



# FRIB

## Welcome!



**MICHIGAN STATE**  
UNIVERSITY



U.S. DEPARTMENT OF  
**ENERGY**

Office of  
Science

This material is based upon work supported by the U.S. Department of Energy, Office of Science, Office of Nuclear Physics and used resources of the Facility for Rare Isotope Beams (FRIB) Operations, which is a DOE Office of Science User Facility under Award Number DE-SC0023633.

# Welcome to the 2024-2025 Academic Year

- Welcome to the incoming graduate class and research associates at FRIB!
- Join and support the FRIB Community: you are all important members!!
  - Join seminars, research discussions, graduate thesis defenses and research presentations
  - Many other activities and events (more later)
- Need support, have questions, don't know where to go? Ask someone!
  - Wellness support (see next slides)
  - Office of Education, Workforce, Career Development
    - » Remco Zegers; Rachel Younger; Pablo Giuliani; Tabitha Pinckney; Mornetka Gueye; Heiko Hergert (for a few more days)
  - Your advisor, fellow students/postdocs
  - There are many excellent professionals at FRIB who can serve as a resource
- Be kind, supportive, respectful, and professional
  - FRIB Code of Conduct: <https://frib.msu.edu/code-of-conduct>
    - » **We behave professionally and respectfully**
    - » **We foster a welcoming and inclusive work environment**
    - » **We cultivate an environment that is free of discrimination, harassment, and retaliation**
    - » **We conduct research with the highest scientific, professional and ethical standards**
- Thank you: Tabitha, Michelle, Heiko (and all of you!)



# FRIB WELLNESS



# MEET OUR STAFF



RACHEL YOUNGER, LLMSW



MARSHA CAROLAN, PH.D.,  
LMFT



TEMPLE ODOM,  
PH.D., LMFT



ALEX STANULIS, MSW INTERN



# FACILITATORS



Amy Mollitor, CPC, ELI-MP  
Owner of Intentional Energy, LLC  
EFT Tapping Master Practitioner  
Certified Life Coach



Toni Thomas, 500 ERYT  
Owner of Salt Yoga, LLC  
Experienced Registered Yoga Teacher  
MSU Professor, Kinesiology Department



# FRIB WELLNESS SITE

The FRIB Wellness Site is a one stop, shop site to access internal and external resources. The site can be used to schedule an appointment with a wellness coach, look up FRIB wellness events or MSU events, or to learn about other campus and community resources.

## FRIB WELLNESS

The collage features several promotional cards for wellness activities:

- Emotional Freedom Technique (EFT) Workshop:** Employee Only EFT Workshop. Tuesday, 9 April 2024, 11:00 a.m. - 12:00 p.m., 1221AB FRIB Laboratory. Facilitated by the Center of International Intention Energy.
- FRIB Wellness:** Informational card with a QR code and contact details for crisis services.
- Wellness Activities:** Includes "WEEKLY YOGA FOR STUDENTS" (Every Tuesday, 12 p.m., 1309 FRIB Laboratory) and "WEEKLY YOGA FOR STAFF" (Every Thursday, 12 p.m., FRIB 1221AB FRIB Laboratory).
- Registration Card:** Thank you for registering for the NCRD Seminar, featuring facilitators Ellie Brigger and Virginia Rutan.



# Updates on Public Engagement Activities by FRIB Outreach Faculty Advisor, Artemis Spyrou



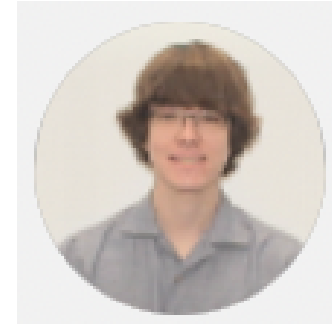
Zach Constan  
Outreach  
Coordinator



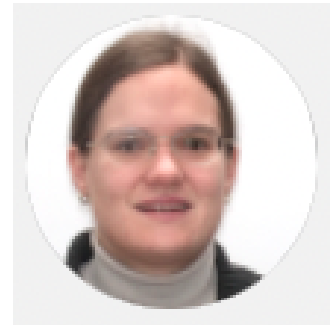
Ana Becerril  
Outreach  
Science  
Curator



