CUR Workshop Program on Institutionalizing Undergraduate Research Summit for State Systems and Consortia

The Westin Alexandria
Alexandria, VA
March 28-30, 2014
The Council on Undergraduate Research (CUR) would like to thank the National Science Foundation for its generous support and advocacy of Undergraduate Research.

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Welcome from the CUR President

It is my pleasure to welcome you to the CUR Summit for State Systems/Consortia. You have been part of one of the most important projects that CUR has initiated. We have long known that undergraduate research is an educational opportunity that has profound effects on students, their intellectual growth, and their ability to think about and address complex problems. You have helped us better understand how to deepen the experience and offer this opportunity to more students at your institutions.

When I read the work of undergraduate researchers or if I am at a poster session, their work seems so straightforward as it fits into a clear and coherent piece. However as any student and mentor knows, nothing is so easy. The final product represents a question that called to be answered by someone. The work involved many hours of library work, hours of discussion, frustration in labs or archives, unexpected dead ends or false leads, which eventually lead to clarity and vision. Although the completion of the research is important, it is the process of students learning to research and think independently that is equally (if not more) valuable in the long run. The impact undergraduate research has on students is profound and the mentoring relationship between faculty and students is one of the most important experiences for students as they prepare for their lives ahead in the professional world and graduate school.

Our summit is possible because of the work of many people over the years. Long before this NSF grant was written, the CUR institutes, and other grants supporting the expansion of undergraduate research developed much of the framework we have used in these workshops. In particular, we are all deeply grateful for the work of Mitch Malachowski, Jeff Osborn, Kerry Karukstis, Nancy Hensel and Beth Ambos for their work as the principal investigators and the force behind the project. We are also indebted to Shontay Kinkaid for assuring that all our arrangements are comfortable and well executed. Finally, I am grateful to all of you for engaging your institutions and investing your time in this project. The effects will be long lasting and profound as undergraduate research becomes a more fundamental experience for more students over time.

Sincerely,

Julio C. Rivera
President, Council on Undergraduate Research
Provost and Professor of Geography, Carthage College
Welcome from the Project Leadership Team

Dear Summit Participants:

As the Principal Investigators of the National Science Foundation-funded program that has focused on institutionalizing undergraduate research across state systems and consortia, it is our honor and pleasure to welcome you to this Research Summit. We are here to celebrate all that you have accomplished over the past three years and to probe and share what will become your future successes. As you know, when done well, undergraduate research is a transformative practice for students, faculty, and entire institutions, and this project has focused on finding ways to strategically foster these transformations on your campuses.

This project was initiated in 2010 and received unprecedented interest from both public and private institutional coalitions, as evidenced by the fact that 24 systems/consortia competitively applied for support, with only six of you receiving awards. The selected systems/consortia include: The California State University System (CSU), University of Wisconsin System (UW), Council of Public Liberal Arts Colleges (COPLAC), City University of New York System (CUNY), Great Lakes Colleges Association (GLCA), and Pennsylvania State System of Higher Education (PASSHE).

The schedule for the Summit meeting includes plenary presentations that provide contextual background about organizational and culture change, the National Science Foundation’s perspective, trends in federal funding, and an evaluation summary of our project. The Summit schedule also includes a series of facilitated, interactive discussion and breakout sessions focused on the key topical areas identified in your plans and previous activities. The discussion and breakout sessions are designed to include session blocks for both robust cross-system/consortium and intra-system/consortium dialogue.

Ultimately, our goals for the Summit meeting are that it will: (a) provide extensive networking and exchanges of information between and among all six systems/consortia and your member-campuses, (b) help contextualize and validate what we have learned about organizational and culture change within your systems/consortia, (c) help identify ways that we can continue to assist your systems/consortia in sustaining the institutionalization of undergraduate research, and (d) help in identifying key project outcomes for further national dissemination.

Get ready to be energized and inspired as you engage with your colleagues from across the country at this Summit. We know you will return to your home institution with many new and updated perspectives and promising practices. CUR stands ready to help with a wide range of CUR programs and services that are available throughout the year and we look forward to our future interactions. Thank you for joining us in advancing undergraduate research as a transformative practice.

Sincerely,

The Institutionalizing Undergraduate Research Project Team,

Elizabeth Ambos
Kerry Karukstis
Shontay Kincaid
Mitch Malachowski
Jeffrey Osborn
## Program At A Glance

### Friday - March 28, 2014

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>1:00-3:30 pm</td>
<td>Registration</td>
</tr>
<tr>
<td>3:30-4:00 pm</td>
<td>Welcoming Remarks - Edison D</td>
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<tr>
<td>4:15-5:30 pm</td>
<td><strong>Plenary I:</strong> <em>Characteristics and Cultural Aspects of the Systems and Consortia</em> - Charles Blaich and Kathleen Wise, Center of Inquiry in the Liberal Arts at Wabash College &amp; Rebecca Martin, National Association of System Heads</td>
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<tr>
<td>5:30-7:30 pm</td>
<td>Poster Reception (All Posters to be set up by 3:00 pm) - Salon A-C</td>
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<tr>
<td>7:30-9:00 pm</td>
<td>Dinner</td>
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### Saturday - March 29, 2014

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<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>8:00 am</td>
<td>Continental Breakfast/Disciplinary Discussions - Edison D</td>
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<td>8:45-9:30 am</td>
<td><strong>Plenary II: An NSF Perspective</strong> - Myles Boylan, National Science Foundation</td>
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<tr>
<td>9:30-10:30 am</td>
<td>System/Consortium Presentations and Panel Discussion</td>
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<td>10:30-10:45 am</td>
<td>Coffee Break</td>
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<tr>
<td>10:45-12:00 pm</td>
<td>System/Consortium Facilitated Working Groups - see page 9 for locations</td>
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<tr>
<td>12:00-1:30 pm</td>
<td>Lunch (with focused conversations)</td>
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<td></td>
<td><strong>Faculty Administrator Networking Sessions 12:20-1:20pm</strong></td>
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<td></td>
<td>see pages 5-7 for detailed session descriptions and locations</td>
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<tr>
<td>1:40-2:40 pm</td>
<td><strong>Concurrent sessions on Cross-cutting Issues:</strong></td>
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<td><em>Workload, Faculty Evaluation, and Faculty Rewards</em></td>
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<td>Session A- Banneker</td>
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<td>Session B- Bell</td>
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<td><em>Integrating Research into the Curriculum</em></td>
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<td>Session A- Salon B</td>
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<td>Session B- Salon F</td>
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<tr>
<td>2:45-3:30 pm</td>
<td><strong>Plenary III: Major Trends in Federal Agency Funding</strong> - Rich Dunfee, American Association of State Colleges and Universities, Grants Resource Center - Edison D</td>
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<td>Feedback on the Concurrent Sessions/Common Issues</td>
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<td>8:00 am</td>
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<td><strong>Plenary IV: Evaluation of Project Outcomes, Daniel Weiler</strong></td>
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<td>9:15-10:45 am</td>
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<td>10:45-11:45 am</td>
<td>Panel Discussion: System/Consortium Leaders and Next Steps</td>
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<td>11:45-12:00 pm</td>
<td>Closing Remarks</td>
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Meeting Program

Friday- March 28, 2014

Welcoming Remarks - Edison Ballroom
3:30-4:00 pm

Julio Rivera
President, Council on Undergraduate Research
Mitch Malachowski, Jeff Osborn, Kerry Karukstis, Beth Ambos
Principal Investigators

Plenary I - Edison Ballroom
4:15-5:30 pm

Characteristics and Cultural Aspects of the Systems and Consortia
Charles Blaich and Kathleen Wise, Center of Inquiry in the Liberal Arts at Wabash College
Rebecca Martin, National Association of System Heads

Poster Reception - Salon A-C
5:30-7:30 pm

Dinner - Edison Ballroom
7:30-9:00 pm

Saturday- March 29, 2014

Continental Breakfast/Disciplinary Discussions - Edison Ballroom
8:00-8:30 am

Plenary II - Edison Ballroom
8:45-9:30 am

Introduction of Plenary Speaker - Mitch Malachowski

A National Science Foundation Perspective
Myles Boylan, Division of Undergraduate Education, National Science Foundation

System/Consortium Presentations and Panel Discussion - Edison Ballroom
9:30-10:30 am

Jeffrey Osborn (Moderator)
William Spellman, COPLAC
Ken O'Donnell, CSU
Avrom Caplan, CUNY
Kristine Andrews, UWS
Simon Gray, GLCA
Jim Moran, PASSHE

Coffee Break- Pre Function Area
10:30-10:45 am
System/Consortium Facilitated Working Group- see page 9 for locations
10:45-12:00 pm

Lunch – Edison Ballroom
12:00-1:30 pm

Faculty Administrator Networking Sessions
12:20-1:20 pm

**Infrastructure, Organizational, and Cultural Change: Three system perspectives on what it takes to advance and sustain undergraduate research**- William Head (CSU), John Hranitz (PASSHE) and Shakila Merchant (CUNY) - Wright

Bringing together three system perspectives, this session will address infrastructure support models such as centralized offices of undergraduate research, department and summer programs, research collaborations, and curricular enhancements. We will also look at how systems/consortia support undergraduate research through infrastructure improvements, policy revisions, research and student initiatives, and cultural change. Working in small groups, participants will identify institutional weaknesses and develop strategies for addressing those gaps at the campus, system/consortium, and national level.

**How to Fish:** Rosalie Richards, Georgia College State University - Bell

Do you imagine cross-disciplinary faculty members engaged in year-long professional development around key issues in UR? Do you envision faculty members eager to develop UR action plans for their own departments? Our goal for this interactive presentation is that you, as a participant, will leave this session with a tackle box of strategies for baiting, hooking, and reeling in faculty ambassadors who will lead the charge for advancing UR at your institution. Using CUR’s best practice models and other professional development approaches for enabling community-building and organizational change, we have achieved notable gains in UR by facilitating leadership, planning and action by faculty teams from business, humanities, social sciences, and STEM departments at Georgia College. After a brief fishing lesson, you will share strategies and create next steps for reeling in faculty leaders who will spawn department-wide buy-in, ownership, and sustainability of UR at your own institution.

**Development of a Summer Research Community** - Lee Coates, Allegheny College - Salon A

This interactive session will highlight initiatives that have been instituted at Allegheny College to increase the students’ summer research experience and the sense of a summer research community. In the past, faculty and students working during the summer rarely interacted with other research groups across the campus. As we expanded summer research opportunities to include faculty and students in the arts and humanities, it became clear that we needed to develop ways to increase interactions among the various research groups and administrative offices. In 2008, with support from the Provost, we developed the Allegheny College Research Seminar Series (ACRoSS), which is a weekly interdisciplinary forum for the presentation of summer research projects. The series runs from mid-June to mid-August. At each weekly meeting, students present short overviews of their specific summer research projects (e.g., proposed experiments, data, anticipated results) to an audience of students, faculty, and administrators. We leave plenty of time for discussion of the research projects. During the summer of 2013, we had 58 students from 16 departments and programs (Art, Biochemistry, Biology, Chemistry, Communication Arts, Economics, English, Environmental Science, History, International Studies, Mathematics, Neuroscience, Philosophy and Religious Studies, Physics, Political Science, and Psychology) present their summer research projects to an audience that averaged 120 participants each week. During this interactive session I’ll talk about the implementation, logistics, and benefits of ACRoSS, as well as other summer programming initiatives (e.g. poster session, research ethics discussions, oral presentation workshops). I’ll also leave enough time so the audience can share and discuss other “best practices” that have been developed at their institutions to enhance the summer research experience and sense of community.
Changing the Culture: The Benefits of a Broad Definition of Undergraduate Research - Gretchen Sichert, Mansfield Team - Salon F

Mansfield University of Pennsylvania is a small (3000-student) public institution offering a wide array of programs, including professional majors, that reflect its liberal arts mission. Rather than view the need for an increased emphasis on undergraduate research primarily through the lens of STEM, we have spent the last two years broadening the base of UR beyond the small number of departments that were already doing it well (e.g. Psychology, Biology, Communication) and pushing all departments to define for students and incorporate into their curricula the research methods that already exist in their fields of study. We will present some successful results of the ongoing effort to change the undergraduate research culture at Mansfield as a whole, including the refocused campus-wide Showcase of Student Scholarship, incorporation of student research into the First Year Experience program, and refocused Faculty Research Forum. We will also share our frustrations, areas targeted for further improvements, and long term goals for the future.

Developing research-rich lower division courses across the curriculum - Kathryn Leonard, CSU-Channel Islands - Salon E

Embedding research into lower division classes expands access and retention for students from underrepresented groups, increases student engagement and learning, and prepares students for more advanced upper division research experiences. Moreover, it shows students that research is a cultural value of the institution from their earliest days on campus. Challenges to successful, long-term implementation of lower division research-rich course redevelopment include large class sizes, heavy reliance on adjunct instructors, rotating instructor assignments, and student resistance to a new type of learning. In this active session, participants will share successful practices in implementing a research-rich lower division curriculum, and brainstorm ideas for overcoming various challenges.

Streamlining Grant Submission Processes with Google Docs and other Technologies - Bob Hoar, UW, LaCrosse - Salon G

The Office of Undergraduate Research & Creativity at UW-La Crosse began using Google Docs Fall of 2012 to manage a competitive grant process for undergraduate students. The goal in using Google Docs was to create a more streamlined process for students, faculty mentors, our office and the grant review committee. Grant submission forms (a cover sheet and narrative), ballots for committee members and master control sheets are amongst a few of the forms created. Since we have been using Google Docs we have had nearly 200 student grants come through the system. This presentation will describe the process used to create the Google doc templates, distribution to students, and review of submissions and final reports generated. This process could also be executed similarly in D2L, Blackboard, etc. Examples of the Google Doc and more information on the grant process can be viewed at http://www.uwlax.edu/urc/Funding/URCC_grants.htm

Culture change starts with self-study: Getting to know ourselves and our needs - Summer Arrigo-Nelson and Stanley A Komacek, California University of PA Team - Whitney

As a mid-sized, regional state university initiating a campus-wide undergraduate research program, we found there were an unlimited number of tasks in front of us. When the university established the President’s Task Force on Undergraduate Research, our first action was to conduct a self-study to determine the current status of undergraduate research activities at the university, identify existing areas of strength, and places where improvements could be made. We developed two surveys; the first was distributed to department chairpersons (11 questions, 71% response rate) to classify existing department-level activities and opportunities in undergraduate research. The second was distributed to all faculty members (51 questions, 30% response rate) to examine individual activities and solicit comments and opinions on how best to: 1) maximize opportunities for faculty members and undergraduate students to engage in research, 2) make students more active participants in their own education, and 3) develop the university’s infrastructure and policies to support and expand undergraduate research. In this session, we look forward to walking session participants through our survey design, the results we received, and the action steps we are taking to institutionalize undergraduate research based on our findings. We will then open up the floor to answer any questions on our approach and encourage
participants to share the steps that their institutions are taking to identify and build on their own institutional strengths to create campus-wide research programs.

