

# Small College Plasma Consortium

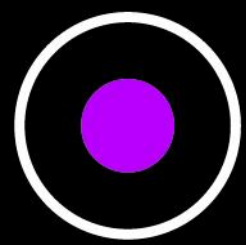
Supported By



Annual Meeting of the SCPC, January 13, 2022

## Agenda:

- Welcome and overview of SCPC
- Round of introductions
- SCPC Activities
- SCPC Website Update and Demonstration [www.smallcollegeplasma.org](http://www.smallcollegeplasma.org)
- Upcoming activities for Undergrads
  - Plasma Physics Course (Saskia/W&M)
  - Winter Seminar on Computation Research Methods (Grad Students/UCI+)
- Formation of SCPC Committees (Leadership? Proposals? Community Building? Outreach/education?)
- Connections to other groups/sites (LaserNetUS/MagNetUS, PlasmaPy, <https://usfusionenergy.org/>)
- New SCPC Activities (virtual seminar, equipment exchange database)
- Activity Brainstorming / Q&A /Open Forum



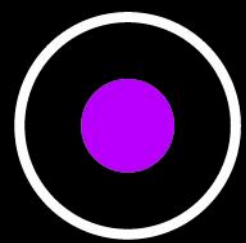
# Small College Plasma Consortium

Q: What is the Small College Plasma Consortium?

A: A coalition of faculty, students, and plasma researchers who hail primarily from teaching colleges, primarily undergraduate, and liberal-arts institutions, and/or departments.

Q: Who can join the SCPC?

A: Anyone interested in research and plasma education at the above institutions. What counts as a “small college” is very broad. Current members include undergraduate-only liberal-arts institutions or teaching colleges, small physics departments with small graduate programs, and departments from larger schools that only serve undergraduates

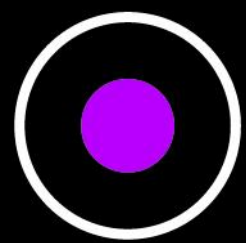


# Small College Plasma Consortium

Q: What are the goals of the Small College Plasma Consortium?

A: There are a number of goals, and many more than can be developed:

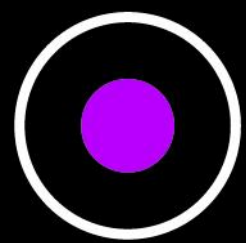
- 1) To provide a community of peers (both for faculty and for students) for members of the plasma science community who do not have the benefit of being surrounded by large numbers of fellow researchers.
- 2) To provide resources (both informational and physical) to members of this community through the pooling of many contributors
- 3) To provide resources for students/post-docs in plasma who interested in embarking on a career in these kind of institutions.



# Small College Plasma Consortium

Q: Why now?

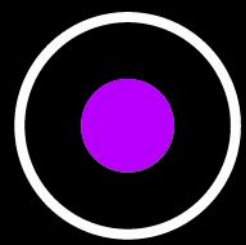
A: The need for plasma education at the undergraduate level is a crucial point and the number of current researchers at these institutions has reached a critical mass. These schools can also address pressing issues of lack of diversity, equity and inclusion in our field as well as the lack of faculty position overall.



# Small College Plasma Consortium

The [Plasma Decadal Study 2020](#) emphasized this point in multiple sections of the report (excerpts from the Workforce and Education Section (group of current members and contributors wrote a [white paper](#)):

- *Plasma-specific educational and research programs that also provide opportunities to diverse and less advantaged populations are needed to ensure a critically populated PSE workforce. Increased emphasis on PSE undergraduate research and internships, particularly at principally undergraduate institutions (PUIs), will also improve awareness of our field among all undergraduates, and women and underrepresented students in particular, thus enabling a fuller, more diverse pipeline and hence a more diverse discipline.*
- PSE research programs in PUIs could have a disproportionately large influence in both filling and diversifying the PSE pipeline.
- **Recommendation: Funding agencies (e.g., NSF, DOE, NASA, DoD) should structure funding to support undergraduate and graduate educational, training, and research opportunities—including faculty—and encourage and enable access to plasmas physics for diverse populations.**
- A more direct method for increasing interest in PSE and in diversifying the pipeline is to increase the numbers of undergraduate students exposed to PSE through research experiences. Such research experiences are more readily available at universities with PhD programs in physics and engineering than at primarily undergraduate institutions (PUIs). Yet, the highest degree in more than two-thirds of physics departments in the United States is the bachelor's degree, and approximately half of all physics bachelor's degrees are awarded by departments that do not offer a PhD. Therefore, the majority of U.S. physics students and potential plasma physics graduate students are likely not exposed to plasma physics as undergraduates. A significant portion of the future PSE workforce relies on prospective graduate students encountering plasma research only in graduate school, and only if a plasma program exists at that institution.
- PSE research programs in PUIs could have a disproportionately large influence in developing the PSE workforce by exposing undergraduates to plasma physics and engineering, thus increasing the pipeline of students entering graduate school with the goal of studying plasma physics. PUIs tend to be liberal-arts-focused institutions with broader curricula and more diverse student bodies. Their smaller student-to-faculty ratios enables closer mentoring of research experiences involving students who would not otherwise have research opportunities. Smaller colleges and institutions also have a history of serving underrepresented minorities and first-generation college students, thereby helping to introduce PSE to precisely the audience needed to diversify the pipeline.



