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New for 2016

2nd year CUR booth at JMM. Join us to discuss Undergraduate Research at our booth in the exhibit hall at the [Joint Mathematics Meetings](#) in Atlanta, January 4-7, 2017.

Special Session on UR research at JMM 2017 sponsored by the MAA SIGMAA on UR. Please consider attending this session or submitting an abstract for a talk. For more information on the recently founded Special Interest Group on Undergraduate Research, view the [SIGMAA website](#).

UNCG goes national! This conference includes a panel about Undergraduate Research and a faculty mentoring workshop.

Our Math-CS Division Chair's Annual Message can be found on our [Math-CS Division website](#).

Faculty Mentoring Awards

Early in 2016, CUR Math/CS division sent out calls for faculty mentoring awards to honor faculty for their success in mentoring undergraduate students in research. We have received 24 excellent applications: 9 for Early Career (0-7 years past their PhD), 10 for Mid-Career (7-15 years past their PhD) and 5 for Advanced Career (15+ years past their PhD) categories. Each of the applicants would deserve to win an award. At the end, the committee selected the following winners:

- **Advanced Career: Patricia Morreale**, Professor of Computer Science at Kean University.
- **Mid-Career: Anthony Tongen**, Professor in the Department of Mathematics and Statistics at James Madison University.
- **Early Career: Alex Capaldi**, Assistant Professor in the Department of Mathematics and statistics at Valparaiso University.

See their short bios below highlighting their successes and accomplishments.

Advance Career: Patricia Morreale is a Professor of Computer Science at Kean University, Union, NJ. At Kean University, she established the Multimedia and Network Laboratory, and directs research on network performance and design, focusing on wireless and sensor networks, particularly human computer interaction (HCI) in support of accessible and secure mobile system design. Previously, she was with Stevens Institute of Technology. She has mentored over 100 undergraduates, leading to 40 peer-reviewed publications and more than 50 peer-reviewed presentations at both national and international conferences. Two undergraduate researchers she mentored have been selected for NSF Graduate Research Fellowships in the past three years; another undergraduate received a Google scholarship award. Three of her students have been selected to receive Kean's annual Undergraduate Research Award, and Dr. Morreale was recognized with Kean's Faculty Mentoring Award in 2013.

Dr. Morreale uses the Triesman model, originally from mathematics, with the collaborative learning approach extended to computer science, as well as the Affinity Research Group (ARG) model, encouraging persistence in scholarship, for her undergraduate research mentoring activities. Dr. Morreale's research and outreach has been funded by the National Science Foundation (NSF), U.S. Navy, U.S. Air Force, AT&T, Google, and Verizon Wireless. The Computing Research Association (CRA) selected a team of her undergraduate researchers for funding. She is an elected Councilor in the Math and Computer Science Division of CUR and serves as co-chair of NCWIT's Academic Alliance. Dr. Morreale holds a B.S. from Northwestern University, a M.S. from the University of Missouri, and a Ph.D. from Illinois Institute of Technology, all in Computer Science. She holds a patent in the design of real-time database systems, which was successfully commercialized.



Mid-Career: **Anthony Tongen** is a Professor in the Department of Mathematics and Statistics at James Madison University (JMU), where he has been teaching since 2005. He obtained his PhD in Applied Mathematics from Northwestern University in 2002 and his current research interests include mathematical modeling, dynamical systems, game theory, numerical analysis, and mathematical biology. In the past 10 years at James Madison University, he has mentored over 67 students in funded undergraduate research. Included in that number are 27 students belonging to groups traditionally underrepresented in mathematics (African American, Latino, or Asian Pacific Islander) who participated in a program he founded called M3: Mentoring for Minorities in Mathematics.

He has received 10 grants to support undergraduate research totaling more than \$1.2 million, including a recently funded NSF REU grant. Anthony was a 2005 Project NEXt Fellow (Sterling) and he is currently an Assistant Director of Project NEXt. Because his passion for undergraduate research has also impacted his teaching, he published a book with the Mathematical Association of America (MAA) called Keeping it R.E.A.L.: Research Experiences for All Learners, which provides projects to be used in computational mathematics courses that motivate undergraduate research projects. The foundation of his undergraduate research program is the belief that physical demonstrations, experiments, and data can be powerful tools to inform mathematical reasoning. Students experience mathematics by formulating conjectures and subsequently proving, modeling, and/or analyzing them. As a Fulbright Scholar to Mexico during the 2012-2013 academic year, Anthony similarly helped students to see mathematics as an act of discovery rather than memorization of facts. In Virginia, Anthony enjoys spending time with his wife and kids on p-acres in addition to sharpening his mentoring skills in his church.