**Impact of the CUR Systems/Consortia Initiative on Building Campus Infrastructure** - Suzanne C. Griffith, Jonathan H Gutow, Lissa Schneider-Rebozo and Lisa Theo - Banneker

The University of Wisconsin System’s NSF-funded CUR workshops on Institutionalizing Undergraduate Research in Systems and Consortia occurred in September 2011 and February 2013. Representatives from the institutions and the system administration continue to meet to work on establishing a sustainable structure to support inter-campus collaboration and support. Since this process started, four of the comprehensive UW institutions have also begun changes in infrastructure to support URSCA on their campuses.


The University of Wisconsin System consists of 13 four-year and 13 two-year campuses. Undergraduate research has been emphasized across these campuses, at varying levels, for decades, and in 1999 a UW-System Symposium for Undergraduate Research and Creative Activity was established. For many years the campus research administrators’ group provided a basic inter-campus communication network, however, as undergraduate research (URSCA) activity grew there were limited opportunities for faculty and administrative representatives from each campus who were directly involved in URSCA to meet regularly and discuss system-wide initiatives to promote and sustain undergraduate research. As a result of the CUR workshops and other UW-System-funded follow-up meetings, we created the Wisconsin System Council on Undergraduate Research (WiSCUR). The WiSCUR panel, which will include members of several different campuses and System Administration, will describe the process of developing WiSCUR and its mission and goals. The initiatives begun by WiSCUR and benefits to the different campuses will be discussed. WiSCUR, as an organization, is still evolving, and panel members would like to learn from attendees, who will be invited to share their experiences in building a sustainable network of URSCA supporters among different campuses.

**Concurrent sessions on Cross-cutting Issues:**

1:40-2:40pm

*Workload, Faculty Evaluation, and Faculty Rewards*

- Session A- Banneker
- Session B- Bell

*Integrating Research into the Curriculum*

- Session A- Salon B
- Session B- Salon F

**Plenary III** - Edison Ballroom

2:45-3:30pm

Introduction of Plenary Speaker - Elizabeth Ambos

*Major Trends in Federal Agency Funding*

- Rich Dunfee, Executive Director
  American Association of State Colleges and Universities, Grants Resource Center

**Coffee Break** - Pre Function Area

3:30-3:45 pm
Concurrent Sessions on Cross-cutting Issues:
3:45-4:45pm

Campus Leadership Development
Session A - Banneker
Session B - Bell

Measuring the Impacts on Our Campuses
Session A - Salon B
Session B - Salon F

System/Consortium Facilitated Group Sessions
5:00-6:00pm

Feedback on the Concurrent Sessions/Common Discussion of Issues
Discussion of Leadership Development/Culture Change

Dinner - Edison Ballroom
6:00-7:30 pm

Sunday - March 30, 2014

Continental Breakfast/Disciplinary Discussions - Edison Ballroom
8:00-8:30 am

Plenary IV - Edison Ballroom
8:30-9:15 am

Introduction of Plenary Speaker - Mitch Malachowski

Evaluation of Project Outcomes
Daniel Weiler
External Project Evaluator, Daniel Weiler Associates

Systems/Consortia Facilitated Working Groups - see page 9 for locations
9:15-10:45 am

Panel Discussion with System/Consortium Leaders Next Steps, Q &A - Edison Ballroom
10:45-11:45 am

Kerry Karukstis (Moderator)
William Spellman, COPLAC
Ken O’Donnell, CSU
Avrom Caplan, CUNY
Kristine Andrews, UWS
Simon Gray, GLCA
Jim Moran, PASSHE

Closing Remarks
11:45-12:00 pm

Networking Lunch
12:00-1:00 pm
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<tr>
<th>System/Consortium</th>
<th>Facilitators</th>
<th>Meeting Room</th>
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<tr>
<td>Council of Public Liberal Arts Colleges</td>
<td>Carol Bender, Melvin Druelinger</td>
<td>Salon G</td>
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<td>(COPLAC)</td>
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<td>California State System</td>
<td>Jeffery Demarest, Jenny Shanahan</td>
<td>Salon E</td>
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<td>(CSU)</td>
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<td>City University of New York</td>
<td>John Barthell, Jodi Wesemann, Michael Palladino</td>
<td>Whitney</td>
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<td>(CUNY)</td>
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<td>Great Lakes Colleges Association</td>
<td>Michael Nelson, Katherine Whatley</td>
<td>Salon C</td>
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<td>Pennsylvania State System of Higher Education</td>
<td>Bert Holmes, Susan Larson</td>
<td>Salon A</td>
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<td>University of Wisconsin System</td>
<td>Beth Cunningham, Julio Rivera</td>
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<td>(UWS)</td>
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### Summit Organizers/Coordinators

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<tr>
<th>Name</th>
<th>Position/institution</th>
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<tbody>
<tr>
<td>Elizabeth Ambos</td>
<td>Co-Principal Investigator, Executive Officer, CUR National Office (<a href="mailto:Curambo@cur.org">Curambo@cur.org</a>)</td>
</tr>
<tr>
<td>Kerry K. Karukstis</td>
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<td>Jeffrey Osborn</td>
<td>Co-Principal Investigator, Dean, School of Science, The College of New Jersey (<a href="mailto:josborn@tcnj.edu">josborn@tcnj.edu</a>)</td>
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### Summit Facilitators

<table>
<thead>
<tr>
<th>Name</th>
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<tr>
<td>John Barthell</td>
<td>Provost and Vice president for Academic Affairs, University of Central Oklahoma (<a href="mailto:jbarthell@uco.edu">jbarthell@uco.edu</a>)</td>
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<tr>
<td>Carol Bender</td>
<td>Director, UBRP &amp; BRAVO!, The University of Arizona (<a href="mailto:bender@email.arizona.edu">bender@email.arizona.edu</a>)</td>
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<tr>
<td>Beth Cunningham</td>
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<tr>
<td>Jeffery R. Demarest</td>
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<td>Dr. Melvin Druelinger</td>
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<tr>
<td>Bert Holmes</td>
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<td>Susan Larson</td>
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<td>Michael Nelson</td>
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<td>Julio Rivera</td>
<td>Provost, Carthage College (<a href="mailto:julio@carthage.edu">julio@carthage.edu</a>)</td>
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<tr>
<td>Michael Palladino</td>
<td>Dean, School of Science, Monmouth University (<a href="mailto:mpalladi@monmouth.edu">mpalladi@monmouth.edu</a>)</td>
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<tr>
<td>Jodi Wesemann</td>
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<tr>
<td>Jenny Olin Shanahan</td>
<td>Director of Undergraduate Research, Bridgewater State University (<a href="mailto:Jenny.Shanahan@bridgew.edu">Jenny.Shanahan@bridgew.edu</a>)</td>
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<tr>
<td>Katherine Whatley</td>
<td>Vice President for Annual Programs, The Council of Independent Colleges (<a href="mailto:kwhatley@cic.nche.edu">kwhatley@cic.nche.edu</a>)</td>
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### Staff

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<tr>
<td>Shontay Kincaid</td>
<td>Project Manager, CUR National Office (<a href="mailto:skincaid@cur.org">skincaid@cur.org</a>)</td>
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Biographies of Plenary Speakers
(In order of presentation)

**Charles Blaich**, Center of Inquiry at Wabash College and Director of the Higher Education Data Sharing Consortium (HEDS)
Charles Blaich is the Director of Inquiries at the Center of Inquiry at Wabash College and the Director of the Higher Education Data Sharing Consortium (HEDS). He received his Ph.D. in Psychology from the University of Connecticut in 1986. He taught at Eastern Illinois University from 1987-1991 and then at Wabash College until 2002. Blaich assumed his current position at the Center of Inquiry in 2002 and became the director of HEDS in 2011.

**Kathleen Wise**, Center of Inquiry at Wabash College
Kathleen Wise is the Associate Director of Inquiries at the Center of Inquiry. She received her MBA from the University of Chicago in 2001. She was a Senior Financial Analyst at Eli Lilly and Company from 2001-2003, and then became a Research Fellow at the Center of Inquiry in 2004. Wise assumed her current position at the Center of Inquiry in 2007.

**Rebecca Martin**, National Association of System Heads
As Executive Director, Rebecca Martin oversees National Association of System Heads (NASH). Previously, Rebecca served as Senior Vice President for Academic Affairs for the University of Wisconsin System from 2007 to 2011. Under her leadership, the System aggressively focused on improving the retention and graduation rates of underserved students. Prior to her time at the System office, Rebecca Martin served for five years as Provost and Vice Chancellor at University of Wisconsin – Parkside. Before that, she served at the University of Vermont, where she held several positions including Senior Vice Provost, Interim Provost, and Acting President. She earned her doctorate in Public Administration from the University of Southern California.

**Myles Boylan**, National Science Foundation
Myles Boylan is a Program Director at the National Science Foundation (NSF), where he has served as a member of the Division of Undergraduate Education (DUE) since 1984. In DUE, he works on the National Dissemination component of the Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics (TUES) Program and leads the Widening Implementation and Demonstration of Evidence-based Reforms (WIDER). In addition, he is a member of the Division of Graduate Education, in which he served for two years as the Acting Division Director and currently leads the Graduate Education Research program.

**Richard Dunfee**, American Association of State Colleges and Universities’ Grants Resource Center
Richard Dunfee became Executive Director of the American Association of State Colleges and Universities’ Grants Resource Center in June of 2006. He previously served as President of the Colleges of Mid-America, Vice President for Administration at City University of New York / York College, Assistant Vice President for Research at St. Cloud State University in MN, and Assistant Vice President for Global Outreach at University of MD University College. More recently he has worked as an independent grants and contracts consultant in Baltimore, and led faculty development seminars and taught graduate classes at Johns Hopkins University. He has written numerous successful grant proposals to a variety of Federal agencies and more than twenty private foundations, and is the author of articles and books on funding and consortia in education.

**Daniel Weiler**, Daniel Weiler Associates
Daniel Weiler has more than 40 years of experience in the evaluation of education programs and projects at all levels. Daniel Weiler Associates (DWA), his private consulting in Berkeley, California, has conducted independent evaluations of two NSF-supported National Centers and six NSF-supported three-year projects including two previous CUR workshop projects, and is currently the independent evaluator for two additional NSF-supported projects, including CUR’s NSF/TUES project.
Elizabeth Ambos
In May 2012, Dr. Elizabeth L. Ambos became Executive Officer of the Council of Undergraduate Research, in Washington, DC. CUR, with over 670 institutional members, and more than 9500 individual members, is the leading organization supporting undergraduate research in the nation, with several international affiliate partners in the United Kingdom, Australia, and Canada.

Prior to joining CUR, Dr. Ambos served as Assistant Vice Chancellor for Research Initiatives and Partnerships at the California State University (CSU) Office of the Chancellor, from 2006 to 2012. This position capped a 23-year career as a faculty member and administrator in the CSU, during which time she helped lead numerous workforce, research and technology transfer development initiatives, as well as general education, teacher preparation, faculty professional development, and high school to college transition reform initiatives. While at the Chancellor’s Office, she led CSU system research and workforce development efforts, fostering external and internal support for CSU mission-related initiatives and partnerships, such as CSU’s extensive portfolio of research affinity groups, undergraduate research, and Professional Science Masters’ programs. Before the Assistant Vice Chancellorship, Ambos was a faculty member in Geological Sciences at California State University, Long Beach (CSULB) and served in a variety of administrative positions at CSULB, including Associate Vice President for Research and External Support in the Division of Academic Affairs (2003-2006), Graduate Dean (2002-2003), and Associate Dean in the College of Natural Sciences in Mathematics (1998-2003). Dr. Ambos received her A.B. degree from Smith College, and her M.S. and Ph.D. degrees from the University of Hawaii at Manoa.

Kerry Karukstis
Kerry K. Karukstis is is the Ray and Mary Ingwersen Professor of Chemistry at Harvey Mudd College. She regularly teaches courses in general chemistry, physical chemistry, and biophysical chemistry and maintains an active, externally-funded research laboratory with undergraduates as collaborators in the area of spectroscopic and light scattering techniques to characterize the structure and physical properties of surfactant aggregates and macromolecular host guest systems. Dr. Karukstis has served CUR as a councilor for the Chemistry Division (1993-2010) and now as President Emeritus councilor (2010- ), Chemistry Division Chair (2001-2003), Secretary (2005-2006), Executive Board member (2001-2003, 2005-2009), President (2007-2008), CUR Volunteer of the Year (2004 and 2010), Chair of the Outreach Committee (2004-2005), co-chair of the CUR 2006 National Conference, co-chair of the Nominations Committee (2008-2010), co-PI on CUR’s NSF-CCLI Phase 2 regional workshop initiative and CCLI Phase 3 system/consortia workshop initiative, feature editor for CUR in the Journal of Chemical Education, chair of the Transformative Research Summit Organizing Committee, and co-editor of two CUR books, Developing and Sustaining a Research-Supportive Curriculum: A Compendium of Successful Practices (2007) and Transformative Research at Predominantly Undergraduate Institutions (2010).

Mitch Malachowski
Mitch Malachowski received a B.A. degree in chemistry from Rhode Island College in 1977 and a Ph.D. in organic chemistry from the University of North Carolina at Chapel Hill in 1983. After teaching at Gettysburg College for one year, he joined the faculty at the University of San Diego in 1984. During 1992 he was a visiting professor at Leiden University, the Netherlands and in 2005, at the University of California at San Diego. Mitch served as Associate Dean of Arts and Sciences at USD from 1989 until he came to his senses in 1994.

