

Our Journey Towards Institutionalizing Undergraduate Research

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Abstract:

How do you move from a set of disjointed undergraduate research activities to a full-time undergraduate research director with a budget of \$100,000? How do you move the needle of undergraduate research in less than two years at a predominantly undergraduate institution that has experienced budget cuts for five consecutive years? Since 2010, Georgia College has realized a significant return on a modest investment since it launched a vigorous initiative towards institutionalizing and sustaining a culture of student-faculty collaboration and meaningful student engagement through undergraduate research. This paper is a brief reflection of that process achieved through the non-deliberative application of classic group theory. We believe that our experiences may prove useful to faculty at institutions facing similar challenges.

Key Words:

Undergraduate research; student engagement; team; group dynamics; faculty development; Council of Undergraduate Research.

Introduction

In 2010, the Council of Public Liberal Arts Colleges (COPLAC) requested from its member institutions information for inclusion in a consortium-wide proposal on “Institutionalizing Undergraduate Research”. As an active member of COPLAC for 10 years, Georgia College has placed high value on the vision and mission of COPLAC, whose governing board is comprised of presidents of 27 public liberal arts colleges. Therefore, when the COPLAC board collectively decided that undergraduate research would become its academic distinctive, we seized the opportunity to raise research with undergraduates as a signature program for student engagement in and outside of the classroom.

The director of the Science Education Center (SEC) at Georgia College was chosen by the provost to lead this effort on behalf of the university. COPLAC’s proposal was submitted to the Council on Undergraduate Research (CUR), a national organization that had recently received an award from the National Science Foundation to engage higher education consortia in advancing undergraduate research in science, technology, engineering and mathematics (STEM). The COPLAC application was awarded to bring together STEM faculty and administrators from COPLAC campuses with CUR facilitators for a conference to share ideas, strengthen our respective programs, and build capacity for future collaborations. The conference was set for late June 2011 at the University of North Carolina at Asheville, home to COPLAC. A core group of faculty was needed to represent Georgia College at that working conference.

Who would comprise this group was a decision of critical importance to Georgia College. As the state’s designated public liberal arts university, our school combines the educational experience expected at esteemed private liberal arts colleges with the affordability of public higher education. Located close to the geographical center of the state, we offer undergraduate programs to almost 6,000 students and master’s degrees to approximately 1,000 students, mostly from the state. In a university system of 32 public institutions and an extensive period of budget uncertainty, we have continued to seek concrete pathways to confirm our value-added education offerings. With undergraduate research identified as a proven and effective pedagogical pillar of distinction for recruiting and retaining students and faculty, and a cornerstone for the fiscal and reputational interests of the university, our administrators were keenly interested in investing in a successful group to carry out this charge.

Members of this core group would need to have the right combination of common goal, strong communication skills, and a disposition for synergy (Bertcher, 1979), and a track record for fostering change with little funding support. Therefore, we have concluded that our provost at the time made a deliberate decision to choose the director of the SEC to lead this initiative because of her passion for collaborative work and record of faculty inclusivity in university-wide projects. We also argue that it is this type of intentionality that fosters how dynamic groups are formed (Zander, 1981) and is foundational to how our team functioned to effectively raise a ground swell of activity by myriad faculty and administrators around an undergraduate research institutionalization effort.

Finding the right team

Our administrators were eager to appoint faculty to the lead group but the center director recognized that anyone identified would agree out of obligation and not from deep interest (Tuckman & Jansen, 1977). In addition to scholarship, committee and service work, faculty at Georgia College teach a heavy 4/4 load leaving little time for other commitments. Ensuring the greatest outcomes for the proposed initiative required a strong match between the goals of the initiative and that of the faculty member (Zander, 1991). To guarantee that this occurred, recruitment to the lead faculty group was achieved through a survey of interested STEM faculty. A call for response to “*What do you see as your role in effecting change in undergraduate research at Georgia College*” produced multiple submissions from biology, mathematics, physics, and chemistry faculty. Inherent in each of the responses was a deep desire to be a member of a group that could help achieve the goal of advancing undergraduate research in ways that one would be unable to realize individually (Johnson & Johnson, 1991). Yet, the selections made by the dean, provost and the center director for membership in this core group were not based on the survey responses only but also on the faculty member’s track record in undergraduate research, ability to represent the STEM discipline, and history of productive campus-wide relationships. We had our core group!