Early Career: **Alex Capaldi** is an assistant professor of mathematics and statistics at Valparaiso University. Between his time in graduate school at North Carolina State University and his time on the Valparaiso faculty, Dr. Capaldi has mentored 32 undergraduate students on various projects, often at the intersection of mathematics and biology.



Four of his team's projects have been published in refereed journals. His students have presented at 10 regional and national conferences, and his most recent project earned honorable mention for the 2016 Posters on the Hill event. Dr. Capaldi is also co-PI for Valparaiso's most recent National Science Foundation grant to support the summer Valparaiso Experience in Research by Undergraduate Mathematicians program which selects students for a first mathematics research experience from a national pool. He has proudly mentored many students from underrepresented groups in STEM. Of his mentoring style, one of his former students wrote "At first I was upset that he knew the answer and never just gave it to me, but now I realize that I learned so much from working my way through the problem. This taught me how to push through frustration and confusion during the research process, an ability vital to becoming a mathematician." In his nomination, a senior colleague wrote "I believe Dr. Capaldi is one of the few young faculty who has the potential, talent, skills and will to become a future leader of mathematics undergraduate research at the national level."

Nominations for the 2017 awards are due March 31st. Please see the [division website](#) or contact [Jan Rychtář](#) for more information.

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Upcoming Events and Deadlines of Interest to Faculty

1. **CUR-Goldwater Scholar Faculty Mentor Award**, initial nomination by President or Provost due November 7, 2016. Nominees must have mentored at least three Goldwater Scholars during his/her career.
2. **University of North Carolina at Greensboro Regional Mathematics and Statistics Conference**, November 11-12, 2016.
3. Election for **CUR Councilor** positions, nominations due November 14th, 2016.
4. **CUR Fellow award** nominations are usually due in December. CUR Fellows are leaders and role models for a broad range of faculty and students. Joseph Gallian became a CUR Fellow in 2002, and is the only CUR fellow from our division.
5. **CUR Quarterly submissions** of a short prospectus submissions (300-500 words) describing the focus of a proposed article or vignette. The winter deadline will be in early January.
6. **CUR Dialogues** allow faculty and administrators to interact with federal agency program officers in Washington, DC, February 16-18, 2017. Registration deadlines is February 1, 2017.
7. **Preparation for Industrial Careers in Mathematical Sciences** (PICMath), March 2017.
8. **CUR Division Mentoring Awards Nominations**, due March 31, 2017.
9. The **CUR institutes** are multi-day meetings on a college campus to discuss an issue related to undergraduate research and faculty development. Deadlines vary.
10. **CUR Annual Business Meeting** for elected councilors. Northern Arizona University in Flagstaff, AZ, June 29 - July 1, 2017.

MathFest CUR Student Award



Shriya Nagpal. Through the national mathematics honor society Pi Mu Epsilon, the Division sponsors an undergraduate student award for “Best Presentation on Original Research” at the Mathematical Association of America’s national MathFest conference. This year, the recipient was Shriya Nagpal, a mathematics major at Trinity College (CT). The award was presented by CUR councilor Dr. Chad Awtrey during the Pi Mu Epsilon banquet on August 5, 2016. Shriya’s presentation, “On the domination number of generalized hierarchical products,” was based on work she did this past summer at Trinity with Professor Dr. Kirsti Wash. After graduating in the fall of 2016, Shriya hopes to pursue a doctoral degree in pure mathematics.

12th Annual UNGC Regional Mathematics and Statistics Conference on the national state

The Department of Mathematics and Statistics at The University of North Carolina at Greensboro will host the 12th Annual UNGC Regional Mathematics and Statistics Conference on Friday and Saturday, November 11-12, 2016. The conference is organized by three CUR councilors - Jan Rychtář (UNCG), Chad Awtrey (Elon University), Dewey Taylor (VCU) - and Hyunju Oh.

Dr. Dominic Klyve, Central Washington University, will deliver a plenary talk "Mathematical Fights! The seedy underbelly of mathematical history".

As a new addition, this conference will also feature faculty development workshop focused on training faculty in mentoring undergraduate researchers led by Dr. Michael Dorff (Brigham Young University) and Dr. Kathryn Leonard (California State University-Channel Islands).

The conference will also have panels on Careers in mathematics, Preparation for graduate school, and Benefits of undergraduate research.

The deadline for registration and abstract submission is October 21, 2016.

Funding for this conference is provided by the NSF (DMS - 1332369, 1632179), UNCG Office of the Provost, the College of Arts and Sciences, UNCG Office of the Research and Economic Development, the Department of Mathematics and Statistics, UNCG and Elon University’s Chapter of Pi Mu Epsilon.