Dr. Malachowski maintains an active research program involving the bioinorganic chemistry of copper and iron containing proteins and in supramolecular chemistry and has received funding from the National Science Foundation, the Petroleum Research Fund and the Research Corporation. During his time at USD, he has worked with over 100 research students and he has published over 50 papers, many of them with undergraduate co-authors. Along with his chemistry research, Mitch also has a long-standing interest in the history and philosophy of science and science pedagogy. He has published papers on the work of Sir Isaac Newton, the use.
of models in science, the utility of writing in the sciences and academic advising. Malachowski also is interested in
the relationship between research and student learning and has published articles on fostering administrative support
for research, research vs. student-oriented scholarship, promoting research in non-science areas, the role of mentoring
in research, starting a research across the curriculum movement and changing institutional culture. Malachowski
was president of the Council on Undergraduate Research from 2002 to 2003 and has taken on many roles in the
organization. Mitch has received several awards including one for teaching excellence from the University of North
Carolina, the administrator of the year award at USD, the 1999 Davies Award for Teaching Excellence at USD, three
University Professorships from USD and the Charles B. Willard award for distinguished career achievement from
Rhode Island College. He will receive the 2014 CUR Fellows Award in June

Jeffrey M. Osborn

Dr. Jeffrey M. Osborn is Dean of the School of Science and Professor of Biology at The College of New Jersey. Dr.
Osborn is an administrator-teacher-scholar, conducting research and teaching in the broad field of plant evolutionary
biology. His teaching has covered a range of areas, including biology, botany, and interdisciplinary courses. He
employs an array of pedagogical methods, directly incorporates original research into his courses, and has con-
tributed to curricular reform efforts at his own institutions and at the national level. Dr. Osborn has received over
$7 million in funding from a variety of sources, including the National Science Foundation, J. William Fulbright
Foundation, Natural Sciences and Engineering Research Council of Canada, among others. He is a Past-President of
the Council on Undergraduate Research (CUR), a national organization of over 9,000 individual and 700 institu-
tional members representing all disciplines and over 900 colleges and universities of all types. He currently serves as
a principal investigator on CUR’s National Science Foundation-funded national workshop project, as an Associate
Editor for the American Journal of Botany, and as a member of the External Advisory Board of the State of Okla-
homa’s National Institutes of Health (NIH) IDeA Network of Biomedical Research Excellence Program. Osborn has
served as Program Director and member of the Executive Board of the Botanical Society of America, and on the Peer
Review Committees for the Council for International Exchange of Scholars—Fulbright Senior Scholar Program and
for the American Association for the Advancement of Science (AAAS)—Research Competitiveness Program. He has
received numerous awards including the Centennial Award from the Botanical Society of America, the Antarctica
Service Medal of the United States of America from the National Science Foundation, and Truman State University’s
(Missouri) highest award for recognizing outstanding faculty members. He holds B.S and M.S. degrees from Texas
State University—San Marcos and a Ph.D. from Ohio State University.
**Biographies of CUR Facilitators**

**John Barthell**
Dr. John F. Barthell has recently been named the Provost and Vice President for Academic Affairs for the University of Central Oklahoma (UCO), has served as the Dean of the College of Mathematics and Science for the last five years, serving previously as Associate Dean of the same college and, previous to that, as the Assistant Dean of the Joe C. Jackson College of Graduate Studies and Research (also at UCO). A Professor of Biology, Dr. Barthell maintains an active, student-centered and international research program that involves nine collaborators from four countries (Bulgaria, Greece, Turkey and the United States). His interest in Transformative Learning emphasizes undergraduate research, and he is currently the PI or co-PI of three National Science Foundation grants that support such activities (including a “Research Experiences for Undergraduates” grant). As Dean, Dr. Barthell’s focus has been on producing a faculty development model that supports the teacher-scholar role for faculty members in his college. He is the author of over 40 articles pertaining to the biology of insect invasions as well as other topics relating to Transformative (High Impact) Learning practices on the UCO campus. In addition to being a CUR Councilor, he serves as the Chair of the Deans’ Council for the Oklahoma (NIH) IDeA Networks for Biomedical Research Excellence (INBRE) grant; he also serves as the Program Coordinator of the Predominantly Undergraduate Institution (PUI) campuses in Oklahoma that are funded by the same grant. Dr. Barthell received his BA (in Zoology) and PhD (in Entomology) at the University of California at Berkeley.

**Carol Bender**
Carol Bender is a Distinguished University Outreach Professor and Director of the Undergraduate Biology Research Program (UBRP) and Biomedical Research Abroad: Vistas Open! Program (BRAVO!) at the University of Arizona (UA). Over the past 26 years, drawing on the research community at UA, Professor Bender developed high impact educational outreach experiences serving as a catalyst for the creation of programs that have national and international impact. Primary among these programs is UBRP. UBRP teaches undergraduate students how science is done by involving them in research. Through her efforts, UBRP has grown to support 140 students a year who work with faculty mentors in 43 UA departments and off-campus research institutions in Tucson and Phoenix. More than 2,000 students have benefited directly from UBRP, which is supported in part by grants. In 1992, Professor Bender developed the Biomedical Research Abroad: Vistas Open (BRAVO!) Program to give research-experienced undergraduates exposure to the international scientific community by enabling them to do research in other countries. Since its inception, more than 230 BRAVO! students have done research in 37 countries. These students proved that undergraduates can contribute to advancing knowledge, and they are excellent scientific and cultural ambassadors.

Outreach to precollege students is an important role for the University and Professor Bender has coordinated numerous programs through the UBRP Office that provide science experiences for Tucson area children. More than 100 high school and community college students have participated in research on the UA campus through these programs. Bender has had two Fulbright Fellowships, one to Japan (1997) and one to India (2011). Following her experience in Japan, she founded the Arizona Chapter of the Fulbright Association, a state-wide organization dedicated to promoting international understanding. She served as chapter president for several years. Bender has been a CUR Councilor since 2004, first in the At-Large Division and subsequently in the URPD Division. She is the current chair of the CUR Fellows Committee.

**Beth Cunningham**
Beth is the Executive Officer of the American Association of Physics Teachers. She earned a Bachelor of Science degree, a Master of Arts degree, and a Doctor of Philosophy from Kent State University. After receiving her doctorate, Beth was a post-doctoral fellow at the Hormel Institute at the University of Minnesota. She taught for one year in the physics department at Gettysburg College immediately following her post-doctoral fellowship. In 1989 she joined the physics department at Bucknell University as an assistant professor, attaining full professor in 2002. She was named associate dean of the faculty in the College of Arts and Sciences in 2000. As a faculty member she involved students actively in her research and ran a Research Experiences for Undergraduate site. In 2006, she was appointed as Provost,
Dean of the Faculty, and Professor of Physics at Illinois Wesleyan University. As provost, Beth initiated a strategic curricular review and revitalized departmental reviews to enhance academic programs. At AAPT since 2011, Beth provides leadership on a number of physics education initiatives including providing professional development opportunities for high school teachers of physics, supporting physics educators in higher education through workshops for new faculty and topical conferences, and the PhysTEC project to increase the number and quality of high school physics teachers. As a long time member of AAPT, she enjoys working closely with many members to improve physics teaching and learning at all levels. She has assisted AAC&U Project Kaleidoscope in developing STEM faculty leaders and CUR to incorporate undergraduate research into the curriculum. Beth's current interests include the structure and function of phospholipid membranes, physics education research, and increasing the participation of underrepresented groups in physics.

Jeffery Demarest
Dr. Jeff Demarest (Professor of Biology, Juniata College) earned his Ph.D. in Physiology from the University of California at Berkeley. His career has been a combination of teaching, research and administration. He served as Chair of the Biology Department at Juniata College from 1994-2004. He served as a Counselor for the Biology and At-large Divisions of the Council on Undergraduate Research (CUR) for 9 years and serves on the CUR Quarterly editorial Board as At-large Division editor. Dr. Demarest has served as a workshop facilitator for six “Institutionalizing Undergraduate Research.” workshops funded by a National Science Foundation grants to the Council on Undergraduate Research. He also frequently serves as an external reviewer for college and university Biology departments and programs nationwide. He is currently principle investigator on an NSF S-STEM grant aimed at recruiting two year/community college transfer students to Juniata's Science programs. His current research is a collaborative project with two members of Juniata's Chemistry Department on the effects of macromolecular crowding on calmodulin structure and diffusion measured with circular dichroism and pulse gradient NMR. His research and teaching have been supported by grants from the Merck-AAAS Interdisciplinary Summer Research Opportunity Program, George I. Alden Trust, William J. von Liebig Foundation, Howard Hughes Medical Institute, National Institutes of Health, The Marine Biological Laboratory and Smith-Klein-Beckman Foundation. He teaches courses in cell and organismal physiology, microscopy and the art and science of brewing. Since he came to Juniata College in 1994 more than 60 students have performed independent research projects with Dr. Demarest most of whom have presented the results of their research at the National Conference on Undergraduate Research or at professional society meetings.

Melvin Druelinger
Melvin Druelinger is Professor of Chemistry at Colorado State University-Pueblo (a HSI PUI). He has served as Dean of Graduate Studies and Research and as Director of the Office of Research and Sponsored Programs. He served as a Program Director at NSF in the Division of Undergraduate Education (DUE). He was an elected member of the Grants Advisory Board of the AASCU Grants Resource Center for several years. Mel is a frequent proposal reviewer for NSF and for other funders including PRF, Dreyfus Fdn., NIH (AREA), Research Corporation and others. Mel is a CUR Chemistry Counselor and is active in many areas including serving as a CUR Proposal Writing Institute facilitator for many years, as an organizer and presenter for the annual CUR-YCC ACS symposium on “Starting a Successful Research Program at a Predominantly Undergraduate Institution”, and as a CUR-POH reviewer. He received his degrees from the University of Wisconsin-Madison (Ph.D., physical organic chemistry) and from Indiana University-Bloomington (BS, Chemistry). In addition to CSU-Pueblo, he has taught at the U.S. Air Force Academy (Distinguished Visiting Professor), Millikin University (Chair) and at Indiana State University. He teaches organic chemistry and is co-author of an organic lab text. Mel's current research interests include organic synthesis and mechanisms, selective electrophilic fluorinations of organics (as bio-active materials), cycloadditions, heterocycles, reactive intermediates and polymers. He has conducted research at the Seiler Research Lab (USAFA), the Rocket Propulsion Lab (Edwards AFB), at DowElanco, at IBM (Almaden), and at CSU-FC. Mel has served as research mentor to many students in his lab (BS and MS), including several minority scholars. These efforts have led to papers and student presentations at national ACS meetings and other research conferences. Their research has been supported by NIH, NSF, PRF, AFOSR/DOD, Merck/AAAS, Packard Fdn. and other sources. He maintains an active undergraduate research group. As a champion of undergraduate research in all disciplines, Mel has served as
a leader and/or facilitator at several CUR Institutionalizing Undergraduate Research Workshops. He has organized and chaired Southern Colorado UG Research and Creative Works Conferences. He feels strongly that working with students in research is one of the best forms of teaching and that the integration of teaching and research is an essential element in a quality education.

Mel is a marathoner and a mountaineer. He continues as an active member of and leader with the El Paso County Search and Rescue team, a mountain search and rescue group. He has served the people of Colorado in this capacity for 34 years.

Bert Holmes

Bert E. Holmes is the P. G. Carson Distinguished Chair of Science at the University of North Carolina-Asheville. His entire 38-year career has been at undergraduate institutions that include a modest size, private liberal arts colleges for 8 years (Ohio Northern University with about 2500 students), a very small liberal arts college for 15 years (Lyon College, formerly Arkansas College with about 450 students) and he has been at a public liberal arts college for the past 15 years. His research program, on the gas-phase reaction kinetics of halohydrocarbons, has been funded for 24 consecutive years by the NSF and before that by Research Corporation and the Petroleum Research Fund. Currently he has both MRI and RUI awards from NSF. Since 2010 he has 14 peer-reviewed publications that include 25 undergraduate co-authors.

In the past three years he has served eleven times as an external evaluator/reviewer for departments of chemistry and 13 times he has conducted workshops on college campuses focusing on establishing and sustaining undergraduate research programs. Three times he has reviewed Departments of Chemistry seeking certification from the CPT of the American Chemical Society. From 2008-2011 he was a Program Officer at NSF. He has been a Camille and Henry Dreyfus Scholar, he received the prestigious Chemical Manufacturers Association Catalyst Award for outstanding achievement in promoting undergraduate chemical education, and he was recently selected as the 2014 winner of the ACS Award for Research at an Undergraduate Institution.

Susan Larson

Susan Larson (BA, Univ. of Manitoba; PhD, McMaster University) joined the faculty at Concordia College in Moorhead, MN in 1998. She is an Associate Professor in the Psychology Department and in 2009 she was appointed the College’s first Director of Undergraduate Research, Scholarship and National Fellowships. Her work as a Councilor in the Psychology Division of the Council on Undergraduate Research has helped prepare her for this new role. Larson is currently Chair of the Psychology Division of CUR and serves on CUR’s Executive Board. Larson regularly teaches Research Methods, Learning and Behavior, Drugs and Behavior, and Senior Capstone in Psychology. She is a contributing member of the Women’s Studies program and teaches a course on the experiences of women in science. She was instrumental in the development of a Neuroscience minor at Concordia. Larson maintains an active research program with undergraduates as collaborators. Working with three to six students each year, her laboratory investigates behavioral and cognitive changes associated with immune system activation. She and her collaborator were recently funded by the Lupus Foundation of Minnesota to evaluate the behavior and gene expression of lupus prone mice.

Michael E. Nelson

Michael Nelson received his B.S. in 1965 from Fort Hays State University (KS) and participated in an undergraduate research program as geology major. He received an A.M. from the University of South Dakota and a Ph.D. from the University of Utah where he was a NDEA Title IV Fellow; both degrees were in geology. Sigma Xi, the Scientific Research Society, and The Geological Society of America supported his doctoral research. Dr. Nelson joined the faculty of Fort Hays State University in 1970, became Chair of the Department of Geosciences in 1973, and Interim Dean of the College of Arts and Sciences in 1991. At FHSU he taught courses in paleontology and stratigraphy, and supervised numerous undergraduate research projects and M.S. theses. His research, and the majority of his students’ fieldwork, was centered in the Intermountain West-Utah, Wyoming, Nevada, and Idaho. In 1991 he was appointed Head (Dean) of the Division of Science at Truman State University, the public liberal arts and sciences university of Missouri. On 1 July 1998 he assumed the position of Dean of the College of Science and Health at the University of Wisconsin-La Crosse and retired from that institution in 2006. Dr. Nelson is a past president of
Michael Palladino

Michael A. Palladino is Dean of the School of Science and Professor of Biology at Monmouth University in West Long Branch, NJ. He received his B.S. in Biology from Trenton State College (now known as The College of New Jersey) and a Ph.D. in Anatomy and Cell Biology from the University of Virginia. In 1999 he joined the faculty at Monmouth University and has served as Dean since 2008. At Monmouth, Dr. Palladino has taught undergraduate courses in biotechnology, endocrinology, genetics, and molecular cell biology. He has received several awards for research and teaching including the 2005 Distinguished Teacher Award from Monmouth University, the 2005 Caring Heart Award from the New Jersey Association for Biomedical Research, the 1993 New Investigator Award from the American Society of Andrology, and the 1997-98 Outstanding Colleague Award for teaching excellence from Brookdale Community College. In 2009 Dr. Palladino received the Young Investigator Award from the American Society of Andrology (ASA), an award that recognizes the contributions to the field of andrology by a member of the ASA under 45 years of age.

