



COUNCIL ON UNDERGRADUATE RESEARCH

2024-2025 Elections Physics and Astronomy Division: Councilor Candidates

Position Purpose: The CUR Council is a multidisciplinary body providing advisory input to the Board, so they have a broader perspective when making resource investment decisions. The Council serves in a communication capacity, surfacing key items arising from the Divisions, bridging the insight of the Division to the work of CUR as a whole, and serving as one means of information and resource dissemination from the central organization to the Divisions and members.

Needed Qualifications:

- Communication: Professional and effective communicators, experienced in difficult conversations and able to hear and disseminate community needs
- Foresight: Individuals able to look to the best interests of CUR into the future when discussing various issues impacting CUR members and higher education
- Creativity: Thoughtful supporters of change, able to think outside the box to find new initiatives
- 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 is 1 individual running.

You may vote for the candidate presented to be elected as a councilor for this division.

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

- [Chitra Solomonson](#)

Chitra Solomonson, Green River College

Physics & Astronomy Division Nominee

NOMINEE STATEMENTS

Describe your leadership experience both within CUR and extramural.

From 2012-2016, I developed and disseminated inquiry-based research exercises, in partnership with the University of Washington and NSF (DUE 1141339). The project inspired an undergraduate research course in which students learned to fabricate and optimize organic solar cells. The course's primary goal was for students to learn fundamental research principles and practices. The course is now on hold due to budgetary constraint but students continue to fabricate solar cells as part of the Calculus-based physics sequence.

In 2019, I was a co-Principal Investigator in a regional NSF LSAMP "Bridges to the Baccalaureate" Pre-Alliance Planning project (DUE 1817625). This led to a Bridges to baccalaureate NSF LSAMP project (#2009170). One of the goals of this project is to attract more minoritized students to STEM by engaging them in undergraduate research. This is a partnership between three community colleges, only one of eight such partnerships in the country. The grant has been renewed until 2027.

Recently, I have been invited to join the American Institute of Physics (AIP) Advisory Panel for Visioning Engagement with Undergraduate Students (the VENUS panel), a special blue-ribbon panel that will provide input to the AIP Board and Management as the organization seeks to chart a promising future for the critical engagement with students in physics courses. My position in this panel will help me advocate for undergraduate research adapted for the two-year college student.

How will your skills help the Council successfully uphold its charge?

I am keen on representing this two-year college perspective in the council as well as in the organization.

My involvement with undergraduate research started in 2010 when a chance email message started a collaboration with Prof. Christine Luscombe (then at UW, Seattle). In 2011, we were awarded a TUES grant to incorporate undergraduate research in the Calculus-based Physics sequence. I was able to create an independent undergraduate research course based on clean energy (and organic solar cells). This course has been offered every year from 2017 to 2020. My current focus is to incorporate Course-based Undergraduate Research (or CUREs) into my courses so all students have access to research.

In the Fall 2018, I led the effort (with our faculty librarian, Jennifer Rohan) to host a showcase to celebrate student work. We have continued to host the showcase every year both virtually and face to face. As a member of the steering committee that drafted my institution's most recent strategic plan (2021-2026), I advocated for undergraduate research to increase the success of diverse students.

Last year, through an NSF conference grant, I organized a conference that brought together teams from nine Washington community colleges to draft a plan to make undergraduate research a part of the curriculum. This effort will now be supported by an award received by the Washington state board of community and technical colleges to support undergraduate research in community colleges in Washington state.

Finally, as a member of CUR, I see myself as a representative of Two-Year Colleges where there is a great need to excite, inspire, and support diverse students to transfer successfully to a four-year college. I believe undergraduate research (as conducted in a Two-Year College) is a way to achieve this goal, especially for non-traditional students.

NOMINEE ABBREVIATED CV

An abbreviated CV highlighting the candidate's accomplishments with respect to undergraduate research is available on the next page.

