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A Position Paper: Recognizing Undergraduate Research, Scholarship, & Creative Inquiry as a Career-Readiness Tool

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Amid the current cultural narrative diminishing the value of higher education, a prolonged pandemic that has exacerbated inequities in so many ways, an increasing focus on workforce development, legislative mandates, and changing student populations, the importance bridging the impact of URSCI experiences to career readiness skills is a critical next step for the Council on Undergraduate Research (CUR) as leaders in undergraduate research. The benefits of undergraduate research, scholarship and creative inquiry (URSCI) has been well-established in the literature as a high-impact practice that helps all of our student populations advance. However, to fully realize the transformative impact of URSCI, as faculty, mentors and higher education administrators we are called to extend our definition of student success, learn how the valuable skills, knowledge and dispositions that our students gain and hone through participating in URSCI experiences relate to desirable career competencies, and help our students learn and articulate how their URSCI experiences help prepare them for their next steps. In 2021 our partners at National Association of Colleges and Employers (NACE) updated their list of career readiness competencies that our students need to enter and thrive in today's work environment. These competencies easily map to the benefits we often see in URSCI experiences. It is valuable to map the benefits of students participating in URSCI experiences to these competencies, make a visible and transparent this crosswalk, and help our students frame their URSCI stories in ways that potential employers will understand and value.

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To build this bridge, I share the NACE career readiness competencies and illustrate how mentors can infuse the associated sample behaviors within their undergraduate research, scholarship and creative inquiry projects in visible, transparent, and consumable ways for our students to recognize the relevancy, value and leave with the language and ability to tell their URSCI stories.

Eight NACE Competencies

- Career & Self-Development P2
- Communication P2
- Critical Thinking P2
- Equity & Inclusion P2
- Leadership P3
- Professionalism P3
- Teamwork P3
- Technology P3

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Career & Self-Development

NACE defines the Career & Self-Development competency as the ability to “[p]roactively develop oneself and one’s career through continual personal and professional learning, awareness of one’s strengths and weaknesses, navigation of career opportunities, and networking to build relationships within and without one’s organization.”

Applying the NACE sample behaviors to the URE context, consider including multiple guided pre-reflections and reflections as part of your URSCI project framed so students can practice articulating the valuable impact of their URE on their career and personal development. Prompt students to reflect on their strengths and areas for growth, ask them to articulate career plans and goals, and identify opportunities, that can help them learn and achieve these goals. As students assume duties or positions within the project that will help them progress professionally, articulate the importance of these positions and help students think about how they would include this on a resume or talk about it in a cover letter or job interview. Model and offer opportunities for continued professional development as well as the importance of relationships and networking. Through URSCI our students are developing their professional identities. Help them name this and practice the articulation of their envisioned career path and associated professional development.

Communication

For NACE, communication is “clearly and effectively exchange[ing] information, ideas, facts, and perspectives with persons inside and outside of an organization.”

Focusing on communication is not uncommon among URSCI mentors. Indeed, it is a common positive outcome associated with participation in UREs. Helping students to understand and practice verbal, written, and non-verbal communication skills can be achieved by naming its importance and articulating in your projects where students are practicing this skill. Consider creating multiple opportunities for students to practice clear and organized communication to various audiences, such as updates within the team or department. These could be written or verbal, formal or informal. Or, consider using all of these approaches at different times to help students practice their skills. Many mentors help facilitate student participation in dissemination opportunities. Consider creating multiple opportunities for students to deliver their products to a diversity of audiences, such as donors, alumni, community members, government agencies, and K-12 students. Some of these audiences invite the opportunity for students to practice persuasion and influencing skills. And, as a companion to these dissemination events, help students practice their active listening by encouraging peer engagement. For projects that involve methods that require active listening, highlight the development of this skill for your students as part of the project documentation.

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Creating a welcoming environment where students feel comfortable seeking information from mentors and encouraging asking for guidance on assigned tasks are additional ways mentors can create opportunities for students to practice and hone communication skills for the workplace.