For more information about the conference please visit the conference [website](#) or email rychtar@uncg.edu.

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Invite CUR to conduct your next Department Review

The Council on Undergraduate Research (CUR) Program Review Committee offers review services to academic departments, divisions, and colleges. The Mathematics and Computer Science Division of CUR has a pool of qualified reviewers who have experience visiting academic institutions where they listen to you and provide the help you need. If your department is looking to assess or increase its undergraduate research offerings, then you are especially encouraged to begin discussions with our CUR councilors via this review process. Please visit the [CUR Program Review website](#) for details.

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CUR Resources

What can CUR do for you?

1. [CUR Department / Program Reviews](#)
2. [CUR publications about Undergraduate Research](#)
3. [CUR resources on the benefits of Undergraduate Research](#)

What has CUR done for you, and is still doing for you?

1. Addressing future trends in UR: assessment, UR in curriculum, big collaborations in UR, etc.
2. Access to CUR programs: POH, NCUR, Institutes, Biennial conference, etc.
3. Networking with and learning about effective practices used in other disciplines
4. Access to CUR publications that address issues not addressed by the MAA (e.g., Accessing the effectiveness of UR)
5. Advocacy for UR: NSF REUs resulted from CUR advocacy, the Goldwater/CUR award, the founding of the MAA SIGMAA on UR, etc.
6. Help in instituting activities that promote UR at your college or university (e.g., teaching credit for faculty who are doing UR, UR being valued in Promotion and Tenure, etc.). Organizations like CUR that has members from multiple disciplines and administrators are more effective than disciplinary organizations.

To learn more, see our [top 2³ + 2 reasons to join CUR](#).



Posters on the Hill

The Council on Undergraduate Research hosted the 20th annual Poster on the Hill (POH) on April 19-20, 2016 in the Rayburn Building, Washington, DC. This program was designed to give members of U.S. Congress an opportunity to interact with student researchers about their research. This enables members of Congress to see the effect of funding undergraduate research in the lives of students.

This year, 60 posters were selected from hundreds of applications. The students selected to represent the Mathematics and Computer Science Division were:

Yulia Rossikova and Brian Vega, Kean University, (Advisor: Dr. Juan Jenny Li), "RN-chatter - A Swift Way to Understanding"



Guillermo Ortiz, Bridgewater State University, (Advisor: Dr. Guillermo Ortiz), "Modeling the Consequences of Reduced Vaccination Coverage on the Spread of Measles"

Brandon Barker, Boise State University, (Advisor: Dr. Liljana Babinkostova), "Techniques to Enhance the Security of an Authentication Protocol"

Congratulations to the above students and their advisors. As one might expect, reviewers were impressed by the overall quality of the applications and the research being conducted by undergraduates. The Posters on the Hill event is held annually, typically during the month of April. If you are mentoring undergraduate students this summer or know someone who is, please keep this program in mind and encourage your undergraduate students to apply. More information about this program can be found [here](#).

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CUR Councilor Elections

CUR is governed by a body of councilors, who collaborate at the forefront of national policy on Undergraduate Research. We are especially interested in increasing our division's diversity. If you are interested, ask your administration for a guarantee of support to attend our annual business meetings, and sometimes stay a few extra days for our biennial conferences. Each business meeting lasts 3 days and registration costs about \$150. On conference years this is extended by 3 days, with recent registration costs of about \$600. All registration costs include meals. To run for election, look into the [CUR website](#) in early November.

Upcoming Events and Deadlines of Interest to Students

1. [Posters on the Hill](#) in Washington DC, usually in April. Submissions Accepted from September 7th to November 2nd, 2016.
2. [University of North Carolina at Greensboro Regional Mathematics and Statistics Conference](#), November 11-12, 2016. This student focused conference features contributed research talks by undergraduate and graduate students, and includes panels about careers in mathematics and preparation for graduate school, as well as a plenary talk by our CUR division chair Dominic Klyve.
3. [Joint Mathematics Meetings Undergraduate Poster Session](#) on Friday January 6th, 2017 in Seattle, WA.
4. Research Experiences for Undergraduates (REUs) in [Mathematics](#) and [Computer Science](#). Deadlines range from December to April.
5. [National Conference on Undergraduate Research \(NCUR\)](#) at the University of Memphis, April 6-8, 2017. Abstracts due December 2, 2016.
6. [MathFest](#) in Chicago, IL, July 26-29, 2017. Deadline for student submissions is usually in early June.

See the [Division of Mathematics and Computer Science webpage](#) for links to each of the above.

Contact Information:

Division BLOG website: <http://www.mathcsCUR.org>

Division website on cur.org: http://www.cur.org/governance/divisions/mathematics_and_computer_sciences

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