Dr. Palladino developed the Monmouth University School of Science Summer Research Program (www.monmouth.edu/srp) and he has an active laboratory of undergraduate students involved in research on the cell and molecular biology of male reproductive organs. His research has been funded by grants from the National Institutes of Health, Baystate Medical Center, the NJ Department of Environmental Protection, the U.S. Department of Labor, Bristol-Myers Squibb, and the NJ Sea Grant College Program. Dr. Palladino has served as a research mentor for over 70 students. Monmouth undergraduate students under his supervision have presented research at regional, national, and international meetings, won awards for research presentations, co-authored publications, and have received over $40,000 in research-related grants and scholarships. Dr. Palladino is actively involved in many scientific organizations. He has been a member of the Biology Council of CUR since 2005 and is the Division Chair-Elect. He is Chairman of the Finance Committee for the ASA. Dr. Palladino currently serves on the Board of Trustees for Einstein’s Alley, the Board of Trustees for the Central Jersey Blood Center, the Executive Board for the Metropolitan Association of College and University Biologists, the Biotechnology Advisory Committee for Raritan Valley Community College, the Advisory Committee for the Biotechnology Program at Middlesex County College, the Advisory Board for Candor International School in Bangalore, India, and the Advisory Board for the Monmouth County Vocational School System Biotechnology High School. He is reviewer or editorial board member for several research journals, science education journals, and regional and national grant review panels. Dr. Palladino is the co-author of Introduction to Biotechnology the leading undergraduate textbook in the field now in its third edition and used at over 100 institutions throughout the United States, Canada, the United Kingdom, Australia, Germany, India, New Zealand, Pakistan, Singapore, and China. Introduction to Biotechnology has been translated in Chinese, German, Korean, Spanish and Taiwanese. Dr. Palladino is also on the co-authorship team of W.S. Klug, M.R. Cummings and C.A. Spencer for two leading undergraduate textbooks in genetics, Concepts of Genetics and Essential of Genetics.

Julio Rivera

Julio Rivera is Provost and Professor of Geography at Carthage College in Kenosha, Wisconsin. He has been a continual advocate for the advancement of undergraduate research in the Social Sciences, Humanities and Fine Arts. Before becoming Provost in 2010 he taught courses in geographic information science (GIS); satellite image interpretation; urban, economic, and cultural geography and directed the Carthage Geographic Information Systems Laboratory. His research with students focused on the development of suburban communities and how the design of the built environment enhances or impedes community life. During his sabbatical, he worked at the Global Institute for Sustainability at Arizona State University examining trends in the development of the urban fringe in the Phoenix metropolitan area. He regularly brought students to Ometepe Island, Nicaragua as part of a service-learning
course in the Geography and Biology of Nicaragua. Julio has directed over 100 undergraduate student senior thesis projects, many of which were presented at regional and national conferences. He continues to serve as a consultant to both government and business including Snap-on Tools, Racine County Convention and Visitors Bureau, the Racine Harbor Commission, and the Center for Advanced Technology and Innovation. Rivera is the author of a number of papers and is a member of the Association of American Geographers, National Council on Geographic Education, and the American Conference of Academic Deans and is the President of the Council on Undergraduate Research, where he serves on its executive board and was named its volunteer of the year in 2005. He is the recipient of the 2002 Carthage College Distinguished Teaching Award. Rivera earned his Ph.D. in Geography from the University of Wisconsin-Milwaukee, his B.A. in Journalism and Theology at Marquette University, and M.A. in Higher Education and Student Affairs at The Ohio State University.

Jenny Olin Shanahan
Jenny Shanahan is Director of Undergraduate Research at Bridgewater State University in Massachusetts, where she oversees a multidisciplinary summer research program, student conference travel, two annual campus symposiums of several hundred students’ research, and publication of The Undergraduate Review: A Journal of Undergraduate Research and Creative Work. She was previously Associate Professor of English and Director of the Honors Program at St. Mary’s University of Minnesota (2000-2010). Dr. Shanahan has presented over 30 faculty workshops and published several articles on the mentoring of student research across the disciplines, integrating undergraduate research in the curriculum, scaffolding research skills from lower- to upper-division courses, and managing an undergraduate research program. She serves as a CUR Councilor in the Undergraduate Research Program Directors (URPD) Division. Jenny Shanahan earned a Ph.D. in Literature from Marquette University in 2000, with a focus on Multi-Ethnic Literatures of the United States.

Jodi Wesemann
Jodi L. Wesemann is the Assistant Director for Educational Research at the American Chemical Society, a position she assumed in 2013. She served eleven years as Assistant Director for Higher Education, working with the Undergraduate Programs Office, the Graduate & Postdoctoral Scholars Office, and the Office of Two-Year Colleges. Prior to joining ACS staff in 2002, she was Associate Professor of Chemistry at Saint Mary’s College of California, where she conducted research with undergraduate students. She earned her B.A. in chemistry from Augustana College in Rock Island, IL and Ph.D. in inorganic chemistry from Indiana University-Bloomington. She was a Fulbright Fellow at Universität Braunschweig, Germany and a postdoctoral fellow at Harvey Mudd College supported by the Camille and Henry Dreyfus Foundation Scholar/Fellow Program for Undergraduate Institutions. Wesemann has chaired the ACS Southern Indiana Section and the Younger Chemists Committee. She served as Treasurer for the Association for Women in Science from 2006-2011 and chaired the 2013 NSF-ADVANCE Workshop Program Committee. A member of the Council on Undergraduate Research, she served as a chemistry councilor from 2001-2010, contributed to the NSF planning grant “Two-Year Technician Education and Transfer Programs: Tapping the Potential of Undergraduate Research,” co-edited Broadening Participation in Undergraduate Research: Fostering Excellence and Enhancing the Impact with Mary K. Boyd, and now facilitates at Institutionalizing Undergraduate Research Institutes. She also assisted ChemEd Bridges with the preparation of Maximizing Our Impact in the World of Student Transfer: A Handbook for Chemistry Faculty.

Katherine Whatley
Kathy Whatley is Vice President for Annual Programs at the Council of Independent Colleges (CIC) in Washington, DC. She received her B.S. in physics from Wake Forest University in 1977 and holds the M.A. (1980) and Ph.D. (1982) in experimental nuclear physics from Duke University. Kathy spent most of her career (1982-2008) at the University of North Carolina at Asheville, serving on the faculty of the Department of Physics and as Director of the Undergraduate Research Program for ten years (1991-2001), Dean of Natural Sciences for four years (2003-2007), and interim Vice Chancellor for Academic Affairs for one year. Kathy served on the organizing committees for the first, second, and tenth National Conference on Undergraduate Research, all held at UNC Asheville, on the Board of Governors of NCUR from 1997-2003, and on the Physics and Astronomy Council of CUR from 1988-1998. Kathy’s research interests were in Mössbauer spectroscopy of soils, prehistoric Native American pottery, and ballast.
stones from pirate ships. After five years (2008-2013) as Provost and Professor of Physics at Berry College in Rome, Georgia, she moved to the CIC, where she plans annual institutes and workshops for chief academic officers and department chairs. Kathy is happy to be a resource for starting and maintaining an undergraduate research program, organizing a student research journal, organizing student research symposia, motivating faculty, and budgeting.

### Project Staff

**Shontay Kincaid**

Shontay Kincaid is the Project Manager for CUR’s NSF Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics (TUES) grant. She provides Comprehensive Support for Faculty, Institutions, State Systems and Consortia. Shontay received her undergraduate degrees in Social Work and Psychology from Virginia Commonwealth University. Also from Virginia Commonwealth University, she holds a Masters degree in Social Work with a concentration in Administration, Planning and Policy which prepared her in skilled analyzing, formulating, implementing and evaluating policies, plans and programs. Shontay has spent most of her career working for non profit organizations in the realm of higher education. Her post graduate work includes managing several programs for nonprofits as well as coordinating a Scholars Program for students in Washington, DC where she worked closely with Faculty from George Washington University, Georgetown University, Howard University, Trinity University and Catholic University of Washington, DC. Shontay also managed collaborative clinical community based research programs in the DC Metropolitan area and coordinated projects for TRIO programs within the Virginia Community College System. In addition, Shontay has worked to support hundreds of Faculty and Administrators across the country. She is happy to provide ongoing assistance to project participants by connecting them with CUR resources and opportunities that will further assist with the institutionalizing of undergraduate research at their respective institution.
Project Participants

California State University System (CSU) System Institutional Participants:
CSU- Bakersfield
CSU- Channel Islands
CSU- Dominguez Hills
CSU- East Bay
CSU- Fullerton
CSU- Los Angeles
CSU- Monterey Bay
CSU- Pomona
CSU- San Luis Obispo
CSU- San Marcos
CSU- Stanislaus

City University of New York (CUNY) Institutional Participants:
Baruch College
Brooklyn College
College of Staten Island
Hunter College
John Jay College
Lehman College
Medgar Evans College
NYC College of Technology
Queens College
The City College of NY
York College

Council on Public Liberal Arts Colleges (COPLAC) Institutional Participants:
Eastern Connecticut State University
Fort Lewis College, Colorado
Georgia College & State University
Keene State College, New Hampshire
Massachusetts College of Liberal Arts
Midwestern State University, Texas
New College of Florida
Ramapo College of New Jersey
Shepherd University
Southern Oregon University
St. Mary's College of Maryland
SUNY College at Geneseo
The Evergreen State College
Truman State University
University of Alberta, Augustana Campus
University of Illinois at Springfield
University of Maine at Farmington
University of Mary Washington
University of Minnesota Morris
University of Montevallo, Alabama
University of North Carolina Asheville
University of Virginia's College at Wise
University of Wisconsin-Superior
Great Lakes Colleges Association (GLCA) Institutional Participants:
Albion College
Allegheny College
DePauw University
Earlham College
Hope College
Kalamazoo College
Kenyon College
Ohio Wesleyan University
The College of Wooster
Wabash College

Pennsylvania State System of Higher Education (PASSHE) Institutional Participants:
Bloomsburg University
California University of PA
Cheyney University
Clarion University
East Stroudsburg University
Edinboro University
Indiana University of PA
Kutztown University
Lock Haven University
Mansfield University
Millersville University
Shippensburg University
Slippery Rock University
West Chester University

University of Wisconsin State System (UW) State System Institutional Participants:
UW-Eau Claire
UW-Green Bay
UW-La Crosse
UW-Madison
UW-Milwaukee
UW-Oshkosh
UW-Parkside
UW-Platteville
UW-River Falls
UW-Stevens
UW-Stout
UW-Whitewater
## California State University (CSU) System

Our main success has been a heightened awareness of the value of undergraduate research on participating campuses and at the office of the chancellor. Among the high-impact practices in widest use at the CSU, this one is now regularly cited among the top two or three. We are also closer to two of the three goals our system-level team stated at the outset, to (a) create a system-wide journal of undergraduate research, and to (b) support system-level data gathering on student participation in high-impact practices. We expect those sources of data and cultural capital to add momentum to our third goal, not yet met: (c) to build expectations of student research into business models for funding, faculty work, and facilities allocation. We could most use creative solutions from our colleagues on how to make long-term structural changes of this kind. Our updated plans include significantly greater system-level investment in student success, to include a $12 million allocation from the chancellor for high-impact practices in general, of which we expect a considerable share to go to undergraduate research throughout the CSU. As it does, we will continue to refine our ability to define and track student participation in—and benefits from—these interventions.

### CSU–Channel Islands

The main successes we have achieved include embedding research into the curriculum, establishing an undergraduate research donation fund, increasing outreach to students from underrepresented groups, creating a campus online student research journal, establishing procedures around research-related nominations and awards and collaborating with National Park Service on student research projects across disciplines. Major challenges we are facing include integrating research into lower division courses, recruiting transfer students into research opportunities, putting research opportunities in front of every student, faculty workload issues and funding. We are looking for creative solutions on engaging lecturer faculty, designating courses as research-intensive, tracking students who have engaged in research and raising student awareness and interest. Our updated plans include research ambassadors: research students who visit prerequisite or GE classes to talk about student research benefits and opportunities, faculty development, especially for lecturers, about student research mentoring, collaboration with feeder community colleges around transfer courses, student research office with dedicated staff, library archive of students research products (in progress…) and establishing a budget line for student research (in progress…).

### CSU–Los Angeles

We have achieved modest progress towards increased support for undergraduate research/RSCA and curriculum revision that infuses RSCA experiences. Funding to support RSCA through direct grants to students and faculty grants for research that includes student involvement has increased. Several faculty are developing curriculum for an undergraduate minor in research. Through GE revision, a GE pathway will be developed with an interdisciplinary research focus. Through semester conversion, some program level revisions will integrate more RSCA like experiences. Opportunities for undergraduate students to participate in applied research through community engagement have increased with a new Center. Plans are underway for an Interdisciplinary Research Center to support research that involves undergraduate students. Developing an analytic capability to assess the impact on RSCA has seen some progress with a multi-measure protocol and initial data collection and analysis. Major challenges are: Variation across departments with opportunities for RSCA that involve students; Institutional integration of RSCA is nascent; and The student population is first generation college, over 80% of the population is Pell eligible. We need solutions on: Fostering Interdisciplinary RSCA across six colleges; Innovative mechanisms for faculty support to supervise student research; Best practice examples of infrastructure support for RSCA (RSCA council, committees, etc.); and Pathways into RSCA for transfer students. Updated plans include: Development of a GE Pathway in Undergraduate Research; Implement a Research Center to support students as researchers; and Expand Annual Student Research Symposium into a “Celebration of RSCA Day”.
CSU–Monterey Bay
CSUMB’s primary achievement is the significant increase in campus support for undergraduate research (UGR) and the Undergraduate Research Opportunities Center (UROC). The university now funds 45% of UROC staffing costs and this percentage will likely increase in fiscal year 2014-15. Beyond staffing, the university provides additional financial support for undergraduate research and UROC through summer housing, evaluation funding, mentor funding, and limited student and staff travel costs. These investments in UROC move us closer to full institutionalization of undergraduate research at CSUMB. We face three major challenges: 1) lack of non-STEM research opportunities, 2) limited interaction between tenure-track faculty and second-year students (our target group for first engaging students in UROC), and 3) systemic issues with writing. On the first challenge, we are working closely with Humanities and Social Science leadership and faculty to expose more students to faculty scholarship and research opportunities. However, we still face the challenge of securing funding to support non-STEM students in undergraduate research. The university is committed to hiring more tenure track faculty, which will address the second challenge. UROC will emphasize the need to hire faculty with research agendas that include undergraduate researchers and will meet with all new hires to discuss the role of undergraduate research on our campus. To meet the systemic writing issues, UROC will be hiring a writing instruction specialist to develop training programs for writing in the context of research, fellowships, and graduate school applications.

