



View from the Chair

Hello, Y'all! It is hard to believe that we are already nearing spring—at least in some parts of the country. Time for a quick update on the CUR and CURPA activities for this academic year.

The division's student travel award program has really become quite popular. Thanks to a reboot and the careful attention of CURPA's Rae Anderson (University of San Diego), the process for applying, reviewing, and selecting awardees is running like a well-oiled machine! As we did last year, the bulk of the total CURPA budget goes to supporting students with small stipends to help offset expenses for presenting research at scientific conferences. This year, the total student travel awards compose 90 percent of the CURPA budget. These small awards are meant to encourage matching from departments or other funding sources on the student awardee's home campus. Although we hope to support more students to attend the National Conference on Undergraduate Research (NCUR), we also support students to attend conferences hosted by professional societies (APS, AAPT, AAS, APS-DNP, and many others).

The remaining 10 percent of the division's small budget will be used to honor outstanding mentors. I encourage you to consider nominating an outstanding colleague to receive the CURPA Division Faculty Mentor Award. Last year, two outstanding nominees were selected. (See the fall 2019 [CURPA Diem](#) for a terrific article about these two faculty mentors, or see the feature on the CUR [website](#)). *(continued on next page)*

About CUR's Physics & Astronomy Division

The Physics & Astronomy Division of the Council on Undergraduate Research provides networking opportunities, activities, and resources to assist Physics and Astronomy administrators, faculty members, students, practitioners, and others in advancing undergraduate research.

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We recently welcomed newly elected councilors to the CURPA division. The CURPA council is always happy to welcome new members into the group. The elections for spring 2020 resulted in several re-elections along with new councilors. Please welcome new councilors Dereth Drake (Valdosta State University), David Moffett (Furman University), and Jalal Nawash (University of Wisconsin–Whitewater), and welcome back Rae Anderson (University of San Diego), Carol Hood (California State University–San Bernardino), Michael Jackson (a former CURPA chair, Millersville University), and Terry Oswalt (a former CURPA chair, Embry-Riddle Aeronautical University). This is a truly wonderful group of folks to work with. We can't wait to teach the new councilors all the secret handshakes and such.

As I write this short update, elections for the CUR Executive Board are underway. Since the changes to the structure of the CUR Executive Board, the distribution of representation on the Executive Board varies on a rotating basis among the divisions. This year, we are excited that *CURPA Diem* editor Rick Thompson is a candidate for general representative to the board.

The 2020 Annual Business Meeting (ABM) will be held June 25–27, 2020, at Purdue University in West Lafayette, and I hope to see the full cadre of CURPA councilors there in person. This year, the divisions have been allotted a total meeting time of more than five hours for doing all the business of the division as well as discussing the role of the PA division in the overall CUR strategic plan. Please also consider attending the Biennial Conference after the ABM (June 27–30). If you have a concern or a celebration that you think the CURPA

Council should be thinking about—please consider contacting one of the CURPA councilors who will bring it to the ABM. A list of the CURPA councilors can be found on the CUR [website](#) (select Physics and Astronomy Division Councilors).

Again, I urge all the Physics/Astronomy folk out there to think about their role in the grand scheme of training up excellent researchers. Those willing to mentor students at the undergraduate level are making a huge impact on the physics and astronomy community, so please keep up the good work! Experienced faculty mentors should consider mentoring early-career faculty so that they can join in the fun. Being part of a larger community of like-interested minds is always a bonus. You can start by following CURPA on Facebook (just click [here](#)). The page is only as good as the posts of the group, so please use this forum to show us what you and your students are up to. No need to wait until summer—if you have something fun happening in your world, please share.

We are always looking for ways to make CUR more visible at our “regular” society meetings. If you would like to be a CURPA Ambassador at your favorite meeting that encourages your undergraduate student researchers, please let us know. In addition to efforts to make the CURPA community more visible, we also hope to get those of us who enjoy a life filled with research beside our undergraduate students more connected. We share many of the same concerns and many of the same challenges. A community of like-practitioners is a good thing. Everyone has something to offer, and everyone has something to learn! Sometimes we think our stories don't matter, but as soon as they are shared, we usually find that they do

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matter, and can be important in inspiring others. Please consider sharing your story here in *CURPA Diem* (editor Rick Thompson, rt533@cabrini.edu), on the CURPA Facebook page, or if you are shy—just send me an email.

