



CURPA NEWS



Newsletter of the Council on Undergraduate Research Physics and Astronomy Division

Winter 2014

Message from the Chair

Happy New Year and welcome to the winter edition of the Physics and Astronomy (P&A) Division's newsletter. During the upcoming months there will be some important activities related to undergraduate research that I would like to highlight.

The first is the draft statement on Undergraduate Research being considered by the Council of the American Physical Society (APS) for approval as an official APS statement (see article by John Mateja below). The preliminary draft of this statement, along with its justification, can be found using the link below (if you have difficulty accessing the link, please contact me).

www.aps.org/policy/statements/undergraduate.cfm

Additionally if you are a member of the APS, they would like your input regarding their statement which you can provide on their website. Please consider taking the time to read these documents and provide your input. Over the years, a number of P&A professional societies have adopted similar statements supporting meaningful research experiences be provided to all physics and astronomy majors, including the Society of Physics Students, the CUR P&A Council, AAPT, AAS, and the APS Committee on Education. We are now very pleased to see that the APS Council is considering adding its voice and support to the effort. Please keep the momentum going and consider writing in support of this statement, along with providing your individual feedback.

Research was the defining moment in my undergraduate education that provided opportunities beyond what I ever thought possible. For that, I have fellow P&A councilor G. R. Sudhakaran to thank (particularly for his seemingly infinite patience). Therefore, one of the biggest beneficiaries of this statement will be our undergraduate population. Please encourage your students, particularly since the APS has both undergraduate and graduate student memberships, to provide their input. Also consider having your local SPS chapter provide their feedback directly to the APS Council.

The P&A councilors are planning to write a letter in support of the draft APS statement. Please feel free to contact me with any additional feedback you would like councilors to consider as we prepare our remarks, particularly those of you who are not APS members and thus have no other way to provide feedback (and hopefully your support).

Finally, elections for P&A councilors are going on right now. One advantage in having elections is the opportunity to see what people are working on and interested in. Please take advantage of this opportunity to check out those who are running for a P&A councilor position. Councilors hold three-year terms with an approximate 8 member cohort elected each year. As you look at candidate biographies, please consider running for a position sometime in the future. Serving on the council is a great way to connect with others interested in and advocating for undergraduate research.

Once again, best wishes to the start of 2014. Please feel free to contact me if you

have questions or suggestions at how the P&A council can help advocate and promote undergraduate research, including assisting you in such activities.

Michael Jackson
Chair, CUR Division of Physics and Astronomy
Central Washington University
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APS General Council to Consider Undergraduate Research Statement

In 2008, CUR's P&A Division developed and adopted a statement that encouraged all physics and astronomy departments "to provide, as an element of best practice, all undergraduate physics and astronomy majors a significant research experience." That same year, the Society of Physics Students adopted a similar statement and, over the next few years, statements that encouraged the involvement of undergraduates in research were put forward by the American Astronomical Society, American Association for Physics Teachers, and the American Physical Society's Committee on Education.

For the past several years, APS's Committee on Education has been working to bring to the APS General Council an undergraduate research statement that would be endorsed by the entire Society. At its November meeting, the APS Executive Board approved the posting of a statement on undergraduate research for member comment (see link below). In the January 2014 issue of APSNews, Paul Cottle, a Florida State University physicist and Chair of the APS Committee on Education, commented, "At the most basic level what we're saying is every undergraduate should have this kind of experience because it's really foundational. It's the way you learn how to get things done in a workplace or a real research environment."

After the APS Executive Board approves any statement, the Society's by-laws require that it be put before the membership and

that, after member comments have been received, the APS Panel on Public Affairs reviews the responses and considers revising the statement before a final version is put before the APS Council for a vote. Members of APS have until January 31, 2014 to comment.

CUR's P&A Division continues to strongly endorse the idea that all physics and astronomy majors should have a research experience. The Division has drafted the following statement in support of APS's proposed action:

"On behalf of the Council on Undergraduate Research and the Physics and Astronomy Division, we are writing to urge you to adopt the statement you have proposed in support of providing undergraduates with research experiences:

The American Physical Society calls upon the nation's colleges and universities and their physics and astronomy departments to provide all undergraduate physics and astronomy majors with access to significant research experiences.

The APS has long been a strong advocate for high quality physics education, which today must include a significant research experience. By adopting this statement, APS' voice will join several other American Institute of Physics affiliate member societies that have adopted similar statements. These include the American Association of Physics Teachers, Society of Physics Students, Council on Undergraduate Research, and American Astronomical Society, as well as your own APS-Committee on Education.