Critical Thinking

NACE defines critical thinking as the ability to “identify and respond to needs based upon an understanding of situational context and logical analysis of relevant information.”

Similar to communication, critical thinking is another URSCI benefit found consistently in the literature. Indeed, the process itself requires students to “gather and analyze information from a diverse set of sources and individuals to fully understand a problem,” “make decisions and solve problems using sound, inclusive reasoning and judgment,” “accurately summarize and interpret data with an awareness of personal bias that may impact outcomes,” and “proactively anticipate needs and prioritize action steps.” Mentors can assist students in understanding these activities as building critical thinking skills by naming these behaviors verbally, in project documents, and building the articulation of these activities into reflection exercises and/or routine reporting as suggested in the Communication section.

Equity & Inclusion

“Demonstrate the awareness, attitude, knowledge, and skills required to equitably engage and include people from different local and global cultures. Engage in anti-racist practices that actively challenge the systems, structures, and policies of racism.”

Behaviors such as “flexibility by adapting to diverse environments” and keeping “an open mind to diverse ideas and new ways of thinking” are competencies embedded in the URSCI process. Community-based and action-oriented URSCI experiences often help students “solicit and use feedback from multiple cultural perspectives to make inclusive and equity-minded decisions” and “actively contribute to inclusive and equitable practices that influence individual and systemic change.” Where these sample behaviors are found, mentors are encouraged to call attention to these skills verbally and in project documents as well as create opportunities for students to articulate these skills in reflections, dissemination, and weave them into the stories they will tell about themselves to potential employers via mock interviews, resume and cover letter exercises, and the development of elevator pitches.

However, URSCI experiences do not always center equity and inclusion or interrogate the existing systems that create and perpetuate inequities. Mentors can aid in cultivating this skill in our students by educating themselves. Today there are a plethora of resources for mentors to understand their own biases, unintentional microaggressions, and unwelcoming practices, policies, and procedures (See for example Longmire-Avital 2020; Shanahan 2018). Before we can help our students to “identify resources and eliminate barriers resulting from individual and systemic racism, inequities, and biases,” or “address systems of privilege that limit

opportunities for members of historically marginalized communities,” mentors need to develop these competencies. The resources are available. Employers and our communities are calling for these skills in our students. It is upon us as URSCI mentors to develop these competencies in ourselves.

Leadership

For NACE, leadership is the ability to “recognize and capitalize on personal and team strengths to achieve organizational goals.”

As URSCI mentors, most of us do not often think about the benefits of URSCI in terms of leadership skills. However, if we consider the NACE sample behaviors, we can see leadership demonstrated in several including: “seek out and leverage diverse resources and feedback from others to inform direction,” “use innovative thinking to go beyond traditional methods,” “plan, initiate, manage, complete, and evaluate projects,” and “use innovative thinking to go beyond traditional methods.” We can reveal other aspects of leadership as we intentionally consider the structure of various URSCI models. Where URSCI mentors include peer mentors and/or tiered-teams (such as graduate students and post-docs), our students are presented with the opportunity to “serve as a role model to others by approaching tasks with confidence and a positive attitude,” and the opportunity to “inspire, persuade, and motivate self and others under a shared vision.” When projects work with external partners, we are presented with an additional platform to demonstrate leadership competencies. Surfacing for students the leadership skills they are developing and intentionally structuring opportunities for students to describe their URSCI team and connections with stakeholders in updates, reflections, presentations, cover letters and interviews will help students tease out these leadership skills and help craft and refine their associated stories.

Professionalism

Professionalism is “knowing work environment differ greatly, understand and demonstrate effective work habits, and act in the interest of the larger community and workplace.”