May your labs be buzzing with fully operational equipment, your data terminals be full with fantastic results, and your imaginations be inspired with all that is possible.

Toni Sauncy

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2019–2020 CURPA Chair

Texas Lutheran University

Plan to Attend NCUR 2020!

Like past events, NCUR 2020, hosted by Montana State University Bozeman from March 26–28, 2020, will again provide your undergraduates with an outstanding conference and presentation experience. Oral presentations, poster presentations, and presentations involving the visual and performing arts will be offered by approximately 3,800 undergraduates.

Keynote speakers for NCUR 2020 include:

- (1) Dr. Mae Jemison, the first African American woman in space and founder and president of the Jemison Group and BioSentient Corp (Medical Technology Companies)
- (2) Dr. Ofelia A. Olivero, Chief, Intramural Diversity Workforce Branch, Center for Cancer Training.

NCUR 2020 special interest sessions for your students include, among others:

- (1) Applying to graduate school,
- (2) Developing a resume or CV, and
- (3) Applying to medical school.

NCUR 2020 has a number of exciting opportunities planned, including:

- (1) An opening ceremony focused on Montana's Native American heritage and a special jazz performance by Professor Ryan Matzinger that will help set the breadth and depth of scholarly research,
- (2) A Friday night event that features the Museum of the Rockies, and
- (3) Weekend excursions to Yellowstone National Park (if you haven't been to Yellowstone, don't miss this one!), Bridger Mountains Cross Country Ski and Snowshoe Adventure, and downhill skiing at Bridger Bowl, among others.

Online registration is now open. For more information about NCUR 2020, please go to this [site](#). Plan to attend and plan to bring your students to NCUR 2020!

CUR Physics and Astronomy Mentor Awards

The CUR Physics and Astronomy Division would like to honor mentors in PA disciplines for their long-term efforts in mentoring undergraduate research (UR) students. Individuals may be nominated by CUR Institutional or Institutional-Enhanced members, or individual CUR members. Nominees are encouraged to be CUR members, but it is not required for nomination. Individuals mentoring interdisciplinary projects are eligible as long as those projects involve a major physical or astronomical component. Nominations and/or recommendations must be submitted in their entirety by **11:59 pm (EDT), Tuesday, March 31, 2020**, at this [link](#).

Mentors with three or more years of experience in a primary role are eligible. Although this generally corresponds to

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Mentor Awards*continued from page 3*

assistant professors and above, the committee recognizes that many mentors are not in tenure-track positions and that some scientists begin significant undergraduate research mentoring before they obtain a permanent position. Nominations of individuals at two-year colleges, national labs, research centers, etc., are especially encouraged. Nominations must be made by colleagues who know the nominee well. Self-nominations will not be accepted.

Application requirements:

Online application [form](#), to be completed by the nominator.

Nomination letter—submit a 2–3 page letter to the link above that *specifically addresses the nominee’s mentoring of UR students*. The letter should describe:

- (1) The nominee’s long-term personal commitment to mentoring;
- (2) How the nominee’s mentoring strategies fit student needs and limitations;
- (3) Additional information that the nominator feels is warranted.

Nominee CV/resume (two-page limit)—Submitted to the link above. This document should provide information on the cumulative UR mentoring activities. All publications and presentations with undergraduate coauthors within the past five years should be listed.

Two recommendation letters from undergraduate research students (two-page limit for each letter)—At least one student must have been mentored by the nominee within the past five years. Each letter should detail how the mentor helped them achieve in areas of their life that mean the most to them (i.e.,

academic, career, or personal growth) and how the mentor modeled positive behaviors and successful research outcomes. Additional information about the mentor’s work with the student is welcome.

Recommendation letters should be submitted separately to this [link](#).