# Small College Plasma Consortium

- Current Institutional Members of the SCPC (based on previous forms)

Washington College – Professor Derek Thuecks

Wittenberg University – Professor Jeremiah Williams

Pierce College Fort Steilacoom – Professor Hillary Stephens

Saint Michael's College – Professor Alain Brizard

Hampton University – Professor Alkesh Punjabi

Colorado College – Professor Adam Light

Swarthmore College – Professor Michael Brown

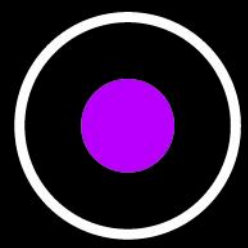
Bryn Mawr College – Professor David Schaffner

Wheaton College – Professor Darren Craig

Marquette University – Professor Tim Tharp

The College of New Jersey – Professor Angie Capece

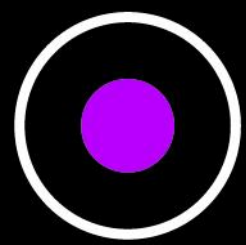
Lawrence University – Professor Matt Stoneking



Small College

Plasma Consortium

Introductions



Small College  
Plasma Consortium

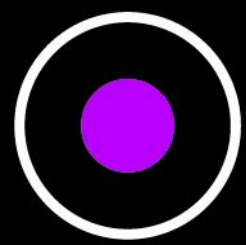
SCPC Website

[www.smallcollegeplasma.org](http://www.smallcollegeplasma.org)

Main (current) features:

- Institutional and Individual Membership
- Institutional Pages
- Resources Repository
- Discussion Forum





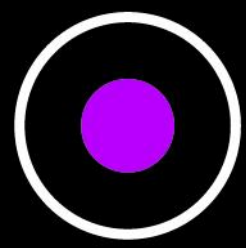
Small College  
Plasma Consortium

SCPC Website

[www.smallcollegeplasma.org](http://www.smallcollegeplasma.org)

## Website Needs:

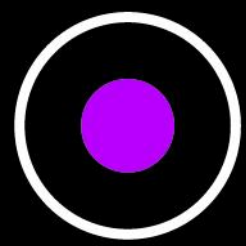
- Populate Institutional Pages
- Images from labs
- Upload Resources
- Introduce Yourself on the Forum!



# Small College Plasma Consortium

## Upcoming Community Activities

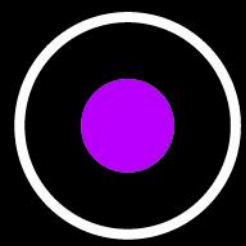
- Virtual Plasma Physics Course (Saskia/W&M)
- Winter Seminar Computational Research Methods  
<https://compmethodso.wixsite.com/computationalmethods>



# Small College Plasma Consortium

## SCPC Committees

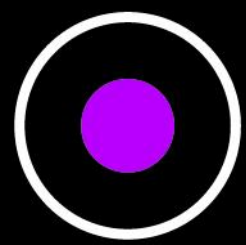
- Leadership
  - Governance Structure (Chair, vice-chair?)
- Collaborative Proposals
  - SCPC In-Person Workshop/Meeting
  - Traveling Diagnostics (e.g. Fast Framing Camera)
- Community Building
  - SCPC Events at DPP
  - Equipment Exchange/Borrow
- Education/Outreach
  - Virtual Seminar aimed at undergrads
  - Website



# Small College Plasma Consortium

## Connecting to Other Groups/Sites

- LaserNetUS/MagNetUS
  - Collaborative Proposals
  - Running as Users on LaserNet or MagNet Facilities
  - <https://lasernetus.org/>
  - <https://sites.google.com/wisc.edu/magnetus2021/home?authuser=0>
- PlasmaPy
  - Resources/Tutorials for Undergrads
  - Plasma Hack Week
- [www.usfusionenergy.org](http://www.usfusionenergy.org)



Small College

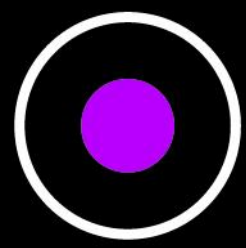
Plasma Consortium

PlasmaPy Project: A Software Ecosystem for  
Plasma Physics

[www.plasmapy.org](http://www.plasmapy.org)

Shared Code for Plasma Physics researchers

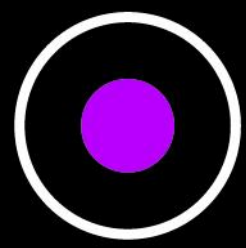
Educational through documentation and notebook  
tutorials



Small College

Plasma Consortium

Open Period of Brainstorming, Comments, Ideas,  
Questions, Suggestions, Laments!



Small College  
Plasma Consortium

Join as an individual or institution:

[www.smallcollegeplasma.org](http://www.smallcollegeplasma.org)

Thanks to NSF for funding, Ivan Carter for site/logo design