CSU–Poly Pomona
The Office of Undergraduate Research (OUR) at Cal Poly Pomona was established in September 2013 with funding from the CSU Chancellor’s Office. The OUR is an umbrella office that works with Student Support and Undergraduate Research Programs to provide research access to all students and support faculty who mentor these students. Our services are especially critical for early career, such as freshmen, sophomore, and first-year transfer students. We work to engage first-generation, low-income, and under-represented minority students for whom undergraduate research experiences are especially effective in closing the achievement gap. The main successes we have achieved include organizing the campus-wide Student Research Conference with 100 oral presentations and 30 poster presentations; disbursing $30,000 in scholarships; establishing an electronic repository for student research; and collaborating with Student Affairs to include research activities in the students’ extracurricular transcript. We are looking for creative solutions on effectively coordinating the various activities organized by funded research programs, including maintaining an updated master calendar of events that relate to undergraduate research.

CSU–San Marcos
The main successes we have achieved include: instituted the CSUSM Committee for Undergraduate Research (CUGR), broad buy-in from diverse disciplines; established an Undergraduate Research Faculty Fellow—secured philanthropic support for an UGR Faculty Fellow (Faculty fellow is from the Arts), provided leadership for CSU task force charged with developing a CSU undergraduate journal; increased UGR activity and success—CSU Statewide Competition, CSUSM Student Research Poster Showcase, Participation in SCCUR; and increased support for CSUSM undergraduates to present research at professional or scientific meetings.

Major challenges we are facing include: intensive faculty workload; equivocal UGR expectations for faculty; limited infrastructure to support student research; lack of a dedicated office for student research; lack of long-term sustainable funding; and limited student outcome data. We are looking for creative solutions on: clear written expectations for faculty efforts on undergraduate research activities in retention, tenure, and promotion (RTP) standards and policies; assessment and highlighting of undergraduate research activities and outcomes; consistent communication or contact with faculty and campus leaders across the CSU; and coordinated and dedicated campus and system-wide support for undergraduate research. Our updated plans include: increase participation of Arts and Humanities faculty and students; broaden external grant funding to support undergraduate research (NSF REU proposals); explore integrating UG Research into the classroom and collaboration on an NSF research project to study the impacts of UGR on student outcomes across the CSU (Proposal endorsed by 22 CSU campuses).
The City University of New York (CUNY)

The main successes we have achieved include the formation of a CUNY Undergraduate Research Council, comprising representatives from each college, to coordinate efforts across different campuses; establishing a CUNY undergraduate research website, as both an inventory of college programming and a forum to share best practices; and an upcoming workshop to discuss methods to integrate research into the undergraduate curriculum. The university has agreed to fund a faculty awards program to develop course ideas for integrating research into the curriculum. Our outreach activities have been successful in incorporating CUNY community colleges into the university-wide initiative to promote undergraduate research. The major challenges we face are that not all schools have a dedicated office of undergraduate research; this affects continuity and complicates our efforts to establish university-wide standards. We are looking for creative solutions for integrating research into the classroom across disciplines. This is especially so in the humanities and social sciences. We are interested in finding ways to have system-wide undergraduate research events, which are challenging given the scale of our institution. Our updated plans include a greater focus on curricular changes rather than promoting the apprentice model for broadening participation. We would like to see all 240,000 undergraduates at CUNY participate in an authentic research experience at some point in their college education.

Baruch College

Main Successes included: Increased awareness among faculty members about benefits of providing research and creative inquiry opportunities for undergraduate students; Development of learning objectives and outcomes for undergraduate research and creative inquiry; Inclusion of opportunities for undergraduate research and creative inquiry as a priority in the College's new strategic plan; Allocation of a modest budget to fund faculty initiatives that support and expand student undergraduate research and creative inquiry; Launched several curricular and co-curricular initiatives to increase opportunities for undergraduate students to conduct research and creative inquiry-The Writing Center, Center for Teaching and Learning, Library, and other academic support units are supportive of increasing undergraduate research and creative inquiry; and Successful engagement of the School of Arts and Science faculty in undergraduate research and creative inquiry. Major Challenges include: Lack of funding to support the consumables, travel, or other expenses necessary for individual student research and creative inquiry projects; Lack of recognition of faculty efforts for undergraduate research and creative inquiry in tenure and promotion decisions; and Faculty workload rules that inhibit participation in undergraduate research and creative inquiry efforts. Need Creative Solutions for: Funding for students research and creative inquiry expense; Funding for faculty initiatives both curricula and co-curricular; Recognition in tenure and promotion; Measures of success; and Workload rules that encourage faculty participation in undergraduate research and creative inquiry. Our Updated Plans include “Student Creative Inquiry Day” is being launched as an annual event and Development of an Inquiry Based Upper Level Honors Program Building links to community colleges based on faculty research and creative inquiry interests.

The City College of New York (CCNY)

The City College of New York (CCNY), the first college of The City University of New York (CUNY), is a comprehensive teaching, research, and service institution dedicated to accessibility and excellence in undergraduate and graduate education. CCNY provides its diverse student body with opportunities to achieve academically, creatively, and professionally in the liberal arts and sciences and in professional fields such as engineering, education, architecture, and biomedical education. The College is committed to fostering student-centered education and advancing knowledge through scholarly research. As a public university with public purposes, it also seeks to contribute to the cultural, social, and economic life of New York. Since its initial participation in the CUR workshop in April 2012, CCNY has realized several successes: established the undergraduate research coalition (URC), compiled an inventory of undergraduate research activities, and identified a CUR coordinator. An undergraduate research website to promote and capture activities, a CCNY-specific mentoring handbook, an inventory of CCNY courses with research elements, donor support for undergraduate research, and consideration of faculty incentives
are underway. CCNY’s principal undergraduate research challenges are maintaining consistent communications and momentum; increasing participation among faculty and students; attracting sufficient internal and external resources to support current and future activities; students retention; implementation of multidisciplinary academic support models; development of articulation agreements between different campuses to inculcate interdisciplinary programs to recruit students from 2-year to 4-year degree colleges. Such major challenges are not unique, and CCNY looks forward to learning about the creative approaches and solutions of other CUR institutions.

**Hunter College**

Hunter College has a long tradition of engaging undergraduates in research, particularly within the Science, Technology, Engineering & Mathematics (STEM) disciplines. Historically, student research took place as part of independent research courses, summer projects, and honors theses. Recent initiatives through the Office of the Provost to enhance undergraduate research include the Science Mathematics Opportunities Network (SciMON); the Undergraduate Research Initiative (UGRI); an annual Undergraduate Research Conference (UGRC), and Presidential funding initiatives for summer and semester-long research experiences within and outside Hunter. Our “Undergraduate Research Hub” website enables students to learn about training grant funding and faculty-initiated research opportunities in a central place and provides diverse tools and resources for students and faculty to make research connections: students can take a Matching Quiz to determine for which Hunter-based programs they are eligible, sign up for career development workshops, or ask SciMON staff questions about how to pursue research and graduate opportunities. Hunter also hired its first full-time Director of Undergraduate Research. Major challenges we are facing include limited participation in undergraduate research outside of the sciences, effectively building research into the curriculum, a comprehensive assessment and evaluation strategy of the outcomes of our initiatives, and securing external funds to expand support for undergraduate research initiatives both for PI’s labs and college-wide programs. Our updated plans include efforts to: 1) increase the number of students involved in a research experience outside of the sciences, 2) to infuse undergraduate research into the curriculum, and 3) to strengthen our assessment strategies.

**Lehman College**

For the past four decades, Lehman College has served the Bronx and its surrounding regions as an intellectual, economic, and cultural center. Lehman College has provided students with a first-rate liberal arts education, as well as preparation for careers in teaching, business, social work, health and natural sciences. One of the goals in the recently developed strategic plan at Lehman is to strengthen undergraduate research. The main successes achieved in the application of this plan include the implementation of research internship programs, the establishment of the Undergraduate Research Advisory Board, inclusion of research in the curriculum, research networking events, new internal funding opportunities, and the creation of the Office of Undergraduate Research. Current undergraduate programs at Lehman College include Louis Stokes Alliances for Minority Participation (LSAMP), STEM Scholars Program, and faculty working alongside students on grant-funded research projects. We are currently in the process of creating an inventory of undergraduate research projects. Major challenges we are facing at Lehman College include, resource limitations, difficulty integrating undergraduate research into the curriculum, inadequate administrative support, developing a campus-wide vision for undergraduate research standards, constraints on student time, and lack of student awareness. We are looking for creative solutions to strengthen the culture of research by increasing the number of research-active faculty in the midst of the reassigned time debate. Our updated plans for Lehman College include obtaining external funding; develop a undergraduate research strategic plan, and embedding of research in the curriculum campus-wide.

**Medgar Evers College**

Medgar Evers College seeks to create an academic environment across all three schools of the college that is supported by the entire administration that promotes opportunities to engage undergraduate students in meaningful research and creative works in their disciplines to better prepare them for advanced degrees and careers. The desired outcomes/goal is to create in the short term, a bankable system of 1.0 credit load per academic year for faculty to receive reassigned time for undergraduate research activities. Strategies to achieve the outcome will be through
conversations with faculty engaged in research to build a coalition to buy-into the idea of a bankable credit system until the system can be sustained by some external grant. A leadership team would be responsible for how the achievement of outcomes will be assessed through consensus on the conversations held in place, plus the developed plan for the bankable system and finally meeting with the provost. The desired mid term outcome/goal will be to seek and obtain allocation of laboratory space for faculty engaged in research with undergraduate students. The strategy for achieving this outcome will be through faculty development particularly of new hires in a bid to influence change. Finally the long term goal would be to create a center for undergraduate research at the college through with research outcomes can be publicized and conduct grant workshops for the faculty.

**New York City College of Technology**

Major successes include (a) a dramatic increase in participation and (2) development of an infrastructure supporting both faculty and students. During the 2012-2013 our programs involved over 350 undergraduates conducting research. Prior to 2006-7 just a handful of students participated. Programs include NSF REU, NSF AMP, NASA CIPAIR and internally funded: Emerging Scholars, Honors Scholars, and the Black Male Initiative (BMI) – the only STEM-focused BMI within CUNY. To enhance student skills development and personal growth, and to create a community of student scholars, workshops have been offered each semester since fall 2010 by the Undergraduate Research Committee, an interdisciplinary faculty committee, for students in the internally funded programs. Topics include *Advancing Library Research Techniques, Writing Abstracts for Research Projects, Designing a Research Poster Presentation, Poster Design Workshop, and Developing and Delivering Effective Research Presentations.* Each semester culminates in a two-day, college-wide student poster exhibition, oral presentations by advanced students and an awards ceremony where outstanding projects are formally recognized. The college invested in two large-format poster printers so all student researchers would have the opportunity to prepare professional looking posters that could be used at regional and national conferences. The position of Director of Undergraduate Research was created in fall 2011. Faculty and students are actively recruited through Research Mixers during the poster session, and throughout the year. Student presentations at professional conferences and publications in peer reviewed journals have been tracked and continue to increase. As an additional layer of support, new faculty mentors receive mentoring themselves from the Undergraduate Research Committee. Major challenges include sustaining this momentum and expanding research opportunities through the laboratory classroom. We are looking for creative solutions on how best to incorporate authentic research experiences into the curriculum.

**Queens College**

Queens College, CUNY in the CUR Workshops (4/2012; 11/2013) developed five goals to enhance undergraduate research: 1) establishing a Queens College Undergraduate Research Committee (QURC) with representatives from all college divisions; 2) appointing a college-wide Director of Undergraduate Research; 3) documenting existing undergraduate research efforts on the college website; 4) highlighting undergraduate research in the College’s Strategic Plan; and 5) centralizing available research support and developing new resource streams to enhance existing programs. The main successes include expansion of local Mathematics and Natural Science (MNS) forums in which undergraduates present their research each Spring (Sigma Xi Research Day: 28 years, 50-90 posters annually) and Fall (MNS Undergraduate Forum: 2 years, 75 posters), increased peer-reviewed publications (2.5-fold) and national-international presentations (3.3-fold) with undergraduates as co-authors over the past decade, and increased undergraduate enrollment in Independent Research courses across divisions paralleling hiring of new research-oriented faculty. Major challenges include concentration of these successes to a few (Physics, Psychology, Biology) MNS-based departments, notably. Further, undergraduate research standards and local opportunities vary widely across college departments and divisions. We are looking for creative solutions in devising and consolidating existing undergraduate research programs under a unified leadership and employing “best practices” attractive to a wider academic audience. Our updated plans include: 1) new revenue streams to support undergraduate research; 2) faculty “buy-in” by incentivizing undergraduate mentorship; and 3) increasing student research involvement by incorporating authentic research experiences into the curriculum. Our goal is to create an undergraduate research environment that is pervasive, educationally-enriching, and transformative.
York College

York College is a primarily undergraduate institute with a highly diverse population in an urban setting. Undergraduate research flourishes at York, in part, because of limited access to graduate students. York has achieved several successes in undergraduate research including the development of a central office with an appointed director, an annual research day featuring nearly 300 student presentations, a summer research program, an honor’s program, and a series of lectures in various disciplines. York faces several challenges including the lack of a strategic plan, limited coordination with administrative divisions, no sustainable budget, few student scholarships, few publications in undergraduate research journals, and no college-wide curriculum plan. In addition to these issues, we are looking for creative solutions to fund our program, considering York has relatively few federally sponsored investigators. Our future strategic plan will include many improvements. We are developing specific plans for marketing and assessment. We will improve faculty awareness via the Center for Teaching and Learning, white papers on key topics, the website, and meeting with department chairs. Grant writing and faculty contributions will be recognized with reassigned time and credit toward tenure and promotion. We plan to fund students using federal work-study programs. We are working to develop a student community of research using student government, a research club, lectures, and social media. We have also started to develop connections with 2-year colleges to insure transfer students get research opportunities.