The context for the statement provided on your website, along with the statement's justification, are sound and well thought out. Therefore, we strongly urge the APS council to adopt this

statement making it APS' official position that a research experience is important to every physics and astronomy major's undergraduate education."

The CUR P&A endorsement will be sent to APS prior to the January 31, 2014 deadline. Comments on the proposed letter to APS by CUR P&A members are welcomed.

In addition to submitting the above endorsement, the P&A Division encourages members of CUR who are also APS members to individually comment on the APS statement at the link provided below. While we are hopeful of adoption by APS, the statement is likely to need all of the support we can provide. I think we all agree that it would be unfortunate if we missed this important opportunity.

www.aps.org/policy/statements/undergraduate.cfm?utm_source=APS+Physics+Main+Group&utm_campaign=4e10c4cd43-Undergrad_research_statement&utm_medium=email&utm_term=0_825303224b-4e10c4cd43-106574589

*John Mateja
Murray State University*

CUR P&A Member Service: Program Review

The CUR Physics and Astronomy Division offers consulting services to academic departments, divisions, and entire campuses. We provide these services by calling upon academic professionals who share our vision and goals, and who have thought deeply about undergraduate education in physics and astronomy. Our program reviewers are experienced faculty members from a broad range of institutions, and through a visit to your department will listen to your needs and provide you with a wealth of external resources to help you move your program forward. For example, they can evaluate your curriculum, program, department or division; assess or evaluate

your undergraduate research; and suggest strategies to transform or rejuvenate a department. Some of the benefits of a CUR Physics and Astronomy review include:

- Impartial third party credibility
- A review process that is cost-effective
- Structured review underwritten by CUR
- Sensitivity to issues relevant to predominantly undergraduate institutions
- Experienced reviewers whom you select to meet the needs of your institution and program, and
- Availability of interdisciplinary multi-departmental reviews

For a departmental review or other consulting services, please contact Mike Jackson (jacksonm@cwu.edu) and Sorin Oprisan (oprisans@cofc.edu).

*Gubbi Sudhakarn
Univ. WI La Crosse
and
David McGee
The College of New Jersey*

Vote in the Councilor Election!

Election of councilors for the CUR Physics and Astronomy Division is going on right now. Please remember to vote before the January 31, 2014 deadline. Eight councilors will be elected to serve a three year term.

If you are interested in running for a CUR P&A Councilor position in the future, or just want more information about what a Councilor position entails, please contact P&A Nominations Committee representative John Armstrong.

*John Armstrong
Weber State University
jcarmstrong@weber.edu*



2014 Posters on the Hill

Abstracts submitted to the *Posters on the Hill* event are currently under review. About 580 completed abstracts were submitted this year, with each abstract evaluated by three reviewers. Selections should be announced at the beginning of February. The event is tentatively scheduled for Tuesday, April 29th in the Cannon Caucus Room of the US Capitol, Washington DC.

Michael Jackson
Central Washington University
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NCUR 2014

The 2014 National Conference on Undergraduate Research (NCUR) will be held at the University of Kentucky in Lexington April 3-5, 2014. This is a major venue for undergraduate students to present their research and consists of a variety of invited talks as well as oral and poster presentations, visual arts displays, and performances. Registration is now open through March 7, although the deadline for early registration is February 7. For more information about NCUR, including links

for registration and a draft schedule, please go to www.cur.org/ncur_2014/.

2014 NCUR Travel Award

The CUR Physics and Astronomy division is pleased to offer a limited number of travel awards for students attending the National Conference on Undergraduate Research (NCUR) at the University of Kentucky, April 3-5, 2014. Applying for the travel award is easy!

When your abstract is accepted by NCUR, please send an email to Michael Jackson (jacksonm@cwu.edu) with the following information:

- Your name and contact information
- Your student's name and contact information
- Your NCUR acceptance letter

Awards will be made on a first-come, first-serve basis. Selected applicants will have their student registration fee paid by the CUR Physics and Astronomy Division. Please note:

- One P&A award will be made per department
- Awards are limited to physics and astronomy submissions. Separate physics and astronomy departments from the same campus will be considered as distinct, and are each eligible.
- Priority is given to students of CUR P&A members.
- CUR P&A councilors may apply, but will receive an award only if there are no remaining applications from the general P&A membership.

Thank you and please feel free to contact me if you have any questions or concerns.

Michael Jackson
Central Washington University
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CUR Conference 2014

CUR is hosting its 16th National Conference, "Creating the Citizens of Tomorrow: Undergraduate Research for All," at the Renaissance Washington Hotel in Washington, DC—a fitting location for its theme of democratizing undergraduate research! In situating the conference in our nation's capital, CUR will highlight cross-disciplinary connections and collaborations among higher education, government agencies, and non-profit organizations.