The CUR Physics and Astronomy Councilors will review all completed applications and select this year’s winner(s). The awardee(s) will be notified in late spring. Awardees will receive a plaque recognizing their significant contributions to mentoring undergraduate researchers. Letters of recognition will also be sent to identified administrators (department chair, dean, provost, center head, etc.).

Questions about the application process should be addressed to Carol Hood at chood@csusb.edu.

Student Travel Award Reports

Four students were awarded travel support last December. The following are their reports on their conference experiences.

Andrew Engel

The Dark Energy Working Group winter meeting was a great opportunity to learn more about the application of machine learning in astrophysics, workshop details of my own senior thesis projects with experts in my field, and network with future employers and graduate school advisers. It will be one of the defining moments of my undergraduate experience and pushed me toward future success as a scientific researcher.

The experience included a one-day winter school with four lectures from experts in neutrino physics, machine learning, model evaluation, and mirror fabrication. The next four days had breakout sessions to hone in on

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Student Travel Award Reports

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the specifics of each domain, in which I also presented my preliminary results on a redshift estimator model to a full room of supernovae scientists. I also toured the University of Arizona's Mirror Laboratory and the onsite AURA office space and there saw the future of American astronomical programs.

I would like to thank the Council on Undergraduate Research for making this opportunity possible.



Andrew Engel at the Dark Energy Science Collaboration Winter Meeting

Duc Hoang

Attending the International Conference on Machine Learning and Applications was enlightening for me as an undergraduate student. At first, I was quite intimidated (and maybe proud), knowing that I am one of the few undergraduate students in the conference, and that many experts in different subfields of machine learning are in the audience. However, after gathering enough courage to go up to people and ask questions about their research, I realized that they were generally very friendly toward students. They also answered thoroughly every question no matter how naïve it might have been. Of

course, they also asked about my research, and I tried to reply with the same level of professionalism and intellectual maturity.

Presenting my research was also an interesting part of the experience. When working on my project, I often had moments of insecurity, thinking that no one would be interested in my research. On the contrary, attending the conference helped me to find out that many people cared about solving the same problems. It was exhilarating to talk to them, sharing my approaches and my thinking process to solve the problems. I ended up having many productive discussions that lasted for hours.

All in all, my experience with the conference was excellent. It introduced me to the inner workings of professional research, forced me to step outside of my comfort zone, and helped my research ideas to reach a wider audience of experts in my field. This motivated me to work harder as a professional researcher, and I cannot wait until my next conference!

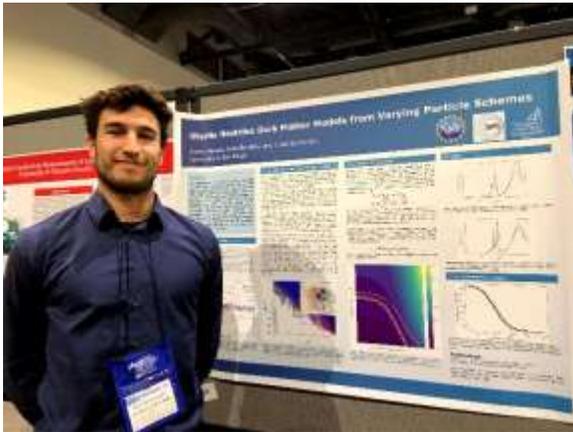


Duc Hoang at the International Conference on Machine Learning and Applications

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Anton Navazo

PhysCon was a great conference to break into the world of concurrent scientific research. It was my first conference and my first time presenting research. It was perfect for an undergrad that is interested in physics. Every speaker gave a really thorough yet captivating presentation of their field/work, and most undergrads seemed to really want to be there.



