Research Award
  - Individual Awards, e.g. Outstanding Undergraduate Research Award
- Prestigious Awards (not SPS-affiliated)
  - Goldwater
  - Astronaut
  - NSF GRFP
- REU program info

Lecture 1 recording.mp4

$$\ddot{r} - r\dot{\theta}^2 = -\frac{GM}{r^2} \quad \dot{\theta} = \frac{l}{r^2} \quad l = \text{const.}$$
$$\ddot{r} = \frac{l^2}{r^3} - \frac{GM}{r^2} \quad \text{1D problem.}$$
$$\ddot{r} = -\frac{dV_{\text{eff}}(r)}{dr} \quad V_{\text{eff}}(r) = \frac{l^2}{2r^2} - \frac{GM}{r}$$
$$\Rightarrow \frac{\dot{r}^2}{2} + V_{\text{eff}}(r) = E = \text{const.} \quad E = \text{energy/mass.}$$

$E > 0$  Scattering hyperbolae.

$E < 0$  elliptic orbits.

$E = 0$  parabolic orbits.

The graph shows potential energy  $V_{\text{eff}}$  on the vertical axis and distance  $r$  on the horizontal axis. The potential well has a minimum at  $r = 2GM/l^2$ . For  $E > 0$ , the particle has enough energy to escape, resulting in scattering hyperbolae. For  $E < 0$ , the particle is bound, resulting in elliptic orbits. For  $E = 0$ , the particle is on a parabolic orbit.

# Resources for Physics Students

- Helping go to conferences!
  - In the past: APS April Meeting, AAPT Winter meeting, Zone 6 Meeting.
  - Can get funding via SGA and SPS National.





# Help Students With Major

- Finding faculty to do research with
- What classes to be prepared for and what tools we've used to succeed in them
- Advocates for student interests
  - SPS has representatives on dept. committees
  - Removal of CS1 requirement, trying to replace w/ Intro to Numerical Computing



# Who runs SPS?

- Spencer (President)
- Rajib (Vice President)
- Olivia (Secretary)
- Madisyn (Treasurer)



And maybe you!?

# How can you get more involved?



OR



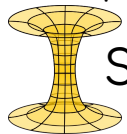
Historian/Net  
Administrator

Can be filled by members in good  
standing with board

approval--currently looking to fill these!

Participate in our chapter research  
project!

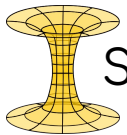
<https://discord.gg/cUXY3qjt>



SPS at UCF

# How can you get more involved?

- Back in person--we have the undergrad room (UGR)!
- PSB 467, request door access (<https://sciences.ucf.edu/physics/> → bottom of the page → Door Access Request → fill out info, select Undergrad Study Room).
- In principle it's a study room, but a good place to hang out/talk about physics/find out what's happening in UCF physics dept.
- Just a reminder: we like to have fun in UGR, but try to keep it inclusive! Physics undergrads are a pretty diverse population, be mindful (so that we can keep using the undergrad room!).



# How can you get more involved?

## Physics

UCF Department of Physics

4111 Libra Drive  
Physical Sciences Bldg. 430  
Orlando, FL 32816-2385

📞 407-823-2325

📠 407-823-5112

✉️ physics@ucf.edu



## IMPORTANT LINKS

- Graduate Student Service Awards – Guidelines and Nomination Form
- Planetary Sciences
- Door Access Request
- Annual Reports
- Open Positions
- Physics Webmail
- Calendar

## GRADUATE PROGRAMS

REQUEST INFO

## GIVE

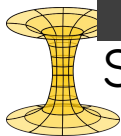
SUPPORT UCF PHYSICS

COLLEGE OF SCIENCES, UCF

Anthropology | Biology | Chemistry | Math | NSCM | Physics | School of Politics, Security, and Int. Affairs | Psychology | Sociology | Statistics & Data Science

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SPS at UCF



# We want to get to know you!

Going around the room (+ Zoom), introduce yourself and...

1. Why'd you come to SPS today?
2. How long have you been a physics major?
3. What are you most interested to learn?



# SPS at UCF

Society of Physics Students

HOME

CHAPTER INFO ▾

PROJECTS

RESOURCES

EVENTS

GALLERY

ARCHIVE ▾

PEER MENTOR PROGRAM

OUTREACH

SIGMA-PI-SIGMA

## Home



Search Bar



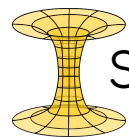
Special Events

There are no upcoming events at this time.

Upcoming Events

**First Meeting Fall  
2019**

September 11 @ 6:00 pm - 7:00 pm



SPS at UCF

<https://sciences.ucf.edu/physics/sps/>

# Upcoming Events/Announcements

- Next meeting 9/15 -- check your email!
- SPS National is providing pandemic relief funds
  - Apply here:

<https://www.spsnational.org/scholarships/AIPSPSUSEA>