Conference sessions will fall under the following seven themes:

- Undergraduate research for the public good
- Undergraduate research for all! Ensuring access to high quality opportunities
- Undergraduate research for high-impact learning: Scaling up and scaffolding
- Undergraduate research for transformation: Assessing the impact
- Undergraduate research for mentors: Support and sustenance
- Funding for undergraduate research: Finding and leveraging resources
- Undergraduate research for the future: Exploring new directions

Registration is now open. For more information, please visit the conference website at:

www.cur.org/conferences_and_events/cur_conference_2014/.

Kudos To:

(We are always looking for contributions to the Kudos section from all P&A Division members. If you have exciting news about yourself and/or your undergraduate research students, please let CURPA News editor Nadine Barlow know so we can include it in the next newsletter.)

Students ***Sumaya Ifland, Mark McKnight, and Patrick Penoyar***, together with mentor ***Michael Jackson*** (Central WA Univ.), have published "New far-infrared laser emissions from optically pumped $^{13}\text{CHD}_2\text{OH}$ " in *IEEE Journal of Quantum Electronics*, 50, 23-24 (2014).

Students ***Mark McKnight, Patrick Penoyar, Matthew Pruett, Nathan Palmquist, and Sumaya Ifland***, with mentor ***Michael Jackson*** (Central WA Univ.), have published "New far-infrared laser emissions from optically pumped CH_2DOH , CHD_2OH , and $\text{CH}_3^{18}\text{OH}$ " in *IEEE Journal of Quantum Electronics*, 50, 42-46 (2014).

Nicholas Kutsop (Northern AZ Univ.) received the University's prestigious Gold Axe Award for excellence in scholarship and leadership. Kutsop named his mentor, ***Nadine Barlow***, as the faculty member who had the most influence on his undergraduate career.



NAU Physics and Astronomy major Nicholas Kutsop (2nd from left) was recognized during the Fall 2013 Gold Axe Awards reception. Mentor Nadine Barlow is 2nd from right.

Opportunities

Visiting Positions in Physics, College of Wooster: The Department of Physics at the

College of Wooster invites applications for two separate one-year visiting positions beginning Fall 2014 to teach upper and lower level physics courses and labs. Applicants should have a strong commitment to undergraduate education; the ability to involve undergraduate students in research is particularly desired. PhD in Physics or related field is preferred.

Applicants should send a single pdf with letter of application, curriculum vitae, and statement of teaching philosophy and arrange for three letters of recommendation to be sent to physics@wooster.edu. Review of applications will begin January 20, 2014, and continue until the positions are filled. Information on the department and College can be found at: physics.wooster.edu.

The College of Wooster is an independent college of the liberal arts and sciences with a commitment to excellence in undergraduate education. The College values diversity, strives to attract qualified women and minority candidates, and encourages individuals belonging to these groups to apply. Wooster seeks to ensure diversity by its policy of employing persons without regard to age, sex, color, race, creed, religion, national origin, disability, veteran status, sexual orientation, gender identity and expression, or political affiliation. The College of Wooster is an Equal Opportunity/Affirmative Action Employer. Employment is subject to federal laws requiring verification of identity and legal right to work in the United States as required by the Immigration Reform and Control Act. Drug-free workplace.

Your CURPA Councilors

John Armstrong, Weber State University. CUR Nominations Committee.

Nadine Barlow, Northern Arizona University. CURPA News Editor and CUR Fellows Committee.

Maria Bautista, Kapi`olani Community College.
Mark Biermann, Wartburg College.

Horace Crogman, University of California Merced. CUR Finance Committee.

Beth Cunningham, AAPT.

Chris Hughes, James Madison University.

Michael Jackson, Central Washington University. CURPA Chair and CUR Posters on the Hill Review Committee.

Liubov Kreminska, University of Nebraska at Kearney.

John Mateja, Murray State University. NCUR Oversight Committee and CUR Executive Board.

Duncan McBride, National Science Foundation. CUR Treasurer, CUR Finance Committee and CUR Investments Committee.

David McGee, The College of New Jersey.

Sorinel Oprisan, College of Charleston. CUR Quarterly Editors Board.

Mohammad Samiullah, Truman State University.

Allyn Smith, Austin Peay State University. CUR Posters on the Hill Review Committee.

Gubbi Sudhakaran, University of Wisconsin La Crosse.

CURPA News Deadline

CURPA News comes out three times per year and we welcome your contributions! Please send your submissions, comments, achievements, opportunities, etc. to editor Nadine Barlow at Nadine.Barlow@nau.edu. Deadline for the Spring 2014 issue is ***April 1, 2014***.