Chandra Garcia-Oaks  
Outreach coordinator  
for STEP-UP program



Shane Watters  
Grad. Student  
Representative  
on Outreach  
Committee



Franziska Maier  
Postdoc  
Representative  
on Outreach  
Committee

## Broad range of activities

- Tours
- Open houses
- School visits
- Science festival
- Art-science
- Photo-competition
- Dance
- Video games
- Planetarium shows
- Summer camps

...and more

contact me about future  
volunteer opportunities



# FRIB Graduate Organization

# FRIBGO

## *Primary Goals*

- ❑ Provide FRIB students
  - Meeting place to discuss how to **shape and evolve our graduate program together** to meet our needs of the growing program
  - **Mentorship** between various years and disciplines
  - Engage in **professional development** within a supportive environment



# FRIB Graduate Organization

# FRIBGO

## *Upcoming Events*

- General Meetings: bi-weekly starting **Monday, September 30th @ 2pm FRIB 2311**
- Coffee Hours: bi-weekly starting **Monday, October 7th @ 2pm FRIB 2311**
- Movie Night co-hosted with WaMPS on **Tuesday, October 1st @ 5:30pm in FRIB 1300** featuring Jurassic Park
- Spring Semester the annual **FRIB Graduate Student Retreat**

☆☆☆ please see emails from Shane Watters to sign-up to volunteer for *Isotopes in Motion* ☆☆☆

# FRIB Graduate Organization

# FRIBGO

President: **Lauren Balliet**

Graduate Recruitment: **Michael Gajdosik**

Webmaster: **Joe Dopfer**

Outreach Committee: **Shane Watters**

Social Committee: **Cate Beckman**

Diversity Committee: **Cate Beckman**

The VOICE: **Josh Wylie**

Seminar Representative: **Joe Chung-Jung**

Electronics Committee Representative: **Nick Nusgart**

Curriculum Committee (Nuclear): **Andy Smith**

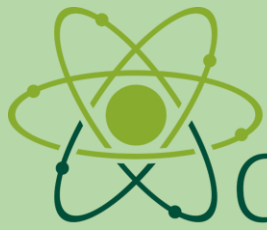
Curriculum Committee (Accelerator): **Jake Brown**

Curriculum Committee (Chemistry): **Jordan Cory**

Space Committee: **Kostas Bosmpotinis**



<https://wikihost.nscl.msu.edu/gradwiki/doku.php?id=start>



# aMPS : Women and Minorities in the Physical Sciences

- Providing supports for individualized needs
- Building supportive relationships

Mentoring



- Facilitate community & foster a sense of belonging
- Take a break from work!

Events

Outreach

- Engage with the broader community
- Show tiny humans that physics is awesome!

# Who are we? (FRIB-based officers are highlighted)

<b>President:</b> Georgia Votta	<b>Website/Social Media Administrator:</b> Pranjal Singh
<b>Vice-President:</b> Andrea Wooley	<b>Outreach Coordinator:</b> Cate Beckman
<b>Secretary:</b> Kaedon Cleland-Host	<b>General Events Coordinator:</b> Daniela Ramirez
<b>Treasurer:</b> Bill Good	<b>First-Year Graduate Liaison:</b> Alex Reynolds
<b>Mentor Training Coordinator:</b> Sha Dadgar	<b>Undergraduate Liaison:</b> Jiangshan He
<b>Mentoring Program Evaluator:</b> Frank Dachille	<b>Faculty Liaison:</b> Kyle Brown

