PURM
Perspectives on Undergraduate Research & Mentoring

Mentoring for Equity and Inclusion: Strategies for Balancing Student Advocacy and Empowerment

Sophie Pierszalowski, Ph.D., University of Washington (sophpier@uw.edu)
Shannon Hong, B.S., University of Washington
Jeff Kenney, Ph.D., Oregon State University
Scott Vignos, J.D., Oregon State University

Introduction

Mentors play an important role in the success of undergraduate students as they navigate simultaneous academic, personal, and professional trajectories. One area where mentorship can be incredibly influential is the undergraduate research experience. In this high-impact practice, undergraduate students partner with faculty mentors to engage in scholarly inquiry and make an intellectual contribution to their discipline (NASEM, 2017). A growing body of literature illuminates the positive impacts of the undergraduate research experience, including advances in students' academic achievement, identity development, and career readiness (Sell et al., 2018; Palmer et al., 2015; Newell & Ulrich, 2022). Further, studies have shown that gains in student success, belonging, and retention connected to undergraduate research mentoring have an even greater positive impact for students from minoritized racial and ethnic backgrounds (Stout et al., 2018).

However, access to undergraduate research favors white, socioeconomically privileged students (Pierszalowski, Bouwma-Gearhart, & Marlow, 2021). In other words, students from minoritized groups (e.g., first-generation college students, students with high financial need, racially minoritized students) who are said to benefit the most from participation in research are less likely to access these experiences because the systems and structures that define higher education institutions were built to serve white, socioeconomically privileged students. Minoritized students who *do* engage in research often experience racism, sexism, and heteronormativity; underrepresentation and marginalization; inequitable compensation; identity conflict; discrimination that narrows notions of capital and metrics of merit; among other challenges related to marginalization (Longmire-Avital, 2019). Many of these challenges arise as a result of deeply embedded assumptions and norms related to contemporary research being rooted in white supremacist cisheteropatriarchy (Smith, 2016). While research happens in all academic disciplines, most research fields are rooted in white, male, heterosexual, cisgender, able-bodied, and western norms (e.g., valuing volunteer experience in research before getting a paid position (Fournier & Bond, 2015); expectations for long hours regardless of family care obligations (Morales et al., 2020); emphasis on ontologies, epistemologies, and methodologies that ignore diverse forms of learning and knowing (Kincheloe, 2008); and ignoring the social conditions of the researchers (Rosser, 2008)). This historical and contextual reality within STEM can be unwelcoming to individuals who do not share these privileged identities, making it difficult to thrive in these research spaces (Carlone & Johnson, 2007; Ong et al., 2011; Reinholz & Ridgway, 2021).

Effective research mentors ensure that students from minoritized groups have access to research experiences that are welcoming, inclusive, and impactful (Shanahan et al., 2015; Shanahan, 2018; Monarrez et al., 2020). For instance, Haeger and Fresquez (2016) found that students whose mentors offered culturally relevant support and support related to their emotions and relationship to society felt more connected to their area of study and experienced a greater sense of belonging than those whose mentors did not. However, while support for research mentors is recognized as a critical component of excellence in undergraduate research experiences (Rowlett et al., 2012), it is rare for mentors to receive formal training in effective mentoring practices (Reddick, 2011; Morales et al., 2017; Stefanucci, 2019; Baker et al., 2022). While faculty are often heavily evaluated on their research and teaching achievements, they do not receive substantial recognition for their commitment to mentorship and have little incentive to devote time to honing their mentoring practice (Morrison et al., 2019; Baker et al., 2017). These systemic realities can perpetuate problematic mentor behaviors like employing an overly simplistic "one size fits all" mentoring model (assuming all undergraduates need the same support) and not making time to foster a safe environment for identity development, identity expression, and belonging.