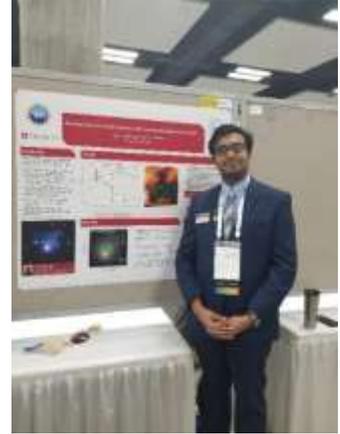
Anton Navazo presenting his poster at PhysCon

Vivek Vankayalapati

Attending the AAS meeting was extremely beneficial for me. I was able to meet several colleagues of my research mentors, and I received many comments to help me guide the organization and improve my understanding of my project. I attended the conference in its entirety, and as a result, my interest was piqued by the talks discussing transient events, and I would like to delve into the literature about this field to see if I would like to pursue it further. I also gained

**Vivek Vankayalapati
at the 2020 American
Astronomical Society
Meeting**

a lot of information about the Decadal Survey, a research review providing recommendations to government agencies on how to prioritize funding for astrophysics research, and the four flagship concepts, and met project members for the Lynx Concept X-ray Observatory, which I hope is ranked highly.



I met several students from across the country and received very helpful advice from students who participated in the Space Telescope Science Institute summer program and some encouragement as well. I also presented a poster about the outreach group I am a part of and met several people from the Keck, Kitt Peak, and Canada-France-Hawaii telescopes, and may pursue an outreach collaboration in the future. I am also developing a potential collaboration with the Lowell Observatory to develop cultural astronomy materials. I attended several professional development sessions, and especially benefited from the talks about networking and nonacademic careers. Finally, I managed to stuff my travel belongings to the brim with all the free stuff I could carry!

 An advertisement for a book. The background is yellow with faint icons of books and graduation caps. The text reads:

HOW TO
Train Undergraduates in Research Integrity and
the Responsible Conduct of Research

Julio F. Turrans with Michael S. Springer
Foreword by Anne Boettcher

Purchase Your Copy Today >>

 On the right side, there is a 3D rendering of the book's cover, which features a photograph of a person in a white lab coat working with a flower.

2020 Posters on the Hill

Abstracts submitted to the Posters on the Hill event have been reviewed with selections and honorable mentions identified. Nearly 350 completed abstracts were submitted this year, with each abstract evaluated by at least three reviewers. The event is scheduled for April 20–21 in the US Capitol, Washington, DC.

Michael Jackson
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CUR Departmental and Program Review

For members of departments planning an external review of their department or program, there are a number of significant tasks to accomplish. Typically, these include performing a thorough self-study and securing appropriate external reviewers; whereas some institutions have a specific, required format and timeline to plan and organize a review, others leave it to the department to determine the specific structure.

The CUR Departmental and Program Review Committee offers one option to accomplish these goals by helping members identify potential reviewers and providing a thorough list of potential self-assessment components: <https://www.cur.org/what/services/program/>

Upon contacting CUR Program Review Services, you will be connected with the Physics and Astronomy liaison who maintains a list of potential reviewers and will work with you to identify an appropriate team. Reviewers are CUR members who represent a broad range of backgrounds and expertise beyond undergraduate research to perform a comprehensive program review. CUR recommends completing a self-study in advance for a team of two or more reviewers for a two-day site visit.

The time frame for a review typically includes preparing the self-study, which may take many months, providing this document to the review team three–four weeks ahead of the site visit and receiving a formal report from the review team four–six weeks after the visit. The CUR Program Review website includes a comprehensive list of items that might be included in a self-study, with the specifics dictated by the goals and needs of the department.

Information on potential self-study components are freely available online at the website above. The fee for the review is \$600 per reviewer per day, which is coordinated directly with the consultants. There is also a \$750 CUR fee, but it is waived for CUR Institutional and Enhanced Institutional Members.

If you have any additional questions, or if you would like to be considered as a potential reviewer, please contact me.

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Opportunities

If you have a job opening or program that you would like to advertise here, please send the information to rt533@cabrini.edu for inclusion in the next issue of CURPA Diem.

Winter 2019 SPUR: “A Retrospective on Undergraduate Research”



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CURPA Diem Deadline

CURPA Diem is issued three times per year, and we welcome your contributions! Please send your submissions, comments, achievements, opportunities, etc., to Rick Thompson (rt533@cabrini.edu). Deadline for the spring 2020 issue is **April 10, 2020**.