



COUNCIL ON UNDERGRADUATE RESEARCH

## 2024-2025 Elections

### Physics & Astronomy Division: Division Representative Candidates

**Position Purpose:** The work of Divisions is done by Division Representatives who advance undergraduate research by providing networking opportunities, activities, and educational content. Their aim is to create and foster community and value within the organization. Representatives support the members of their division in activities and programs that align with the CUR strategic plan, mission, vision, and values.

#### Needed Qualifications:

- Capable mentor: Experienced guide and supporter of others looking to advance their personal growth and development in areas connected to but not limited to UR.
- Communication: Professional and effective communicators, experienced in difficult conversations and able to hear and disseminate community needs
- Collaborative Spirit: Team players making space for all voices to be heard, furthering the collective understanding of the group, and cultivating outcomes to best serve CUR and its membership

*There are 2 individuals running.*

*You may vote for all candidates presented to be elected as representatives for this division.*

*This division will also be accepting write-In candidates for this election cycle.*

Candidate information is presented on the following pages. Click on each candidate name below to be taken to their Information In the document.

- [Beth Cunningham](#)
- [Sandra Liss](#)

# Beth Cunningham, American Association of Physics Teachers

## *Physics & Astronomy Division Nominee*

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### **NOMINEE STATEMENTS**

#### **Please comment on your involvement in undergraduate research activities in the context of your institution and its mission.**

My role as Chief Executive Officer of AAPT is to oversee the management of the organization. This provides me an opportunity to guide projects and programs at AAPT as well as serve as the spokesperson on physics education issues including undergraduate research. I have a broad perspective of physics programs and the excellent work being done by faculty and departments in supporting undergraduate research in physics.

AAPT adopted a statement in 2009 that physics departments should provide opportunities and encouragement for undergraduate physics majors to engage in a meaningful and appropriate undergraduate research experience. As such, AAPT provides resources to help departments with undergraduate research.

AAPT co-sponsored a national task force examining the skills and knowledge that the next generation of undergraduate physics degree holders should possess to be well-prepared for a diverse set of careers. The results of the task force were published in a report ("Phys21" – see <https://www.compadre.org/JTUPP/report.cfm?>) that included recommendations on the professional skills and knowledge that students need as well as guidance for physicists considering revising the undergraduate curriculum. Many of the professional skills needed by students are developed through undergraduate research experiences.

The physics and astronomy community, in collaboration with AAAS, developed a program that provides an opportunity for departments to create systemic, structural change regarding diversity and inclusion (see <https://seachange.aaas.org>). I currently chair the committee that developed and oversees the program for physics and astronomy departments (see [https://www.aapt.org/Programs/Sea\\_Change/index.cfm](https://www.aapt.org/Programs/Sea_Change/index.cfm)). The first cohort in the pilot was launched in 2021 and we currently have 3 departments with Bronze awards. We anticipate that undergraduate research will emerge as one way to increase the recruitment and retention of a diverse student body and faculty in physics. The CUR Physics & Astronomy division is one of the organizations that has representation on the Physics & Astronomy SEA Change Committee.

#### **In what ways have you helped promote diversity and inclusion in URSCI?**

In 2020, AAPT formed a DEI Task Force to develop AAPT's DEI strategy, including a DEI vision, value proposition, and guiding principles. This 2-year project resulted in a bold vision for AAPT, and DEI goals developed by the Task Force were incorporated into AAPT's new strategic plan. As the AAPT CEO, I was deeply involved in all aspects of the Task Force. I continue to provide leadership with the new AAPT DEI Council that serves as AAPT's DEI governing body and provides long-term strategic oversight of the DEI roadmap and AAPT's DEI substructures.

I have also helped the CUR Board to develop the definitions of diversity, equity, and inclusion for CUR. This is a work in progress.

I am chairing the Physics & Astronomy SEA Change program which provides an opportunity for departments to reflect deeply on the challenges and opportunities of making sure everyone in the department is successful and delivering education excellence. The departments learn from other departments participating in the SEA Change Physics and Astronomy project. Departments complete a self-assessment and develop an action plan that defines specific outcomes that are measurable, achievable, and relevant. Departments can obtain a bronze award and, thus, recognition for their diversity, equity, and inclusion work. The impact of this award will cut across all of the programs offered by a department including undergraduate research.

**How do you anticipate your skills will help successfully uphold the Division Representative charge?**

My leadership experience in higher education and in STEM professional societies gives me a strong understanding of a mission-driven organization. I have broad experience at various governance levels in a variety of professional societies. I bring knowledge of a number of different disciplines including physics and physics education and a passion for undergraduate research. I also am involved in and lead various diversity initiatives to increase the number of women and historically excluded populations in science, particularly physics and astronomy. My role as Chief Executive Officer of the American Association of Physics Teachers is to oversee the management of the organization. This provides me an opportunity to guide projects and programs at AAPT as well as serve as the spokesperson on physics education issues including undergraduate research. I bring an important perspective of physics programs and the excellent work being done by faculty and departments in supporting undergraduate research in physics.