Initially, plans for the first group meeting in January 2011 focused on preparations for the upcoming Asheville conference. Instead, our group spent two hours discussing successes and challenges in undergraduate research at Georgia College. By commiserating about common barriers to successful undergraduate research (such as time, administrative support, limited resources, lack of administrative coordination, and funding), our group began developing an identity through this forming interaction (Tuckman & Jansen, 1977). At each subsequent monthly meeting, our rich dialogue and interactions helped dispel preconceived notions of each other, bringing the group closer together (Senge, 1994). At the same time, we quickly identified each other’s strengths, which was critical to the distribution of leadership or for the delegation of responsibilities such as completing pre-conference assignments (Gabarro & Harlan, 1976). As luck would have it, our recently-appointed director of the Office of Grants & Sponsored Projects mentioned the upcoming conference to the team leader and expressed interest in participating since one of her goals was improving undergraduate research opportunities. The group accepted her inclusion based on recommendations of her previous work with two group members.

How many adults can you stuff into a small sport utility vehicle?

To date, the pivotal event in our journey towards institutionalizing undergraduate research was our road trip to the COPLAC working conference. Since Asheville is only five hours away from our college by car, our team decided that we would travel in one vehicle to minimize cost. While not uncomfortable, five adults in a small SUV is close quarters! For five hours straight, we talked about our scholarship, our families and how our career paths led us to Georgia College. The trip to Asheville proved essential in forming our group (Tuckman & Jansen, 1977).

The three days of planned work among 92 COPLAC members and 12 CUR facilitators was demanding but highly rewarding (Figure 1). Most importantly, it was focused on action planning.



Figure 1: Participants of the 2011 CUR Institutionalizing Undergraduate Research Conference at COPLAC in Asheville, NC (Photo credit: COPLAC)

The dialogue among colleagues from other colleges helped us realize that in some ways, our university was ahead of other schools in building a community of research with undergraduates. For example, we had an established Student Research Conference, now in its 16th year. Our journal of student research, *The Corinthian*, had just released its 15th annual edition. Plus, our undergraduates were presenting their research across the globe. Yet, as much as this increased our institutional self-esteem, we were aware that these activities represented events that identified the presence of undergraduate research activity and not necessarily *strategic process*. In other words, our goal at the conference would be to identify the very best practices that could transform the intellectual climate of our university and subsequently, merge our islands of student research possibilities into a continent of research excellence.

But, how could we achieve sustainability and institutionalization at Georgia College? We had established earlier that our expressed interest was inclusion across campus, thereby advancing undergraduate research in all disciplines. Our administrators would be on board; but institutionalization would require a bottom-up movement by our faculty! It soon became apparent during our discourse that the CUR definition of undergraduate research deeply embraced creative endeavors. The elevation and recognition of non-STEM disciplines in undergraduate research by CUR and other national organizations would be the pathway for our institutionalization efforts! Equipped with this awareness, we refocused our efforts during team-planning time on strengthening our argument for building capacity to sustain a culture where faculty careers include undergraduates as researchers.

The conference schedule afforded the right mixture of steady guided work and one evening off. The group used that free time together to explore an eclectic area of Asheville allowing us to also pursue our individual interests. After wandering around downtown, we celebrated our team's accomplishments and listened to each other's life stories at a local biergarten. This social time alone further cemented our relationship as a group (Bertcher, 1979).