# Upcoming Events! Get Involved!

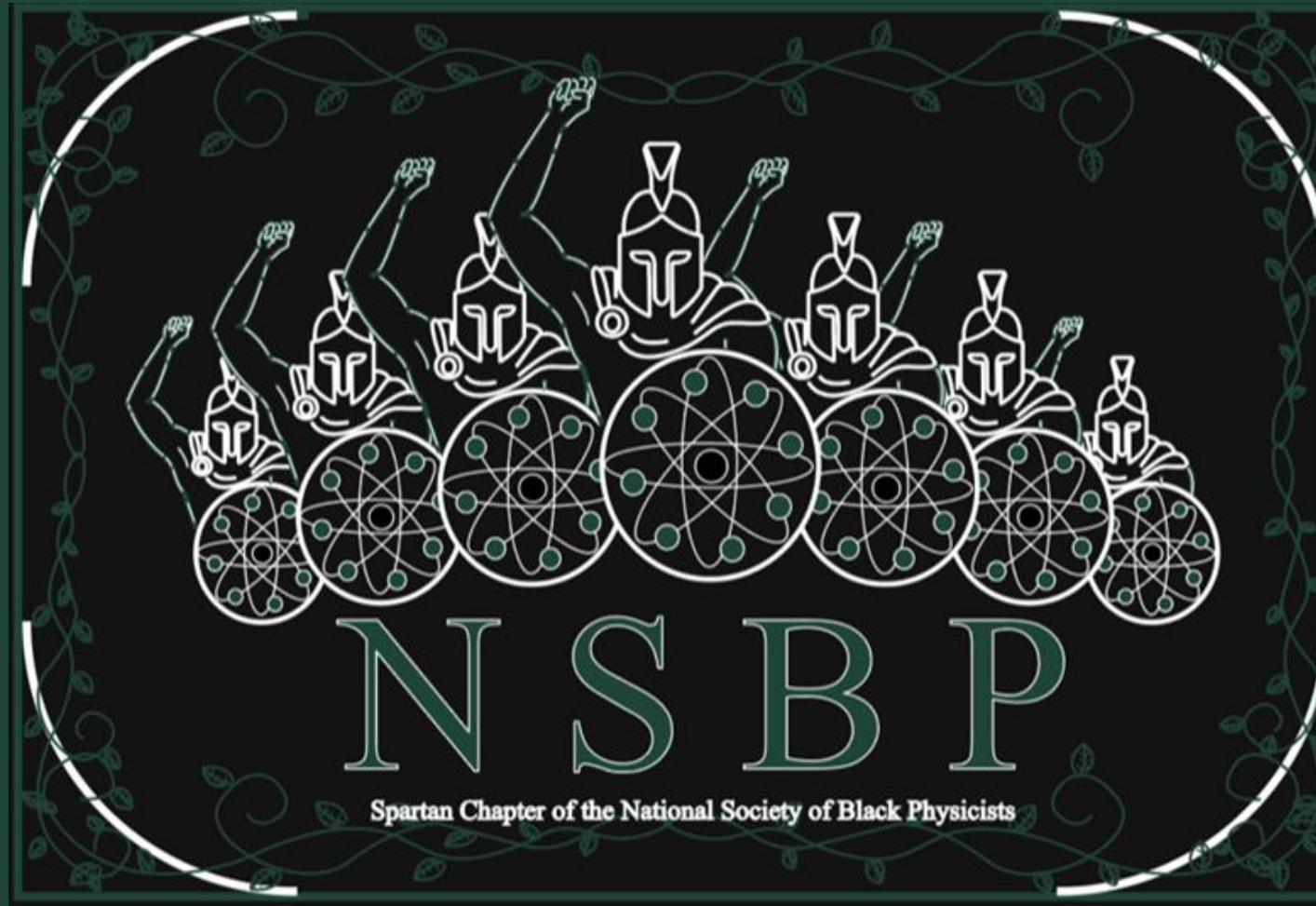
Do you want to help plan & organize events?