**If you have served a previous term as Division Representative (previously Division Councilor), are there any particular contributions during your previous term(s) that you would like to highlight?**

I have been a member of CUR since the mid-1990's and have served on the CUR Physics & Astronomy division since 2000. As a member of the P/A division, I've served as the contact for the faculty mentoring program.

I have also served on several CUR projects:

- Facilitator, CUR Regional Workshop, October 2008, Truman State University, mentor to University of Wisconsin Stout team and performed a site visit in September 2010.
- Facilitator, CUR Workshop, April 2012, City College of New York.
- Member, CUR Governance Task Force, 2011 – 2013.
- Consultant, CUR Transformations Project 2017 – 2022, co-facilitating Rice University and Radford University physics department teams.
- Member of the Executive Board (2019-2022).
- Member of the Governance Task Force (2021)

I regularly attend meetings and contribute to activities of the division. I have attended most CUR Annual Business meetings except when they have conflicted with the AAPT Summer Meetings or other responsibilities related to my current position. I have given presentations at past Biennial meetings.

# Sandra Liss, Radford University

## *Physics & Astronomy Division Nominee*

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### **NOMINEE STATEMENTS**

#### **Please comment on your involvement in undergraduate research activities in the context of your institution and its mission.**

My institution places emphasis on student involvement in genuine research activities as a key part of their college experience. In support of this mission, I directly supervise undergraduate research both during the academic year and over the summer through university-supported research fellowships. In addition to mentoring research, I also participate in and promote my institution's research presentation forums. In my role as observatory director, I am developing a novel research program with student experiences and input at the forefront of my planning. Finally, I serve as a college representative on the advisory board for our Office of Undergraduate Research and Scholarship (OURS). As part of this position, I serve as a liaison between the as well as provide feedback that is used to shape the OURS goals, planning, and assessment.

#### **In what ways have you helped promote diversity and inclusion in URSCI?**

As an undergraduate student I did not pursue research until the end of my junior year. I hadn't seen it as an option before that, and not because it wasn't available or because I wasn't aware of it. Rather, I did not believe I could contribute original scientific ideas. Now I am actively involved in fostering an environment where all undergraduates feel like they can explore research, scholarship, and creative inquiry.

I take several approaches to creating this welcoming research environment for students, starting before they even begin their first semester at my institution. During new student orientation make incoming students aware of research opportunities that are specifically designed for them at their current level. These are geared towards teaching foundational tools that can be applied across many field-specific endeavors, allowing them to transition between projects as their knowledge develops and research interests evolve.

Within my courses, I incorporate research activities that involve student choice in topic and approach. Further, I give them the chance to reflect on their performance and growth as a scientist throughout the course. This allows students who may not have considered pursuing research the chance to develop the same skills and competencies within the classroom.

I actively seek professional development opportunities centered incorporating diversity, equity, and inclusivity efforts within and beyond the classroom so that students know that they belong in this research space. I am also involved with efforts focused on building community at the department, college, and university levels. This has included volunteering as a panelist for conversations on Women in STEM, organizing guest speakers with unique career trajectories, and serving on a team that organizes college wide social and academic events. In addition, I collaborate across fields and institutions to share ideas and incorporate new techniques into our research programs.

#### **How do you anticipate your skills will help successfully uphold the Division Representative charge?**

I believe that my strong collaboration skills, diverse experience with undergraduate research, and extensive participation in professional development opportunities will enable me to continue upholding the CUR Division Representative charge.

I have built a network of students, faculty, and professionals across disciplines and institutions that has given me a broad perspective of what research and creative inquiry can look like within the undergraduate setting. This network is a valuable resource for fostering partnerships, identifying opportunities, and generating ideas for CURPA.

My experience serving as an advisor to a broad spectrum of undergraduate research experiences has given me an understanding of the challenges and opportunities students face in their academic journeys. I have worked with students at all stages of their undergraduate careers—ranging from introductory to advanced levels—across various disciplines, both within and outside of the classroom setting. I will use this experience to support the CURPA Representatives in our efforts to advocate for initiatives that address the diverse needs for undergraduate research students.

Finally, I have both participated in and organized professional development opportunities focused on effective mentorship, DEI efforts, and curriculum development. The resources and insights these experiences have provided will allow me to contribute to ongoing efforts undertaken by the CURPA team in facilitating programs to support undergraduate research.

**If you have served a previous term as Division Representative (previously Division Councilor), are there any particular contributions during your previous term(s) that you would like to highlight?**

I have served one term as a Division Representative/Councilor. During this time, I have participated in division meetings, served on the awards committee, and will be serving as the secretary for the remainder of this term.