Council of Public Liberal Arts Colleges (COPLAC)

Twenty-three of COPLAC’s 27 campuses were members of the initial CUR Workshop grant in June 2011. The main success for COPLAC since the completion of the June 2012 follow-up meeting of team leaders involved a transition to official LEAP partner status with AAC&U. We sought to maintain workshop momentum by identifying undergraduate research as our LEAP high impact practice. The LEAP project calls for (1) submission of semi-annual campus progress reports to be featured on the COPLAC website; (2) sharing of faculty expertise through electronic and in-person consultancies; and (3) sharing of best practices in the area of assessment. The major challenge facing our consortium involves follow-through on the LEAP commitment. We receive regular progress reports from approximately 50 percent of the member campuses. Our effort to share expertise has not yielded significant results, and the assessment piece has yet to be addressed. Individual campuses have reported a range of new initiatives and program enhancements in undergraduate research, but we are looking for creative suggestions/solutions to the ongoing challenge of maintaining momentum with our LEAP project. Unlike state systems, our consortium-wide initiatives rely entirely on voluntary engagement coordinated by a two-person central office. Our updated plans include a COPLAC Board-designated consortium-wide project on civic learning/civic engagement during 2014-2015. Campus leaders (faculty and professional staff) will attend a planning meeting at UNC Asheville in early June 2014, and an undergraduate research component to the civic learning/engagement initiative may be one way to re-energize our collaborative work.

Eastern Connecticut State University

Eastern’s successes in advancing Undergraduate Research (UR) relate to institutionalization and resource allocation. We created a UR Council with representation from all departments, a UR web site featuring students’ work, their mentors, and links to relevant scholarship and fellowship information, a system of incentives to promote incorporation of UR in academic programs and hiring guidelines that emphasize UR. Excellence in UR is now recognized with the appointment of UR Fellows and by UR Mentor awards. With a broadened definition of UR that encompasses work in all majors and a common set of learning outcomes, students in all majors can now get Liberal Arts Work designation on their transcripts after completing approved UR projects. Resources allocated to support UR allowed appointment of a UR Coordinator on reassigned time, creation of a summer UR program, and support for student research and presentations at off-campus conferences. Continuing challenges include incorporating UR into campus culture and into the curriculum in all majors, identifying faculty mentors in all departments, effective faculty development to equalize UR activity across programs, and accommodating faculty who have “banked” credits for mentoring UR. We are looking for solutions to streamlining the curriculum to incorporate UR options for all students without
increasing time to degree, providing effective faculty development and rewarding UR in promotion and tenure. Our updated plans include merging separate on-campus UR conferences, forming a UR Club to access student activities fees and provide related programming, creating a monthly UR Newsletter and establishing a transcript designation of Research Distinction.

Georgia College and State University
Georgia College is a member of the COPLAC Consortium that initiated the project as early as 2010. 1. The main successes we have achieved include (a) a Quality Enhancement Plan (institutional accreditation plan) focused on building a culture of engaged learning; (b) 2012 UR action plans and 2014 plan updates by 11 academic programs (art, biology & environmental science, chemistry, education, english, government & sociology, kinesiology, marketing, mathematics, physics, psychology, theater); (c) $100,000 per year budget for UR; (d) hiring of a URACE Coordinator and faculty coordinator; (e) creation of a URACE Office; (f) implementation of a URACE Grant Program; and (g) the development of a mentoring handbook. Major challenges we are facing include (a) institutionalization efforts that focus on maintaining the enthusiasm generated at the Spring 2012 URACE Symposium; (b) truly integrating UR into the curriculum; (c) developing faculty mentoring reward/compensation models; (d) systematic inclusion of non-STEM faculty in UR. We are looking for creative solutions on (a) how to make UR count towards teaching load for directing UR during semesters and summer; (b) emphasizing the critical link between good classroom instruction and UR; (c) helping departments reach consensus on UR participation as a PUI. Our updated plans include (a) a university-wide dialogue of strategies tried, implemented, or rejected; (b) meetings with individual departments to assist with barriers and creative solutions; (c) fostering cross-disciplinary collaborations (d) inventory of what we currently have and assessment; and (e) PR, recognition, and celebration. We are grateful to CUR and COPLAC for this opportunity.

Midwestern State University
While work is still left to institutionalize undergraduate research (UGR) at Midwestern State University (MSU), our main successes include a fruitful retreat attended by 40 faculty members from all the colleges and by the administration. The retreat led to the identification of several desirable outcomes, including 1) institutional support, 2) faculty and student incentives, 3) interdisciplinary collaboration, 4) culture of learning where teaching equals research, and 5) integration of UGR into the curriculum. Following the retreat, undergraduate research became the central pillar of the QEP for our SACS accreditation. The QEP was adopted in the Spring of 2013 and an Office of Undergraduate Research was established. The existing UGR program in the COSM, UGROW, was sustained and expanded, and the new UGR program, EURECA was created. The QEP also included a new Undergraduate Research and Creative Activity Forum. Faculty and students participation from all Colleges has not been achieved. Communicating opportunities and incentives for both is a remaining challenge. Equating undergraduate research mentoring with teaching and integration of UGR into the curriculum remain to be addressed. A retreat to identify obstacles and offer solutions to encourage campus-wide participation is being developed. Bringing to the retreat an existing model to spark discussion and generate ideas is proposed. A second retreat, engaging students, faculty, Deans, and Administrators, would address the issues of equating UGR mentoring with teaching. Our future plans are currently focused on integrating research perspectives into the curriculum across all disciplines, and further encouraging inter- and cross-disciplinary research and creative activities.

Shepherd University
Shepherd University has achieved successes at different campus levels that include: Establishing and charging an Undergraduate Research (UR) Task Force; Adoption of CUR’S definition of UR; Gathering baseline information about the types and amount of UR across campus; Faculty and student participation in COPLAC’s distance UR mentoring project; Developing an electronic, multi-modal UR journal; Departments continue to schedule UR days for majors; Student across campus continue to publish their work in regional and national journals; The School of Natural Sciences and Mathematics received an EPSCoR award to support UR; Students continue to make award winning presentations at the West Virginia Academy of Science Annual Meeting (recipients every year for the past three years; swept awards in 2013); and Computer Science, Mathematics, and Engineering students routinely place
in the top ten teams in international robotics competitions. While progress has been made in enhancing and growing the culture of undergraduate research challenges include: Identifying and securing funding for faculty mentors, students, and research supplies; The best ways to recognize the efforts of faculty serving as UR mentors; Establishing a campus-wide UR celebration; and The lack of a designated Director of UR. As a means of overcoming the challenges while continuing to build on successes we are looking for creative solutions to: Officially include mentoring UR in promotion and tenure decisions; Move away from disperse celebrations of UR to a cohesive campus-wide celebration; Maintaining an electronic UR journal; and Continuing to advance UR with limited funding in an ever changing fiscal landscape in higher education.

**St. Mary’s College of Maryland**

St. Mary’s successfully revived a summer research program. In 2012, ten students representing ten disciplines engaged in research with a faculty mentor. Students and mentors participated in weekly professional development workshops and a research symposium. The program was repeated successfully in 2013 and is funded for 2014. We seek creative solutions for external funding of the program, including pursuing a multi-institutional grant for a research exchange program among COPLAC schools. St. Mary’s also succeeded in creating a full-time position for a director of research and sponsored programs to support and encourage faculty grant writing. Major challenges facing St. Mary’s center on the scarcity of resources. For instance, the summer research program likely will lose internal support after 2014. Although undergraduate research flourishes at St. Mary’s, it is disguised by its many forms. The nature of individual research focuses the student’s and mentor’s attention on their own discipline, leaving too little opportunity to consider the intellectual engagement taking place between students and mentors in other disciplines. We are seeking ways to celebrate, and make more visible, the diversity of undergraduate research at St. Mary’s. Our action plan remains committed to four goals: 1) document and publicize undergraduate research across campus, 2) seek support from a new president for undergraduate research, 3) maintain the summer research program, and 4) promote undergraduate scholarship in the first two years, not just for the capstone “St. Mary’s Project.”

**Great Lakes Colleges Association (GLCA)**

The Great Lakes Colleges Association is a consortium of thirteen private liberal arts schools in the Midwest. Ten GLCA schools attended the CUR STEM undergraduate research workshops held at Kenyon College in July 2012 and The College of Wooster in July 2013. Participation in the workshops had a positive impact on the participating campuses: Completing the self-study gave each campus the opportunity to think critically about their goals for undergraduate research, how well they were doing with respect to those goals, and where they would like to improve; That process was the catalyst for conversations on each campus across the faculty and between the faculty and academic administration about goals and mechanisms; and Specific successes include expanding participation beyond STEM; producing guidelines for tenure and promotion; improving tracking of UR participation; aligning curricular goals with UR skill development; and, producing more coordinated UR programs. Ongoing challenges: Encouraging greater participation across academic divisions; Developing a system that recognizes and rewards the roles faculty play in mentoring UR; Funding to support expanded participation; and Embedding meaningful UR opportunities in the curriculum. There were two significant successes at the consortium-level: Sharing between campuses resulting in an awareness that we have common problems and can benefit by sharing solutions; and The creation of an Undergraduate Research, Scholarship, and Creative Activity Advisory Board with a representative from each GLCA campus. The ongoing challenge for the consortium is how to build successful, sustainable collaborations. GCLA faculty know that they would gain by sharing, but finding the time and producing a structure within which sharing can be easily and productively done is difficult.

**Albion College**

Undergraduate research has been centrally supported at Albion College for many years through the endowed Foundation for Undergraduate Research, Scholarship, and Creative Activity (FURSCA). Students from all disciplines participate in a variety of programs that support student participation as early as the first year at Albion. Student proposals are reviewed by the faculty/student committee that awards funds for summer fellowship sup-
port, supply money, and travel funds. The result of our traditionally strong institutional support for independent undergraduate work has been Albion's outsized number of student presenters in regional and national conferences, a robust annual symposium of undergraduate presentations that takes over the campus every spring, student/faculty coauthored publications, and a strong senior thesis program. Our main successes since our participation in the CUR/GLCA program include: (1) faculty support and student participation numbers remain robust overall and have increased beyond expectation in our two largest programs, and (2) we successfully added language to the faculty handbook (on tenure and promotion) to reward faculty for participation in undergraduate research. Our majors challenges include: (1) we have had increased participation in FURSCA programming but have not had corresponding increases in our operating budget. We have, however, found ways to leverage support from external grants and other sources, (2) we would like to see an increase in the number of students who produce outcomes (theses, publication, presentation, etc.) from their work, and (3) we are continually looking for ways to make sure our processes for application and support are as efficient as possible so not to burden faculty with undue extra work and yet insure the student-faculty partnerships are sufficiently prepared for a successful FURSCA experience. We are particularly looking for creative solutions on ensuring ongoing faculty participation and improving our application procedures. It is part of our updated plan to address these issues.

Allegheny College
Since attending the CUR GLCA workshops, Allegheny College has changed the name of our Office of Undergraduate Research to the Office of Undergraduate Research, Scholarship, and Creative Activities (URSCA) so as to be more inclusive of student research in non-STEM disciplines. We have also formed an URSCA committee that meets twice each semester to focus on campus-wide URSCA initiatives. The major URSCA committee initiative was to start the process of expanding the language of our tenure and promotion guidelines to include faculty participation in undergraduate research and other activities. Our Faculty Council is currently gathering information from departments to determine their views and participation in these activities. The goal is to have a campus-wide discussion on this issue, draft new tenure and promotion handbook language, and vote on this new language during the 2014/2015 academic year. We anticipate that this initiative will be difficult and challenging as it represents a major shift in the way we define faculty scholarship. We seek guidance from other institutions that have successfully navigated this issue. We would also welcome input on other URSCA committee initiatives that include: 1) an examination of our summer undergraduate research program to determine ways to enrich the students' summer research experience, 2) an investigation of effective strategies to track student participation in research both on- and off-campus, and 3) determining ways to better match underrepresented minority students with faculty research projects available during the academic year or summer.

DePauw University
First, we have made significant progress in promoting our UR opportunities. We launched a new UR website that advertises campus UR opportunities, answers common questions, and provides contact information for students to learn more about UR opportunities. We also made a UR flyer that was shared with students who attended DePauw's Sophomore Institute in August, 2013, and the flyer was also shared with first year students during Fall 2013 “First Year Seminar lunches.” We are also staffing a UR table at an upcoming Admitted Students Day. Finally, a new high profile award has been added to DePauw's Awards Convocation to recognize the senior who has had the most significant scholarly/artistic achievement during his or her time at DePauw. Second, the CUR GLCA STEM workshops have stimulated a great deal of beneficial discussion among faculty on campus. We invited Jenny Shanahan to campus in Spring 2013 to lead two workshops on UR with an emphasis on viable models for Humanities and Social Science faculty to mentor UR. We established a STEM brown bag lunch that has facilitated a broader discussion of DePauw's science curriculum, especially our learning goals for non-science majors. We have also contributed significantly to major curricular revisions to our science honors program (Science Research Fellows). We are currently trying to improve our methods for tracking and recognizing the variety of UR projects that occur on and off campus, and as DePauw revises its Winter Term/Extended Study requirements, we hope to promote some intensive UR experiences as partial fulfillment of those requirements.
Hope College

Hope College has developed an outstanding program of student-faculty collaborative research. Even so, Hope College continues to work on ways to strengthen the research programs, both during the academic year and during the summer. First, we aim to increase the overall coordination and unification of our summer research programs. In recent years, our campus has had several distinct communities of summer research participants, the natural and applied sciences, the social sciences, and the arts and humanities. We are making our summer research programs more cohesive and unified by hosting an all-campus weekly seminar series called “Faith and Scholarship”, hosting one celebratory banquet, and working with campus housing to intermingle students from different disciplines in on-campus summer housing. Second, we are considering ways to increase funding of summer, student-faculty collaborative research. We are engaging in campus-wide conversations about the resourcing and sustainability of the summer research programs. As NSF-REU money gets tighter and other sources of funding for such programs is much more difficult to secure, we need to be more creative and intentional for ways to provide funding for these vital programs. Finally, we are working to embed more authentic research experiences into courses across the curriculum, from introductory to upper-level offerings. Current efforts include partnering with Hope’s HHMI program for course-based research experiences to develop entirely new courses as well as modules within existing courses.