Do you want to participate in super fun outreach activities?

Contact us at [rso.wamps@msu.edu](mailto:rso.wamps@msu.edu)  
(or talk to your friendly neighborhood WaMPS officer) for more information!



# The Spartan Chapter of the National Society of Black Physicists (NSBP)



# Goals and Objectives

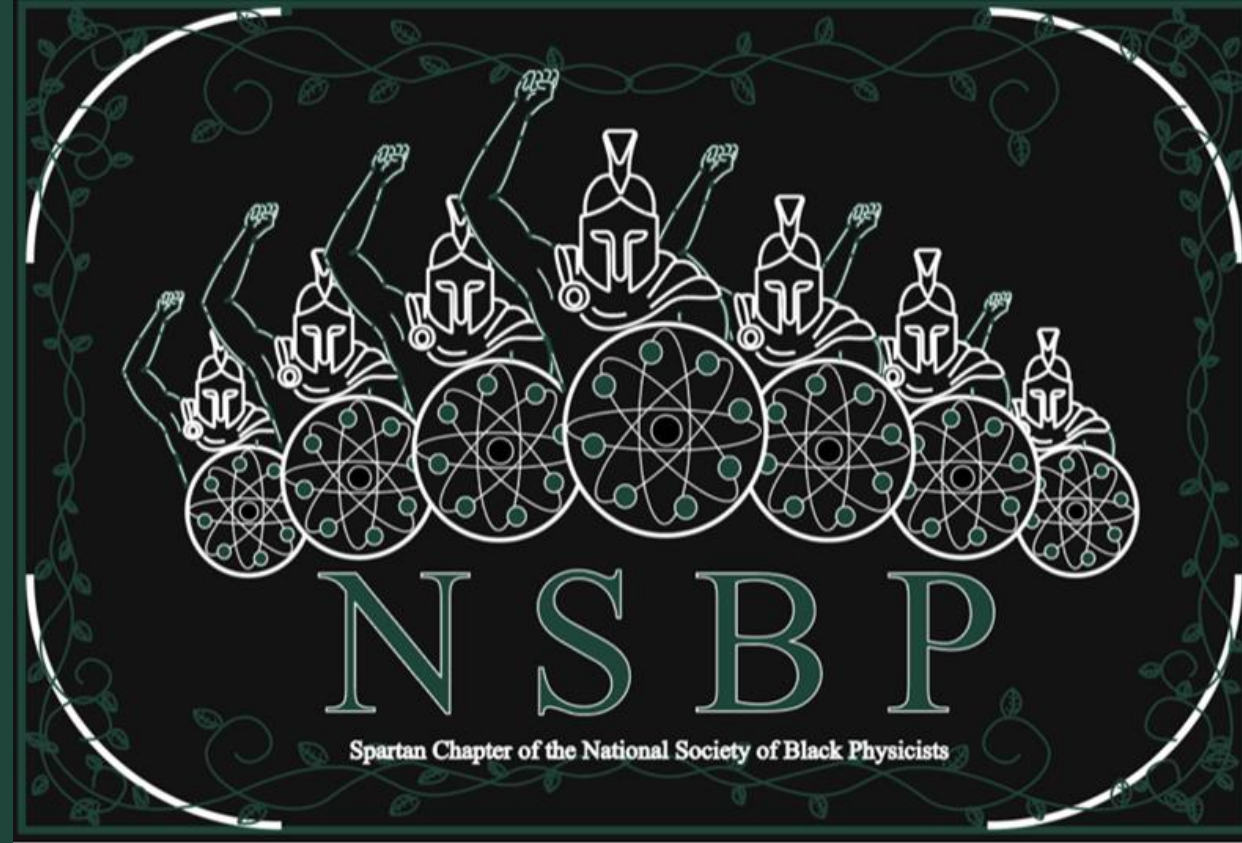
The purpose of this chapter is to promote the professional development and well-being of blacks pursuing degrees in physics within the local scientific community and region at large. This chapter seeks to develop and support efforts to increase opportunities, activities, and programs for blacks in physics. The Chapter seeks to provide a non-partisan platform for major issues of scientific and cultural significance to its membership. Most importantly, the Chapter aims to establish a more connected, personal, and engaged community for the student members of the National Society of Black Physicists (NSBP)