Elements of the professional competency consistently appear in the URSCI literature as positive outcomes. Indeed, most of the sample behaviors are embedded in the expectations and likely in our URSCI project documents. These include: “act equitably with integrity and accountability to self, others, and the organization,” “be present and prepared,” “demonstrate dependability (e.g., report consistently for work or meetings),” “prioritize and complete tasks to accomplish organizational goals,” “consistently meet or exceed goals and expectations,” “have an attention to detail, resulting in few if any errors in their work,” and “show a high level of dedication toward doing a good job.” Mapping these behaviors to student expectations for the project and the professionalism competency, can help students make these important connections. Surfacing the practice of these behaviors in student interactions with various stakeholders including mentors, teammates, community or industry partners, clients, and audiences can further help make these connections. One sample behavior less likely to be embedded in URSCI is to “maintain a positive personal brand in alignment with organization and personal career values.” However, faculty can help to highlight the importance of a positive personal brand and infuse exercises for students to recognize and practice this

behavior in career preparation materials (cover letters, interview preparation, resume, elevator pitch, etc.) and social media presence and location (such as developing a LinkedIn profile). Faculty can assist here as well, by developing their own professional social media presence as a model and opportunity to help validate student skills and advance their network.

Teamwork

NACE defines teamwork as the ability to “build and maintain collaborative relationships to work effectively toward common goals, while appreciating diverse viewpoints and shared responsibilities.”

The URSCI literature consistently includes teamwork competencies as positive outcomes from participating in URSCI experiences. Relationships are at the core of the URSCI experience.

Consider the following familiar sample behaviors: “listen carefully to others, taking time to understand and ask appropriate questions without interrupting,” “be accountable for individual and team responsibilities and deliverables,” “employ personal strengths, knowledge, and talents to complement those of others,” “exercise the ability to compromise and be agile,” “collaborate with others to achieve common goals,” and “build strong, positive working relationships with supervisor and team.” URSCI mentors can forefront these example behaviors by naming them, infusing in project expectations, rubrics, and intentionally building in personal reflections and strategic and transparent team construction across various URSCI models. Faculty can also help to build teamwork skills by spending time addressing conflict management and ambiguity as part of the URSCI experience and specifically related to the project.

“The more URSCI mentors are comfortable with career readiness competencies, the better equipped we will be to surface these competencies, create practice opportunities, and help launch our students into thriving careers.”