Kenyon College

Collaborative student-faculty research is integrated into the Kenyon College curriculum through various types of research courses and senior exercise projects. These collaborations are also found outside the classroom through independent research during the academic year and the Kenyon Summer Science Scholars (KSSS) and Summer Socio-Legal Scholars programs. Kenyon recently and successfully expanded these same opportunities to include those in the humanities and social sciences, with plans for even further expansion in the future. We were also successful in getting approval to conduct a self-study of the KSSS program for an external review this spring. We hope to receive feedback on ways to enhance the experience for both faculty and students. We made progress in improving communication between faculty and staff regarding assistance with obtaining external funding. A dedicated website was created to help faculty and staff best navigate these often lengthy and complex processes. With these successes come a few challenges. As undergraduate research expands, we are finding it increasingly difficult to financially support and coordinate these research experiences across campus. Therefore, we are looking for creative solutions on how to provide and coordinate quality research experiences for all faculty and students who want to participate. Additionally, many disciplines are finding it difficult to determine how these experiences fit in the promotion and tenure processes. Since our current focus is on the enhancement and expansion of the summer research program, it is likely that the completion of the self-study and subsequent review will present us with many new ideas.

Wabash College

The main successes we have achieved include… a new statement in the Academic Bulletin about how Wabash values Undergraduate Research, Scholarship, and Creative Work (URSC), suggestions for modifications to the faculty handbook to discuss URSC when submitting materials for faculty reviews, new poster stands, and a new position on campus of Institutional Researcher. The College was recently awarded an NSF S-STEM grant to support a community of students in the physical sciences – one goal of this project is to engage prospective science students in the scientific research process as early as possible in their college career through pre-enrollment internships, an innovative research-focused freshman seminar course, and subsequent immersion in the culture of scientific research. Major challenges we are facing include… funding for all the students who want to participate in summer research. We are looking for creative solutions on… student summer internship funding. Our updated plans include… evening the barriers to faculty wishing to engage undergraduates in research across the disciplines, and rewarding faculty in tenure and promotion for those efforts. A first attempt at reworking the T&P guidelines to highlight the significance of undergraduate research is stalled and we hope to restart those conversations. We would also like to create more community-building experiences for summer researchers across academic departments.
The rationale for the involvement of the Pennsylvania State System of Higher Education (PASSHE) in a system-wide initiative for undergraduate research was to increase the numbers of students attaining credentials that prepare students for career and life success. The link between increasing the number of degrees and assuring the quality of the credential through the use of high impact practices was intentional. The specific attention to increasing opportunities for undergraduate research was based on data from other systems and connected several key system-level efforts: Increasing the opportunities for students to participate in distinctive educational experiences, especially lower income and underrepresented minorities, would increase student success and graduation rates (performance funding metric) as well as student retention (tuition revenue). What emerged was often a more comprehensive inventory or self-assessment of undergraduate research experiences at the universities. Many were surprised at the extensiveness of the opportunities for students but most had not drawn those activities into a more comprehensive system. With the attention to undergraduate research alliances were being formed across the campus. In some cases this led to increased opportunities for students to present research in a variety of venues including one conference at the system-level. A number of challenges also surfaced in the self-assessment including “what counts” as undergraduate research and how does one capture or measure both the nature of the experiences and the number of students participating. We are looking for creative solutions on how to effectively incorporate research experiences into the curriculum such that opportunities are presented to a wider range of students, especially under-represented minorities and lower income students. Fundamentally the question is how to effectively scale up what may be individual opportunities across the campus. Our updated plans include system-wide monitoring of undergraduate research efforts and increased visibility of these efforts through the inclusion of undergraduate research as a performance indicator for several universities.

California University of Pennsylvania

The main successes we have achieved include: Established a President’s Task Force on Undergraduate Research and made recommendations to enhance undergraduate research; The Task Force stimulated a sense of urgency and generated interest in undergraduate research through campus-wide presentations and surveys; Established a Center for Undergraduate Research and appointed a faculty director with load reduction; Committed a team to participate in the CUR Integrating Undergraduate Research in the Curriculum Institute in March 2014; Redistributed 79% of all grant indirect costs/overhead for reinvestments in growing a grant-writing culture; Re-established a fellowship program that trains individuals to write and develop competitive proposals for sponsored research and programs; and Secured permission to redirect some work study and graduate assistants positions to support undergraduate research. Major challenges we are facing include: Gaining campus-wide agreement on a definition of “research” across all disciplines; Keeping all interested parties engaged in contributing to a sustained effort; and Uniting previous efforts under the new Center for Undergraduate Research. We are looking for creative solutions on: Finding funding to develop a summer undergraduate research program; Faculty FTE-neutral (or low-growth in FTE) methods of growing the number of research-intensive undergraduate courses across disciplines; and Establishing a comprehensive assessment system with meaningful metrics and techniques for measuring and evaluating undergraduate research efforts. Our updated plans include: Establishing an Undergraduate Research Advisory Council and Establishing an undergraduate research measure for PASSHE’s performance funding system.

Clarion University

Accomplishments in our efforts to establish a culture of undergraduate research at Clarion University include opening an Office of Undergraduate Research with faculty director and budget. We have increased the funding for student grants and participation of more non-STEM disciplines. In February 2013, we hosted a workshop with Dr. Jeffrey Osborn, which raised visibility of undergraduate research on campus and identified several potential initiatives, such as experimental courses outside of RCM. Spurred by the positive impact of this workshop, a follow-up will take place this February. We face many major challenges in our efforts. A faculty survey associated with HIP appears to indicate research is not a high priority and not all disciplines are convinced of the effectiveness of undergraduate research. We need to gain more administrative support in areas such as grant-writing and experimental courses and need to establish deeper integration with efforts across the PASSHE system. In a time of
economic challenge at our university, we are looking to find creative solutions to develop funding programs to support undergraduate and faculty/undergraduate research. In addition, faculty must be assured there is administrative support to develop efforts involving undergraduate research. Our updated plan includes strategies to integrate research, scholarship and creative activities across the curriculum through a four-year scaffolding plan and as a formal component of the first year experience, thus providing students with opportunities for professional engagement in their fields. We wish to develop a grant writing culture and educate faculty on the pedagogy of mentoring related to student engagement in research.

Indiana University of Pennsylvania

IUP’s Successes: New University Vision Statement emphasizes importance of original research and scholarship; College of Natural Sciences and Mathematics (CNSM) Strategic Plan now formally emphasizes enhancing and supporting undergraduate research (UGR); New informal monthly discussion group provides venue for sharing ideas about UGR in CNSM. Gatherings draw > 20 faculty attendees; Completed CNSM Faculty Survey of UGR: shared with CNSM and discussion group; UGR Committee expanded to include each CNSM department and the Assistant Dean for Research; Worked with the Foundation for IUP to prioritize UGR fundraising; Initiated creation of a student research/scholarship handbook; and Observed increase in student research experiences across CNSM. Challenges For Which IUP Seeks Creative Solutions: Funding, faculty time commitments, student involvement, entropy, interdisciplinary major grant writing, and university-wide communication; Broadening efforts to encompass UGR across the university; Promoting wider faculty buy-in for UGR and the benefits of involving undergraduates in that work; and Responding to the evolving and expanding research culture at IUP.

IUP’s Updated Plans: Continue developing funding sources for UGR grants and faculty teaching release time to coordinate UGR opportunities; Continue coordinating discussion groups and expanding our reach university-wide; Intentionally work towards translating CNSM model university-wide; Conduct the next year of our CNSM Faculty Survey and expand university-wide; Participate in discussions to identify solutions to give faculty more UGR mentoring time; and Create and maintain a website focused on UGR opportunities and accomplishments in each college.

Lock Haven University

Our principal successes at Lock Haven University (LHU) involve steps taken to institutionalize Undergraduate Research (UGR) including i) an annual University-wide Celebration of Scholarship event that focuses on UGR, ii) incorporation of UGR into some degree programs (Applied Physics, Psychology), and iii) a revised General Education program that promotes UGR through Critical Thinking and Experiential Learning outcomes. Individual faculty and programs have also been successful in obtaining federal and state grants that support student research. These efforts have contributed to large numbers of independent studies within the STEM and health related disciplines (n=149, AY12-13). The major challenge we face is how to increase the number and depth of UGR experiences when faced with shrinking budgets, limited time for research during the academic year and financial constraints on student research during summer. Additionally, we need to expand UGR into non-STEM disciplines and assess the impact of UGR on student learning and success. Our plans include i) working with the LHU Foundation to secure funds for UGR experiences during the summer, ii) establishing UGR Colloquia for different disciplines, and iii) increasing numbers of external grants and contracts awarded to LHU faculty. The LHU Foundation is developing a case for support and the administration recently incentivized grant writing by returning 25% of indirect costs to the PI(s). The UGR Committee will also work with the Outcomes Assessment Committee to assess the impact of UGR experiences on critical thinking skills and post-graduate success.

Mansfield University

We are attempting to develop a culture at Mansfield University that encourages and rewards research cooperation between undergraduates and faculty in all departments and at all levels of the curriculum as an integral part of a liberal arts education. We began our efforts by presenting and discussing our plan with other faculty. Our main successes we have achieved include: Establishing a fairly successful annual Scholarship Day where students present their research and scholarship projects to both students and faculty; Establishing a Faculty Seminar Series directed towards undergraduate students where faculty from a variety of disciplines present and discuss ongoing research; Incorporating a
research component in all of our First Year Seminars and developing a Scholarship Day for these students; and Working with admissions to attract high quality students for our Freshman Research Program which will start in the Fall. Major challenges that we are facing include: Acquiring funds to support undergraduate research, to send students/faculty to present research at conferences, and to support our Freshman Research Program; Getting all disciplines to participate in Scholarship Day and increasing the quality of the research and the presentations; Increasing the attendance at the Faculty Seminar Series; and Increasing the quality of the research experience for First Year Seminar students. We are looking for creative suggestions to help us develop a successful Freshman Research Program, a Human Participants Pool, a mid-level research methods course in all academic programs, and eventually an office of Undergraduate Research.

**Millersville University**

Develop a culture of inquiry across all disciplines by infusing genuine research experiences throughout all undergraduate curricula beginning very early in the college years. The main successes we have achieved include …Five STEM departments have developed new freshman year inquiry courses, all with some element of experimentation; Continue to ascertain the possibility of leveraging our Center for Academic excellence to provide faculty with information and professional development. Major challenges we are facing include …Developing a shared university vision for undergraduate research; Faculty time to develop and implement additional research experiences; How to maintain a university environment that nourishes and fosters the advancement of undergraduate research; and The current contract gives no instructional load for directing undergrad research, which is at least as demanding as teaching a regular course. Our 24 hour teaching loads discourage faculty involvement in undergrad research, especially at the assistant/associate professor level where research productivity is expected for promotion. We are looking for creative solutions on …Continuing to reinforce the importance of undergraduate research: How to include undergraduate research in “Performance Measures” (ie., PASSHE Performance Funding Program); and How to include the importance of undergraduate research in our Strategic Plan. Our updated plans include …Inventory of Schools/Departments (ie., Survey); Establish an undergraduate research office; Establish a summer undergraduate research program; and Maintain connections with CUR facilitators /training.

**Shippensburg University**

Successes: The Advisory Council for Undergraduate Research has drafted two proposals for integrating undergraduate research throughout the culture of Shippensburg University. The first proposal highlights a curriculum and faculty workload model for undergraduate research, and the second proposal requests the establishment of a Center for Student Research Office. Other successes include the Student/Faculty Research Engagement grants, that provide funding for research during the academic year, and the Summer Undergraduate Research Experience, which provides funding for summer research. Challenges: The main challenge at the University is funding for the faculty workload model and the Center for Student Research Office. Creative Ideas: We are looking for creative ideas on how to promote undergraduate research beyond the University and how to engage the local community and businesses.

**Slippery Rock University**

Successes for Slippery Rock University (SRU) can be described in three areas: internal infrastructure; creation and mentoring of an at-risk cohort of undeclared freshmen with science potential; and hosting a Pennsylvania State System of Higher Education (PASSHE) Undergraduate Research Conference in STEM. A center for Undergraduate Research in STEM was created with a coordinator and a graduate assistant. The coordinator identified how many undergraduate STEM students had successfully presented or published in peer-reviewed venues and the team held research socials and created grant opportunities. Twenty exploratory at-risk incoming freshmen with high SAT and class standing were identified and placed in a cohort. This cohort was taught by select faculty who have a history of excellent student success rates and who were passionate about these students succeeding. They were kept together Spring semester (2014) in a Freshmen Research and Mentoring Experience (FRAME) class. Lastly, we hosted PASSHE’s Inaugural Undergraduate Research Conference in STEM in November 2013. There were over 92 submissions from 125 unique students. The submissions came from 13 of our 14 State System
universities and involved 65 faculty advisors. Our challenges include continued funding needs, declining enrollment as we strive to increase STEM graduates, visibility through public relations at the local and state level, and recruitment and retention of minority students. These are also the areas where we seek creative solutions. Our updated plans include continued monitoring of the at-risk pilot group, increasing visibility by celebrating student researchers, and hosting the second annual PASSHE conference in 2014.

**West Chester University**

One year ago, the West Chester University-Council on Undergraduate Research (WCU-CUR) was a small college-based committee with great aspirations, with practically no funding or administrative support. In the interim, there have been university-wide elections held to create a truly representative and engaged Council. With this new representative voice, the WCU-CUR set two goals for the remainder of the academic year. The first goal of the Council was to launch the institution's first Summer Research Institute, which just recently was supported by the Council of Deans for temporary funding. The second major goal of the Council was to gather baseline data on the state of faculty-student undergraduate research, which would be accomplished through the distribution of a faculty-wide survey. Summer Research Institute and Undergraduate Research Survey - West Chester University (WCU) Undergraduate Research Fellows (URF) will spend 4 weeks during the summer session conducting research and scholarly/creative work that is supported by a community of faculty mentors. The Summer Research Institute (SRI) is designed to allow current WCU students to pursue a significant research question, contribute to a scholarly endeavor, or to produce an artistic or creative work, while being mentored by a WCU faculty member. Importantly, this effort parallels the university's new strategic plan Building on Excellence. The strategic plan also calls for new information and data related to faculty-student research. To this end, the Council has completed the final draft of a faculty survey designed to elicit new information regarding faculty-student research. The final survey will be distributed in the coming weeks, and the data will be analyzed soon after its collection.