# National Organization



## Becoming a Member

- Open to MSU Undergraduate and Graduate students, MSU faculty and staff, and members of the Greater Lansing Community
- Active member of NSBP
- Affirm the mission!



Maya Bostock (President):  
[bostockm@msu.edu](mailto:bostockm@msu.edu)

Keontré Hughes (Vice President):  
[hughe389@msu.edu](mailto:hughe389@msu.edu)

Rachel Younger (Faculty advisor):  
[younger@frib.msu.edu](mailto:younger@frib.msu.edu)





# FRIB

## Postdoc Life

**Sivahami (Sivi) Uthayakumaar**

Post-Doctoral Research Associate

[uthayaku@frib.msu.edu](mailto:uthayaku@frib.msu.edu)

**FRIB welcome reception 2024**



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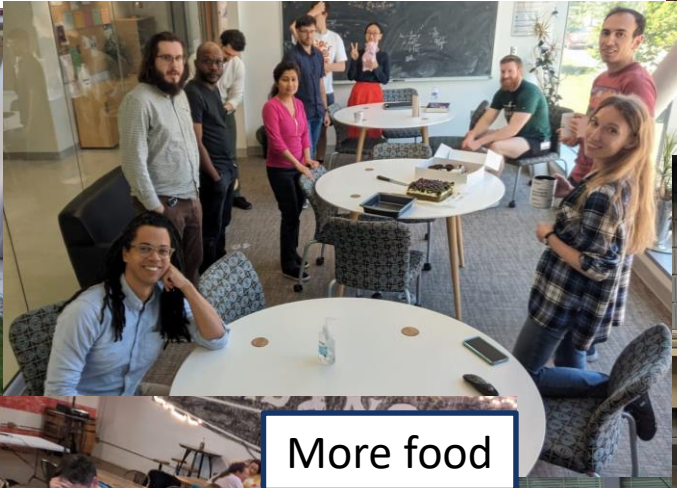
# Some of the things that are in store

- PostDoc Group Lunches (every **Wednesday at 12-1pm**)
- Monthly Postdoc meetings with ADE (**second week of each month**)
- **NEW!** Postdoc “Ideas” and Discussion meetings (Wednesdays every two weeks)
- Game nights (boardgames)
- Any other ideas are welcome! (More social ideas are being thought of)

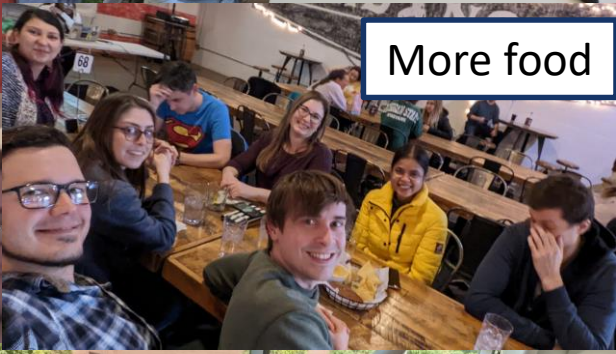


**Next planned social:**  
Bowling / Axe throwing after DNP

# Things we do that doesn't involve research



Food and boardgames are the way to the PostDoc soul!