Chitra Guruswamy Solomonson
MS-SC, Green River College, 12401 SE 320th St. Auburn, WA 98092
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Education

University of Madras, Madras, India	Physics	B.Sc. 1983
Indian Institute of Technology, Madras, India	Physics	MSc. 1985
Louisiana State University, Baton Rouge, LA	Physics	M.S. 1989
Louisiana State University, Baton Rouge, LA	Physics	Ph.D. 1996

Appointments

Physics & Astronomy Councilor, Council of Undergraduate Research 2019-present		
Treasurer, WA section of the American Association of Physics Teachers		2009-2020
Physics and Math Instructor, DeVry University, Federal Way, WA		2002 - 2003
Business Analyst, eBusiness, AT&T Wireless, Redmond, WA		2000 - 2001
Physics Instructor, Highline Community College, Des Moines, WA		1999 - 2000
Physics Instructor, Louisiana State University (LSU), Baton Rouge, LA		1996 - 1997
Curriculum Developer, Louisiana Cooperative Extension, (LSU)		1997 - 1998
Research Fellow, Educational Testing Services (ETS), Princeton, New Jersey		1994 (Summer)
Research Assistant, Photonics Lab, Dept. of Physics, Louisiana State University		1989 - 1993
Teaching Assistant, Physics Department, Louisiana State University		1986 - 1989
Research Assistant, Materials Science Research Center Indian Institute of Technology, Madras, India		1985 - 1986

Publications

https://materialseducation.org/educators/matedu-modules/docs/2022/Very_Berry_Solar_Cells.pdf

Interview in Symmetry Magazine:

https://www.symmetrymagazine.org/article/encouraging-a-new-community?language_content_entity=und

Featured in [Community College Daily](#)

"Students' Understanding of the transfer of charge between conductors", Chitra Guruswamy, Mark D. Somers and R.G. Hussey, Physics Education, Volume 32, Number 2, page 91, March 1997.

<http://iopscience.iop.org/0031-9120/32/2/015>

Awards

Green River College Distinguished Faculty Award 2020

Synergistic Activities

2024-2025 – Visioning Engagement with Undergraduate Students (American Association of Physics)

2024-2027 – Co-PI, NSF LSAMP [Bridge to Baccalaureate Puget Sound Alliance](#)

- 2010 - present: Reviewer for NSF, Physics Today, MatEDU
- 2021-present: [STEM Transfer Partnership project](#) funded by the Community College Research Initiative (CCRI), UW
- 2020-2024 – [Co-PI, NSF LSAMP Bridge to Baccalaureate Puget Sound Alliance.](#)
- 2023 – Organized and facilitated the Cascadia CURE Conference (C³) funded by NSF #2307048.
- 2021 – Participant in Diversity and Equity workshop, The People's Institute Northwest
- 2020-present: Co-Principal Investigator: LSAMP Pre-Alliance Planning: Puget Sound Alliance (with North Seattle College and Pierce College)
- 2019-2022: Chair, Green River Undergraduate Research Committee
- 2019-2021: Co-Principal Investigator: Green River College Faculty Excellence grant to develop Course-based Undergraduate Research (CURE) in the Engineering Physics sequence.
- 2018-2020: Co-Principal Investigator: LSAMP Pre-Alliance Planning: Puget Sound Alliance (HRD# 1817625)
- 2018-2019: Co-Principal Investigator: Green River Faculty Excellence grant to identify faculty interest in undergraduate research. Organized the first Academic Showcase on campus (2019) and the virtual Academic Showcase (2020/2021)
- 2017 – 2019: Co-Principal Investigator, Innovation Funding Grant, Green River College. Three-phase project, with support from Washington State Board for Community and Technical Colleges – facilitated workshop, created a faculty learning community on use of the Transparency in Learning and Teaching Framework (<https://www.unlv.edu/provost/teachingandlearning>).
- 2017: Participant, Research Experience for Teachers – Clean Energy Institute, University of Washington, Seattle.
- 2012 – 2016: Principal Investigator: “Inquiry Lab Modules – Introducing Research Experiences at Community Colleges” (NSF DUE 1141339 – \$248,711, February 2012 – May 2016). Also, supplemental award (\$21,179, September 2013). Students fabricate and characterize organic photovoltaic cells as a research activity. Co-PI: Christine Luscombe, Professor, Materials Science and Engineering, University of Washington.
- 2014: Facilitator, Solar Cell & NSF Grantwriting Workshop for Two-Year College STEM Faculty, Participants from 10 WA community colleges made solar cells using blackberries and learned about CUREs, NSF grant funding and how to write competitive proposals. Collaborated with John Dwyer, Principal Investigator of NSF DUE # 1179271; and with the Washington State Center of Excellence for Careers in Education.
- 2011: Participant, Research Experience for Teachers – Clean Energy Institute, University of Washington, Seattle.

Service

Chaired multiple hiring committees, member of multiple tenure committees in different capacities

Green River College Strategic Planning Steering Committee Member

Panelist: ‘The Model Minority Myth’

Member of several instructional committees: Learning Outcomes Committee, Faculty Development Committee