**University of Wisconsin (UW) System**

The University of Wisconsin System, in partnership with our 13 four-year universities, has a long-standing history of promoting research accomplishments, as well as opportunities for new research, to larger numbers of our students. The UW System Symposium of Undergraduate Research and Creative Activity has been held annually since 1999. This year, the UW System will host the 11th annual *Posters in the Rotunda* event to showcase UW System student-faculty research being done across the state. More than 10 years ago, a systemwide office of intellectual property, WiSys, was established to provide patenting counsel to the comprehensive institutions of the UW System. Cumulatively, this work has resulted in creating a number of top-level advocates for undergraduate research who speak publicly about research, fostering successful undergraduate research programs, and the importance of investing in such programs. The UW System and its governing board recognize that undergraduate research is the “new currency,” with calls at the federal level for colleges and universities to provide more undergraduate research experiences as a strategy to meet workforce needs, especially within the STEM fields. As a result, the Research, Economic Development and Innovation (REDI) Committee of the UW System Board of Regents has engaged in efforts to create new pathways for research and economic development between the undergraduate research programs at our universities and regional and state industries, community and governmental agencies, and private organizations. Discussion in this session will focus on strategies implemented to create statewide networks, both internal and external to the UW System, beginning with a supportive institutional commitment, the development of a new Regent Scholar Program, building alliance with the Wisconsin Council for Undergraduate Research (WisCUR), and promoting professional development for faculty mentors. The session will conclude with future steps and participant input and questions.

**UW–Eau Claire**

Successes achieved: Survey of faculty perceptions about when, where and how URSCA takes places, how much is 1) embedded in the curriculum, 2) student vs. faculty-initiated, 3) process- or product-focused (50% participation); surprising similarities found across disciplines; Targeted counting methods reveal: steady (5x) increase in URSCA participation over 20 years from increase in faculty and number of students per project, 37% of 2012
graduates experienced in-depth research and minority students participate in URSCA at rate higher than parity; Surveyed students, alumni on perception of gains from URSCA experience; Two departments piloting models for incorporating collaborative scholarly activity into faculty workload; Faculty learning community reviewed mentoring literature, developed description of mentor skills/attributes and Expanded format options at student research presentation day. Major challenges: Losing momentum in flexible workload initiatives with changing leadership; Campus energy directed towards implementing liberal education core; and Demand for student research funding exceeds supply. Looking for creative solutions: What are conditions critical to sustain/expand URSCA initiatives?; How best to assess and transcript out-of-class URSCA experiences so they count within student and faculty workload?; and How do we distinguish between more traditional, full URSCA experience and scaffolded in-class skill-building research experiences? Plans for the future: Share piloted departmental workload models across campus; Customize survey on student perceived gains; Survey earlier group of alumni; Create web resources supporting professional development in mentoring; Develop Excellence in Mentoring award; Run mentoring learning community based on the previous reading group’s work; Increase research presentation day audience; Employ social media to improve student communication; and Develop fund-raising plan.

UW–Green Bay

The main successes we have achieved include identifying existing URSCA opportunities and interests on campus. There is now one website that includes stories of successful projects funded through internal dollars, many of which include undergraduate student participation. As part of the reform in general education requirements, some departments will incorporate URSCA opportunities as part of a student’s capstone experience. Major challenges we are facing include developing a plan for compensating faculty for participating in URSCA and creating an institutional infrastructure to promote and support URSCA. Given limited resources, we are also asking: Which students are offered the opportunity to participate in URSCA activities? Only the top 10%? Those in the middle who may or may not pursue research? For all majors, or only targeted, high-demand disciplines? We are looking for creative solutions on how to best inform the campus community about the goals, benefits and best practices of URSCA as well as how best to formally recognize students and faculty who are participating in URSCA. We are also interested how to best utilize a newly planned research park near our campus for student research and internship opportunities. Our updated plans include the completion of an Institutional Change grant proposal that would establish an undergraduate research office at UW–Green Bay that would act regionally to connect students and faculty with not only our campus but two nearby two-year colleges. Plans include the creation of an electronic student research journal and an annual regional student research symposium.

UW–La Crosse

The University of Wisconsin-La Crosse has had a number of successes, including the creation of new programs. The main successes we have achieved include the development of the Eagle Apprentice program, which matches incoming students with a faculty mentor. The student receives $1000 the first year and $2000 their second year as an incentive for recruitment and retention and the faculty mentor gets a paid assistant. Another success is the newly developed Policy Research Network. This program was created to help undergraduates conduct research and prepare reports for civic leaders. The goal is to provide students with valuable real world experience and strengthen ties with civic leaders. The Policy Research Network asked area civic leaders for topics they were interested in learning more about. Nearly three dozen ideas have been collected from elected representatives and county administrators. We still face a number of challenges. The biggest is finding mentors for all of our students due to time and financial constraints. We are exploring creative solutions on ways to fund student projects and support faculty mentors. Our updated plans include looking into: an interdisciplinary research course to give faculty mentors and students formal credit for these activities, ways to involve more international students in collaborative research activities, and good models for course embedded undergraduate research projects.

UW–Madison

We have had several successes. We created a campus committee to advance undergraduate research, scholarly and creative activities (URSCA). The committee surveyed faculty and scientists to inventory reasons they mentor
URSCA, obstacles they face, and suggestions to increase mentor participation. A URSCA mentoring award will be launched this spring in each of the four divisions: biological sciences, physical sciences, social sciences, humanities. We also created a campus web site, a central hub for students to learn about URSCA opportunities, resources and more, and encourage cross-campus linkages. Numerous existing events, programs and courses have continued or increased participation: campus wide Undergraduate Symposium, URSCA Fellowships/Scholarships, McNair Scholars, Summer Research Opportunity Fellowship programs, discipline-specific research-focused courses, and a research course for early undergraduates. URSCA is widely recognized as a high impact practice fundamental to the UW-Madison experience. Our challenges and needed solutions include how to reward URSCA mentoring in the promotion and tenure process at a large R1 public institution, and how to recognize and expand mentor participation in the humanities and performing arts. We also want to expand and support participation of traditionally underrepresented students in URSCA. We plan to implement the web site and mentoring awards this Spring. We hope to expand participation of UW-Madison students in the UW System annual Symposium. We aim to increase recognition of, and participation in, URSCA in the humanities and performing arts. For STEM disciplines, we plan to incorporate a “science front door” program, including outreach to K-12 schools serving students underrepresented in higher education.

UW–Milwaukee

The University of Wisconsin-Milwaukee has made substantial investments in expanding undergraduate research activity across the campus. Our university is in some ways uniquely situated within the state to provide undergraduate students with high-quality research experiences. Because of the university’s focus on becoming a top-tier research university while providing access for the most diverse student population in the state, the university has paid close attention to discussions about how “high impact practices,” like participation in faculty research, can help our students persist, flourish, graduate, and be better prepared for the work-force or graduate-level research. The Office of Undergraduate Research (OUR) has funded new faculty lines in critical areas around campus and provides resources to faculty and students to support collaborative work. Every year we provide hundreds of students with funding to work as research assistants to faculty. We also run a pre-freshman intensive research experience, provide resources for students both to participate in research activities in the US and abroad as well as to present the results of their work at national disciplinary conferences and annual campus-wide, system-wide, regional, and national undergraduate research symposia. Nevertheless, the more we engage students in meaningful research activities, the more we realize we must find ways to expand the opportunities to more students, and going forward, we want to have a stronger curricular presence. We want to learn about new innovations in genuinely “inquiry-based” coursework, and we are eager to discuss intellectually rigorous approaches to assessment.

UW–Oshkosh

The main successes we have achieved include: 1) developing a new brochure for URSCA committee members to have in hand while visiting departments and divisions; 2) increasing the release time of the Chair of the Campus URSCA committee from 1/8th to half time to direct a new URSCA office; and 3) increasing administrative staffing for this effort from ~70% to full-time, as well as hiring an LTE communications specialist. The major goals of these changes are to better coordinate and publicize URSCA activities (student research grants, travel funds, on-campus student research day, UG research journal) as well as pursue additional long-term funding sources. The major challenges we continue to face are: 1) personnel to oversee and coordinate all these activities; 2) finding adequate ongoing funding for student research grants, student travel, our on-campus student research day and UG research journal; 3) tracking of URSCA activities on our campus; and 4) making sure students, staff and faculty are aware of the URSCA opportunities on our campus. One particular problem we have not solved is a good way to do judging for awards at our annual on-campus student research day. Our near-term plans include: 1) the official opening of our URSCA office this coming summer; 2) a concerted effort to ask alumni of URSCA activities to support these programs with donations; and 3) coordinating visits to departments and campus divisions by members of the URSCA committee to help publicize URSCA opportunities on campus and get feedback on where help is needed.
UW–Parkside

UW–Parkside has achieved success in key areas related to URSCA advancement. We identified and documented URSCA already happening on campus. This helps us celebrate the foundation of activity that we already have, and gives us a baseline for how to define future progress. We made sure that language about URSCA as a high impact practice was included in UW–Parkside’s most recent university-wide Academic Plan. We have also identified URSCA activities that need improvement, and sought examples of best practices from other institutions (within and outside the UW-System). We have developed strategies to solidify and expand undergraduate research on campus, so that URSCA activities will be “institutionalized” and can impact more students. Major challenges include resource limitations (funding, time, administrative support), as well as varying definitions and expectations for URSCA across campus. Because a large number of UW–Parkside students are nontraditional students or work many hours off-campus, we are also challenged by constraints on student time to participate in URSCA. Related to these challenges, we are looking for creative solutions on increasing resources to fund URSCA, both to support more students financially and to provide supplies and equipment for URSCA activities. We also seek solutions for best practices in recognizing faculty members for their work as URSCA mentors, including counting mentoring time toward faculty workload. UW–Parkside’s updated plans include creating a campus URSCA office to provide infrastructure and coordinate activities, creating a campus URSCA committee to engage more faculty members in this practice, and seeking long-term internal and external funding sources.

UW–River Falls

In Spring 2013, UW River Falls opened an URSCA Office with a half-time, ten-month URSCA Director and a full-time Coordinator. Over the course of the year, this office has established a faculty-led URSCA Council, dramatically increased and diversified participation in biannual campus research symposiums, SURSCA (a student research club), and URSCA grant competitions. The office has initiated new grants, with stronger mentor support as well as increased support for undergraduates, and established a strong web presence with fully online grant and dissemination event application and review processes. At present, we have more undergraduates who would like to do research than we have mentors to support them, so in many regards, our main challenge is in finding and incentivizing faculty mentors. We are looking for creative solutions to providing support for our undergraduate researchers in our new Falcon Scholars program; looking for ways to continue to improve our online application and review processes; to streamline grant award and reimbursement/payout processes; and to better track the UR activity on our campus. We are also interested in tracking the relationship between undergraduate research and economic development.

UW–Stevens Point

The main successes we have achieved include a strong culture of student and faculty collaborative undergraduate research with 22% of UW-Stevens Point seniors reporting they have worked on a research project with a faculty member outside of course or program requirements as compared to 19% of UW-Comprehensive senior students. Many professors see undergraduate research as teaching, and our new “strategic plan for teaching and learning engagement” emphasizes the educational value of undergraduate research. We also have an excellent record of students graduating and then completing Ph.D.s in STEM fields (over the previous 10 year period, we have the second highest number in the UW-System just behind UW-Madison). Financial support comes from our Student Government Association and general program revenue, as well as external sources. Finally, each of our four colleges hosts an annual undergraduate research symposium. Major challenges we are facing include how do we reward, honor, and give credit to those who engage in undergraduate research? Also, prior to January 2014, we were supporting undergraduate research on a decentralized basis. We are looking for creative solutions on how to bring the disparate groups together (four separate college efforts into one university-wide effort). Also, how can we show our support for faculty engaging in this activity? Are there best practices for including undergraduate research in contract obligations? Our updated plans include sharing successful methods across the campus, creating a campus-wide research symposium, and obtaining additional outside funding sources to increase and improve our efforts.
**UW–Stout**

UW-Stout support of undergraduate scholarly activities has greatly increased over the past few years. Some of these accomplishments include: The Stout Student Association passed a resolution supporting the integrating undergraduate research as a requirement for all bachelor’s degrees. The university has expanded the Discovery Center, which helps facilitate research activities with industry, to include the Stout Sustainability Sciences Institute and the Fab Lab. Several entities at the university have broadened the celebration of undergraduate research into new venues such as the STEM Student Projects Expo which focuses on classroom activities. A new Student Jobs Initiative provides freshmen with on-campus jobs to increase retention – many of these positions include a research component. All of these have fed into a broader discussion focusing on UW-Stout’s position as an Emerging Research Institution. Significant barriers remain: A more coherent discussion about the Emerging Research Institution is needed that includes all stakeholders. Part of this discussion needs to include updating our common understanding of the models used to carry out research with undergraduates and better compensating faculty for doing research with undergraduates – with both time and monetary support. We look for creative solutions for professional development for faculty research mentors and to change the culture on campus when it comes to doing research with students – during the academic year and during the summer months. We are also looking for better ways to coordinate and communicate research needs, activities, and accolades across the campus and with the outside community. Our current plans include working with our teaching and learning center to provide professional development on research pedagogy and we plan to gather more metrics on the extent and impact of research on our undergraduates.

**UW–Whitewater**

The Undergraduate Research Program at the University of Wisconsin – Whitewater has enjoyed tremendous growth. The number of student participants has increased by about 8-fold in the last decade with major growth among the arts and business majors, underclassmen, and in students of opportunity. Our success is largely due to a concerted effort to engage academic departments on campus to discuss how undergraduate research can support disciplinary missions and goals. We have also established pilot programs that provide research assistantship opportunities to traditionally underserved student groups and under-represented disciplines, with these programs supporting a wide variety of faculty-mentored projects and entrepreneurship training in a regional business incubation program. We have begun to share the results of departmental discussions with the campus community and administration, as well as advocates of undergraduate research in the University of Wisconsin System and beyond. The pilot research assistantship programs are well-received and are being institutionalized. We are currently working to provide additional opportunities for non-traditional students, community-based research projects, and course-embedded research. Challenges to expansion of undergraduate research opportunities remain, due to budgetary and staff constraints as well as the need to expand program assessment in order to better document student learning outcomes and thus secure continuous support from campus and system administration. We are looking to share our experiences with colleagues within and outside of the University of Wisconsin System to help us locate resources and strategies to support program growth and identify/work on solutions to common problems.