From CUR's Executive Officer

As I write this, I'm preparing to go to University of North Carolina at Asheville to join 4,000 other participants in an historic collaborative undergraduate research partnership—the 30th anniversary of the National Conference on Undergraduate Research (NCUR). Developing a collaborative partnership like NCUR is akin to creating a patchwork quilt. Start with diverse pieces. Assemble them in startling yet orderly patterns to create a whole cloth, seamless and tailored to fit. Yet such partnerships can be a struggle to establish and maintain. They take deep and selfless work, are subject to the vicissitudes of interpersonal relationships and uncertain funding, and may face policy and infrastructure barriers. For example, this year's NCUR is taking place against the backdrop of legislation-driven drama in the state of North Carolina.

The irresistible attraction of collaboratives is that they aspire to fit the adage “the whole is greater than the sum of the parts.” The impressive array of vignettes and papers in this *CUR Quarterly* offers inspirational windows into the creative will and persistence needed to achieve resonant undergraduate research collaboratives.

We are accustomed to reading compelling narratives about undergraduate students transformed through the research process. Certainly many of the articles presented in this quarter's issue make that point. What is distinctive about this issue's offerings, however, is the evidence that undergraduate research-based inter-organizational partnerships have positive impacts on faculty research and, in some instances, may be more effective in advancing knowledge than other types of research partnerships. For example, Jeffrey Simmons and others describe an ecological monitoring project catalyzed by National Science Foundation (NSF) funding, involving close to 300 faculty members at more than 200 institutions, including international partners. More than 90 percent of faculty responding to a survey said that their involvement in the project led to new research areas and contacts.

In another example, the undergraduate astronomy research that Parker Troischt and others have undertaken for over a decade involves close to 20 institutions, including the Arecibo Observatory in Puerto Rico. The authors note that the undergraduate research component is a particularly good match for long term, data-dense observational research programs, asserting that “participation by undergraduates can be truly useful to the health of a major long-term research project.”

If collaborative undergraduate research partnerships can positively impact faculty renewal and help sustain projects that need a lot of “hands-on/minds-on” data collection and anal-

ysis, how can we better support the culture and practice of these types of collaboratives? One answer is to build better intra-organizational partnerships. As an example, Kimberly Schneider and others at University of Central Florida describe an academic affairs-institutional research partnership on that campus to measure and track undergraduate research impacts, thereby strengthening both faculty and administrative ownership of the undergraduate research enterprise.

CUR's new strategic plan emphasizes development of both inter- and intra-organizational partnerships to serve the undergraduate research community. We are branching out to form new collaborations because, frankly, the “easy” work of establishing undergraduate research as an effective practice, and showcasing the salutary effects on student success, is well underway. The challenges and opportunities that face CUR now are to connect with disciplinary societies and higher-education associations (inter-organizational collaboratives) to help scale and scaffold undergraduate research throughout the often siloed, discipline-based curricula and varied subcultures within institutions and within CUR (intra-organizational collaboratives). The goal is to provide more bridges between science, technology, engineering, and mathematics faculty (STEM) and non-STEM faculty members' undergraduate research practices.

On a global scale, CUR's newest collaboration is to work with Qatar University, the British Conference of Undergraduate Research, and the Australasian Conference of Undergraduate Research to produce the first international world congress of undergraduate research in November 2016. Bringing together such diverse partners, with fundamentally different organizational frameworks, values, and cultures, has required deep relationship-building and planning over a two-year period. We are finding, as physicist and STEM education leader S. James Gates, Jr., of the University of Maryland stated in a recent *Science* editorial: “....diversity's superiority emerges when a problem is difficult; that is, when no single individual always finds a solution, particularly in situations requiring creativity.” Creating an international partnership to link diverse undergraduate research programs and cultures is a grand challenge and opportunity, as we collaboratively design, fit, and stitch a global quilt.

Reference

Gates, S. James, Jr. 2016. “Einstein vs. Roberts.” *Science* 351(6280): 1371. doi: 10.1126/science.aaf6992.

Elizabeth L. Ambos

CUR Executive Officer

doi: 10.18833/curq/36/4/9