

Marketable skills are often bifurcated into cognitive/non-cognitive or soft/hard skills. Decontextualized, noncognitive, “soft” skills such as communication and teamwork—as opposed to discipline-based concepts and hard facts—are often viewed as mushy and valueless (Hora, Benbow, and Smolarek 2018). However, to be considered a capital asset (i.e., having value), communication, teamwork, decision-making, critical thinking, and knowledge application must be addressed in the cultural context of a *specific* workplace or industry sector. That is, they must be viewed in the context of professional communities and organizations, not in an unnuanced, illusionary, generic vacuum of workplace skills, so that they are truly applicable and free of soft and mushy associations.

The second category consisted of measuring research levels in the GES program. With the cultural capital context paradigm in mind—in this case, that of the environmental sector workplace where investigation and problem-solving are key—an undergraduate research program was developed with four levels: (1) course-based activities, (2) course-based projects, (3) student-faculty collaboratives, and (4) external research. From there, a 31-item inventory of cultural capital-informed marketable skills—the Marketable Skills Inventory for Geography and Environmental Sustainability Fieldwork (MSIGES)—was developed. This inventory was used to measure the extent to which students were offered skill building opportunities, and their perceptions of gaining these skills, in NVC’s Adventure Science field studies program in Morocco. Sample skills in the context of environmental sustainability that are culturally determined and dependent on context include the following: analysis, synthesis, application of knowledge, research skills, adaptation to new situations, and ability to work in international contexts.

In the Adventure Science program, undergraduate field research was connected to marketable skills. The program partnered with the nongovernmental Atlas Cultural Foundation (ACF) in Morocco to conduct research that superseded typical study abroad goals and included levels 1–3 research. Some of the participating students ($n = 6$) opted only for in-class research as a part of their for-credit study abroad course, whereas others opted to use the class-collected data and write a technical report modeled on that of a private environmental engineering consulting firm that had conducted the same research two years prior. These community college students wrote a professional, 24-page technical report they submitted to ACF, as well as used it as the basis for an academic conference presentation and a peer-reviewed journal article.

At the end of the Moroccan hydrology field study, students’ perceptions were measured in terms of marketable skills specific to geography and environmental science with the MSIGES. On a 1 = never occurring to 5 = often

occurring scale, items related to diversity, teamwork, interpersonal skills, and application of knowledge had the strongest results ($\bar{X} = 4.7$ to 5.0). Items related to leadership, which are perceived as important to employers, were not perceived as strong by the students themselves ($\bar{X} = 4.3$), despite their work in teams and as leaders. Further, “capacity to apply knowledge” and “teamwork” were perfectly correlated ($r = 1.00, p = 0.01$), as was “working in interdisciplinary teams,” “appreciation of diversity,” and “working in an international context” ($r = 1.00, p = 0.01$).

Two themes emerged from the open-ended items:

1. Students perceived “teamwork” as a skill that employers would find important and were able to give concrete examples of their collaborations in teams, and
2. Students equally believed employers would find “leadership” as important; however, none offered any concrete examples of leadership from their fieldwork, despite the observation of this quality by the leading faculty, demonstrating that marketable skills sometimes need to be highlighted for students who are experiencing them.

References

Hart Research Associates. 2015. *Falling Short? College Learning and Career Success*. Washington, DC: Hart Research Associates.

Hora, Matthew T., Ross J. Benbow, and Bailey B. Smolarek. 2018. “Re-Thinking Soft Skills and Student Employability: A New Paradigm for Undergraduate Education.” *Change: The Magazine of Higher Learning* 50(6): 30–37. doi: 10.1080/00091383.2018.1540819

Summit Recommendations Provide Guidance to Expand Undergraduate Research Experiences at Community Colleges

Madeline Patton and Ellen Hause

Madeline Patton Writing & Editing Services/American Association of Community Colleges, mpattonwriting@gmail.com

doi: 10.18833/spur/4/3/9

The Community College Undergraduate Research Experience Summit was a rare opportunity for educators from various STEM disciplines and a cross section of institutions to share their perspectives on efforts by two-year colleges to build, implement, and sustain undergraduate research experiences (UREs).

The enthusiasm of the 120 thought leaders for UREs was evident in the lively poster showcase, plenary sessions, and small-group discussions where participants were mixed intentionally to seed candid dialogue about scaling and sustaining UREs at two-year colleges and related topics. The top recommendations from each small group were reviewed by all participants.

Their collective recommendations in the *Community College Undergraduate Research Experience Summit Proceedings Report* (Patton and Hause 2020) offer guidance for administrators and faculty at associate-degree-granting institutions and community partners to enhance students' learning by offering UREs.

The summit was convened on November 20–22, 2019, in Washington, DC, by the American Association of Community Colleges with support from the Advanced Technological Education (ATE) program of the National Science Foundation (NSF). As summit partners, the Council on Undergraduate Research and the Community College Undergraduate Research Initiative assisted with planning.

The summit organizers defined UREs as instructional opportunities that use the scientific method or engineering design process to investigate a problem where the solution is unknown to students and faculty. This broad definition encompassed internships, competitions that blend academic and technical skills, and STEM design challenges (e.g., the Community College Innovation Challenge) as well as more traditional course-based research and honors projects.

Summit participants identified relationships of community college URE leaders with employers and universities as priorities second only to garnering institutional support for UREs. To ensure life-cycle support for UREs, they encouraged faculty to tailor UREs to the particular region's job market, to engage partners intentionally with frequent communication and recognition, and to establish pathways that help students progress from UREs to immediate entry to STEM careers or baccalaureate programs.

The following are other key recommendations from the summit for community college administrators and faculty:

- Scale and sustain UREs by incentivizing participation and cultivating inclusive campus cultures to engage all stakeholders in creation of UREs that align with the strategic plans of community colleges.
- Mobilize partnerships for UREs by developing collaborations with student organizations, faculty across disciplines, and employers. Also, share quantitative program assessments and qualitative data from students and alumni.
- Ensure equitable access to UREs by introducing students to research in the first term and by educating faculty about Universal Design for Learning concepts.
- Assess impact by using multiple measures (i.e., retention, completion, precourse and postcourse assessments, student stories, and gap analysis) within a standard set of assessment tools.

Outcomes of the summit include a grassroots community-of-practice that meets remotely each month to increase faculty engagement in research. To participate, contact Jared Ashcroft, Pasadena City College chemistry professor, at jmashcroft@pasadena.edu.

Summit discussions also encouraged NSF program directors. They issued a Dear Colleague Letter in March 2020 offering supplemental funding for ATE projects and centers to create new UREs or expand existing ones. NSF program directors helped ATE principal investigators who expressed interest in the opportunity but were impeded by COVID-19, by extending the deadline for submitting proposals through 2020.

In addition to the full proceedings report, the summit website (AACC n.d.) has notes from the moderated discussions, videos and posters featuring the UREs of participants, and URE outreach materials.

References

American Association of Community Colleges (AACC). n.d. "Community College Undergraduate Research Experience (URE) Summit." Washington, DC: AACC. Accessed March 24, 2021. <https://www.aacc.nche.edu/URESummit>

Patton, Madeline, and Ellen Hause. 2020. *Community College Undergraduate Research Experience Summit Proceedings Report*. Washington, DC: American Association of Community Colleges. Accessed September 28, 2020. https://www.aacc.nche.edu/wp-content/uploads/2020/04/AACC_URE_REPORT-FINAL.pdf