Our work during the conference produced a solid plan of action which made our trip back home enjoyable. In the car for another five hours, we were forced to unpack, process, and share what we had each experienced during the conference. But, our sharing went beyond the conference to more personal stories, solidifying the cohesion of the group. One of us relayed a story of a less than academically-successful mathematics student transformed by undergraduate research. Another described how she used her summer research program as a medium for peer mentoring between college and local high school students. Yet another described how she prepared for her employment interview by identifying how she could help faculty find funding for work with undergraduates. Sharing our personal experiences unveiled both our strengths and vulnerable areas but most of all, our passion for fostering greater expectations by our students. These conversations deepened our esteem for each other such that when we emerged from the SUV at Georgia College and said our farewells, it was apparent that our group had transformed into a team.

Cultivating buy-in

Armed with our action plan and motivated by our white paper of recommendations (Richards, et al. 2011) that we crafted on our immediate return to Georgia College, our team set out to solicit buy-in from like-minded faculty, staff and administrators (Bertcher, 1979). A key acknowledgement by our team was a need for faculty to embrace the institutionalization initiative, despite lack of formal funding. Since each of us possessed strong relationships with other faculty, including those outside of our respective departments, we gambled on the notion that engaging diverse faculty in meaningful professional development around student research would expand our number of advocates.

Teaching Circles

Our first strategy involved broadening participation by inviting a cadre of "movers and shakers" in undergraduate research to participate in two, year-long Teaching Circles. A teaching circle is a gathering of teachers who meet regularly to explore and learn around a common interest. At Georgia College, faculty are invited to submit proposals to compete for \$500 mini-grants to facilitate these communities of engagement. To execute this component of our action plan, at least two members of the lead team coordinated each teaching circle on overarching themes from our work at the conference: (1) *Integrating undergraduate research into the curriculum*; and (2) *Effective Mentoring: a tool for advancing undergraduate research*. Targeted invitations were sent to 12 faculty members at the university's four colleges. The circle gatherings took place monthly from October through April. By all accounts, our circles were quite successful (Richards, Lewis, Manoylov, Brown & Busch, 2012a). Funding was used for a common text and an end of year *Dine and Learn* dissemination event. Members of each circle

have continued their explorations to date. Circle members perceived the greatest outcome of the gatherings (Undergraduate Research Mentoring Blog, 2012) to be the network created among peers, the opportunity to raise challenges and explore solutions in a safe space, and a collective desire to advance the skills of our students.

Undergraduate Scholarship Symposium & Workshop Series

To broaden participation of faculty engaged in examining undergraduate research practices across the campus, the lead team and members of Georgia College's Innovative Course-building Group (<http://icbg.wordpress.com>) co-facilitated a symposium and workshop series beginning in January 2012 (Figure 2).



Figure 2: Faculty facilitators of the 2012 Undergraduate Scholarship Symposium at Georgia College

The activities were designed in the spirit of the CUR-facilitated summer workshop (Council of Undergraduate Research, 2011). The series kicked-off with a full-day Saturday symposium where 11 faculty teams representing 13 disciplines and 31 participants investigated the current state of student-faculty collaborative work (Figure 3). Each teams designed a roadmap for sustaining and expanding faculty-student collaborations in the discipline or at the departmental level. Their action plans included obtainable goals, identified measures of success, and a timeline for implementation. Since our lead team was familiar with all workshop participants, we were intentional about identifying who would facilitate the departmental teams working in each room. As with any institution, there are individual and departmental personalities that respond better to different styles of facilitators. Thus, a benefit of the diversity of the lead team was our ability to equip the best-suited member with the required skills to manage anticipated challenges (Katzenbach & Smith, 1993).



Figure 3: Faculty teams from art (left) and physics (right) developed departmental action plans for advancing undergraduate research at the 2012 Undergraduate Scholarship Symposium at Georgia College

At the three subsequent Friday follow-up workshop sessions to date, faculty teams shared progress of their action plans, practices that worked, and explored common approaches that could impact change in our research culture. The high level of participation and enthusiasm during the workshop series was contagious and vibrant learning community has developed among our faculty. Several participants asked if we would continue hosting the workshop series beyond the academic year, which we have done. Our plans are to host a similar symposium during the spring 2013 for other disciplines. To continue developing faculty as leaders, we have asked current symposium participants to function as mentors and lead the symposium series for the new cohort of faculty teams.