Food

More food

Even more food

Movies

Food

Ice Cream

Cake

Boardgames

Barbecues

# FRIB Soccer-ing

- Who
  - Anyone at FRIB
  - Physics & Astronomy
  - Chemistry
- What
  - Weekly informal soccer-ing
  - NO PRIOR EXPERIENCE!!!
  - Laid back & come-and-go
- Where
  - Kinawa Middle School, Okemos, Michigan
  - Northwest Corner of Kinawa Dr. & Dobie Rd.
- When
  - Mondays 5:30 – 7:30 PM



# Come Play Basketball!

- **When:** Thursdays 5:30 PM - 7:30 PM
  - Don't have to be there right at 5:30 PM and don't have to stay the entire time
- **Where:** IM West
- **Why:** To play basketball, exercise, and build a community amongst ourselves!
- **Who:** Undergraduate students, Graduate Students, Post-docs, and Faculty
- We play basketball from 5:30 PM – 7:30 PM and usually go out and eat afterwards! We communicate via WhatsApp.

*Basketball WhatsApp*



<https://chat.whatsapp.com/CStQCynKu4Z5mxxenxJHdj>



# Help desk



Pablo Giuliani  
giulia27@msu.edu



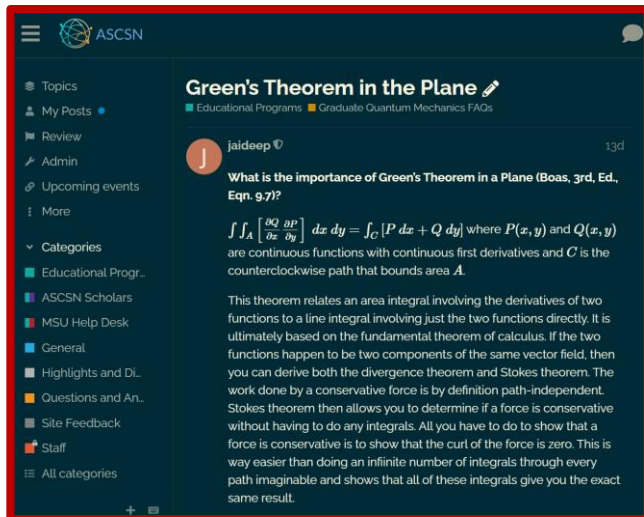
Heiko Hergert  
hhergert@msu.edu



Till Schaeffler  
schaeffe@frib.msu.edu

- Fall and Spring Semesters
- Bi-weekly student lounge visits
- Online resources:

Forum



<https://forum.ascsn.net>

Lectures

The slide is titled "Lecture 4 summary" and discusses "Easy" states. It lists "Eigenvectors", "Eigenfunctions", and "Normal Modes" as components of these states. It explains that complicated states can be expressed as linear combinations of easy states using projections, with the equation  $\langle f|g \rangle = \vec{f} \cdot \vec{g} = \int f(x)g(x)dx$ . It also covers "Linear Algebra", comparing it to cooking ingredients and matrices, and notes that "Some steps don't commute". It shows a matrix  $M = \begin{pmatrix} 2 & 1 \\ 1 & 2 \end{pmatrix}$  and the equation  $M\vec{v} = \lambda\vec{v}$ . The slide includes several diagrams: a red cone, a blue wave, a graph of  $f(x, t) \approx a_1g_1(x, t) + a_2g_2(x, t) + a_3g_3(x, t) + \dots$ , and a person pointing at a chalkboard.

<https://www.youtube.com/@ASCSN-channel>

Materials

## Derivatives, Integrals, and Taylor Series

List of contributors: Joshua Wylie

Welcome back to everyone who has completed other modules and a double welcome to those who are using this as their first module in our series! The goal of this notebook is to highlight derivative, integral, and Taylor Series concepts along with numerical implementations. If at any point you see code you're unfamiliar with (without explanation), please see the appropriate notebooks in our GitHub which we'll do our best to reference. Before we throw you into the deep end, we recommend familiarizing yourself with the following topics and packages:

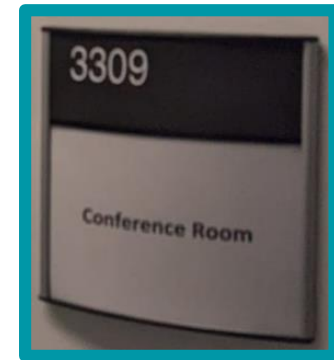
- Introduction to Python
- Introduction to Python Packages

In [1]:

```
# We'll start by importing numpy (this is usually a good
import numpy as np
```

<https://github.com/ascsn/online-guides/>

# Writing support group



For writing:

Thesis

Job applications

Papers

... and more!



# Meet a Professor Series

One speaker every month



Artemis S.



Thomas G.



Alyssa G.



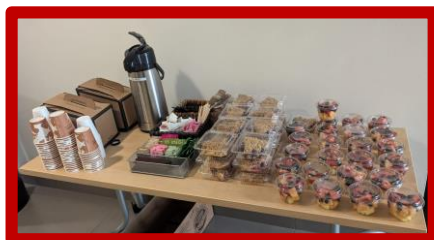
Jaideep S.



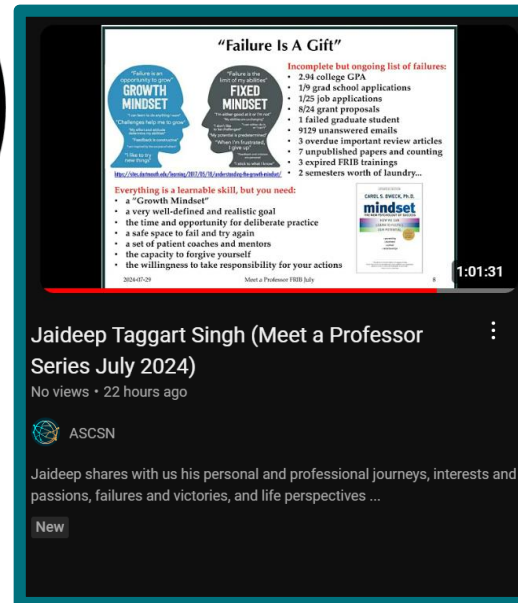
Chloë H.



Sean L.



← SNACKS!



<https://www.youtube.com/@ASCSN-channel>



# Friday lunches

Want to be in the email list?

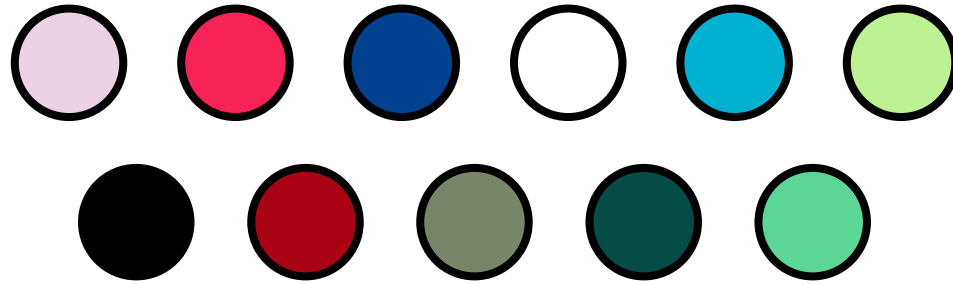


Every Friday  
around 12:20

**EVERYONE** is welcomed!

(financial) support comes from  
everyone [and by overcharging faculty/staff]

# Marbles activity



Color-blind folks ask for help



Be mindful so everyone has food



1) Grab food and sit outside in the table of your marble color

2) Ask each question to three different folks in your table, bring the card to me with your name

3) Be lucky and get a prize!

**FRIB WELCOMING RECEPTION**

Would you rather never have to sleep or never have to eat?

What do you think is the most common 4-pin password for scientists?

If you could live anywhere in the world, where would it be?

**Your name:**