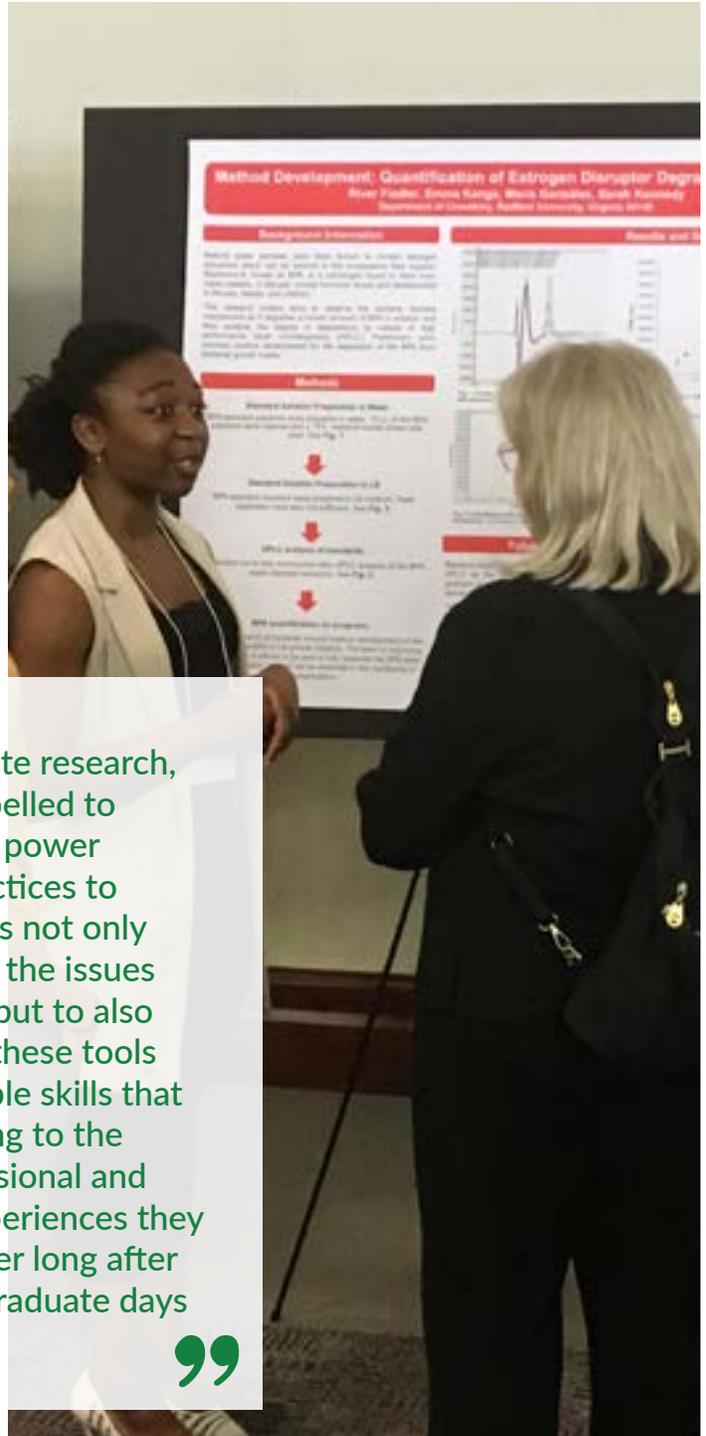
Technology

For NACE, developing a competency in technology means the ability to “understand and leverage technologies ethically to enhance efficiencies, complete tasks, and accomplish goals.”

This competency surfaces in the URSCI literature in discipline specific language such as technical skills, lab techniques, and data analysis skills. While the specific technologies vary widely, all of the sample behaviors are embedded in the URSCI process itself: “navigate change and be open to learning new technologies,” “use technology to improve efficiency and productivity of their work,” “identify appropriate technology for completing specific tasks,” “manage technology to integrate information to support relevant, effective, and timely decision-making,” “quickly adapt to new or unfamiliar technologies, and “manipulate information, construct ideas, and use technology to achieve strategic goals. URSCI mentors can help our students to articulate this skill by calling out

the technologies used. Further, at this time when we have leveraged technologies in novel ways to continue our URSCI projects during the pandemic, consider how we found paths to communicate, collaborate, conference, document, and discuss our work. These are skills that will carry to the evolving workplace environment. Name these skills for our students and create opportunities for them to discuss the techniques used to gather, synthesize and analyze information informally, formally, and in written and verbal formats.

In short, mentors are well-poised to close the articulation gap between what students are learning in their URSCI experience, what recruiters are looking for in early career talent acquisition—and increasingly what legislators, students, and parents are seeking higher education to demonstrate as gains from an undergraduate degree. A minor reframing of how we think about presenting our URSCI experiences to our students can have powerful impacts on helping them to think about the transferable career readiness skills they are developing and honing through their URSCI experience. Surfacing, naming, and mapping the URSCI benefits to the NACE career readiness skills as well as creating multiple opportunities for students to practice these skills can have broad impacts in our students' success in the various paths they choose. Student-centered career readiness adjustments can range from simply mapping and annotating syllabi and project assignments, exercises and documents to career readiness skills, to creating reflections, career preparation materials and exercises (resumes, cover letters, interview preparation, elevator pitches, social media profiles), to faculty focusing on their own personal growth by creating a professional social media presence, participating in equity-based trainings and interrogating their own practices, policies, and procedures, and introducing and infusing workplace lexicon into projects—especially those that engage with external partners. As the work of the CUR Transformations Grant has demonstrated, and viewed from the department and program levels, the infusion and scaffolding of CURES across the curriculum provides another opportunity and pathway to advance career readiness skills via URSCI. The more URSCI mentors are comfortable with career readiness competencies, the better equipped we will be to surface these competencies, create practice opportunities, and help launch our students into thriving careers. As leaders in undergraduate research, we are compelled to leverage the power of these practices to help students not only grapple with the issues of our time, but to also understand these tools as transferable skills that they can bring to the many professional and personal experiences they will encounter long after their undergraduate days are over.



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