At the working conference, our lead team had devised a plan to develop teaching circle members as ‘moles’ to find interested faculty to populate professional development activities around undergraduate research such as the symposium. Our plans worked better than anticipated! We received an overwhelming response (48 responses) by faculty indicating interest in the symposium, although several were unable to attend the Saturday event due to prior commitments. However, all have participated at least once in the follow-up sessions, which average around 22 faculty members at each session. In fact, most participants later communicated that “*I did it as a favor to you,*” indicating that we were trusted due to our track record of fostering faculty-driven, faculty-led endeavors.

The campus-wide event was sponsored to the tune of \$700 by the Center for Excellence in Teaching and Learning as part of its high-impact pedagogies workshops. Our facilitation committee planned for childcare, a first in Georgia College history. Although childcare was not ultimately needed, offering this service sent a strong message to our participants that we valued their time. Many participants commented on this and how appreciated they felt to have a buffet luncheon with cloth napkins and silverware (versus a box lunch). They communicated that the overall atmosphere created around the symposium was priceless; that is, offering childcare and being able to dialogue at lunch with colleagues from their own programs without interruption. Plus, each participant received a letter of congratulations for participating from the provost’s office.

From Georgia College, with love

Empowered by the faculty development around best practices in undergraduate research, a group of faculty from different disciplines volunteered to share the work they had done at the annual COPLAC Conference and Biennial CUR conference in summer 2012. The lead team championed the Council of Deans for funds for travel support. A strong vote of confidence was extended to the lead team by the council: each of our four deans committed to supporting one faculty member, irrespective of the college from which the faculty member resided. At the COPLAC Conference, the Georgia College team presented a poster showcase on the teaching circles and the symposium, followed by a mini-workshop on institutional challenges and solutions in advancing undergraduate research. (See Figure 4.) The presentation was well-received by a diverse group of COPLAC faculty and administrators.



Figure 4: Faculty participants of the teaching circles and/or symposium presented their work at the 2012 COPLAC Annual Conference in Wise, VA (Photo credit: Bronte Joseph)

In order to continue our quest for best practice strategies in undergraduate research, two members of our lead team participated in the CUR Biennial Conference in June 2012 and shared some of what we were doing as part of the initiative (Figure 5).



Figure 5: Undergraduate Research Committee members present the committee's outcomes at the 2012 CUR Biennial Conference in Scranton, NJ (Photo credit: CUR)

Picking some fruits of our labor

Having spent a year collecting faculty feedback and dissecting our collective conversations, the lead team embarked on a plan to charter a course for the direction of sustained undergraduate research at Georgia College. The resulting proposal (Richards, et al, 2012b) to our faculty and administrators called for support that would impact undergraduate research at a unit/department-level versus an individual level. A budget of \$100,000 was earmarked and approved by our administrators to support learning outside of the classroom. Paralleling this call for action was the hiring of our first director of Engaged Learning and coordinator of Undergraduate Research! The search was led by the chair of our lead team. Having a clear path to proceed, the new director was able to immediately implement a series of calls for proposals to support departmental action plans, summer research programs and student travel. To ensure that these opportunities were steeped in best practice strategies that we had gathered along the way, we urged the new director to create an advisory group comprised of our most active undergraduate research advocates and some members of the lead team, now known as the Undergraduate Research Initiative Committee. The advisory group developed a transparent process for the new funding competitions, which was well-received by the university. Although our new director attends our committee meetings, the cohesion of the group has not afforded him membership in the original lead team (Zander, 1981).

Summary

This past December, one of our team members threw a party to celebrate our initial accomplishments as a team. However, we still have much work ahead. Throughout the process, our team was intentional about our approaches to each task of our action plan. What we did not anticipate was the power of our dynamic as a group, the 'safe space' that we created to discuss our concerns and successes beyond issues of undergraduate research, the trust that we cultivated within and beyond our group, and our ability to make sound decisions that were not influenced by funding. We argue, therefore, that an understanding of the power of this dynamic is critical in replicating similar journeys that empower faculty to move the needle at their home institutions.

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