In this article, we present a framework that explores the balance between mentor advocacy and empowerment of undergraduate researchers in higher education spaces. We begin by describing the advocacy and empowerment (AE) framework, which originally served to supplement career-long diversity, equity, and inclusion learning for faculty and staff at Oregon State University. We then situate the framework within the context of undergraduate research mentoring while highlighting the importance of finding an appropriate balance between advocacy and empowerment. We offer several cautions to mentors who choose to employ the AE framework in their mentoring relationships. We close by proposing and encouraging the use of this framework in various other contexts within higher education. We hope that with this tool, mentors will more effectively support minoritized students through social, political, psychological, systemic, and structural challenges (hereby referred to as "sociopolitical challenges") encountered in, and tangential to, their research experiences.

The Advocacy & Empowerment (AE) Framework
The AE Framework is a single tool from a larger portfolio of resources that were developed to stimulate career-long diversity, equity, and inclusion (DEI) learning for all faculty and staff at Oregon State University. The core of career-long DEI learning is continuous development of cultural competence. In the broadest terms, cultural competence is a practitioner's awareness of their own assumptions, values, and biases; a practitioner's complexity of knowledge regarding the unique perspectives of culturally different collaborators; and a practitioner's willingness and skill to develop their practices with their evolving knowledge of self and others (Sue et al., 2019).

Cultural competence is a rigorous, complex, and dynamic professional pursuit that often falls victim to interpretations that are overly simplistic and inappropriately linear. To communicate expectations of career-long DEI learning to the diverse professional constituency of the university without losing its complexity and integrity, we patterned off the guidance developed by the American Psychological Association's intersectional guidance for cultural competence (APA, 2017) and articulated career-long learning through an ecological model with a nesting set of competencies that attend to practitioner effectiveness at intrapersonal, interpersonal, institutional, structural, and global levels (Oregon State University, 2023). We then translated these cultural competencies for various functions of the higher education enterprise, including teaching, research, leadership, and service. It is in the domain of service, or helping roles like mentorship, that the AE framework germinated.

Our initial sketches of the AE framework were developed to address "helping problems" in several corners of the university. Our foremost problem was inconsistencies in the operations of our bias

response team and the need for a sense-making framework to structure the team's deliberation, clarify the team's values, and more effectively communicate the team's decisions. Our framework also responded to growing training requests from faculty and staff, particularly teaching faculty who were unsure of how to address bias in the classroom. We also leveraged this framework to mediate disagreement and confusion about the roles and boundaries of faculty and staff who were supporting, advising, or mentoring student activists. More relevant to this manuscript, the AE framework supported a growing consultation caseload in the Office of Institutional Diversity at Oregon State University in which faculty and staff confided their ambivalence, lack of confidence, or fear about advising or mentoring marginalized students through their experiences with bias and discrimination.

With our initial sketches, we turned to the literature and drew heavily from social work and higher education scholarship. In the higher education literature, we answered calls for more thoughtful and deliberate bias response practices (Miller et al., 2018a; Miller et al., 2018b) and responded to concerns about the under-preparation of teaching and research faculty to recognize and redress bias in their professional spheres (Boysen, 2012; Kawakami et al., 2009; McCabe, 2009; Nadal et al., 2014; Yosso et al., 2009).

The scaffold of the AE framework was inspired by the social work scholarship on care responses for sexual assault and other trauma survivors (Rose, 1990; Rose, 2000). The scholarship centers the agency of the survivors and implores the helper to be thoughtful about their mutual responsibilities to both advocate on a survivor's behalf as well as empower their own decision-making and self-advocacy, in an effort not to reproduce the power imbalance that characterizes sexual assault and other forms of trauma. Our AE framework, like the scholarship from clinical social work, centers on the most vulnerable, insists upon dialogue, and prioritizes the redress of social injustice.

The AE framework is our effort to solve a leadership problem by translating theory to practice in context. We find that the AE framework is a focused tool that addresses numerous dimensions of our larger guidance for career-long DEI learning. The framework attends to knowledge, skills, and attitudes that traverse intrapersonal, interpersonal, institutional, structural, and global dimensions of cultural competence; positions the helper as a humble facilitator of change; and asserts that balancing advocacy and empowerment is not a neutral position. It is designed to help guide those who value social justice and care for those most marginalized in a hegemonic educational system. We have since begun to utilize and communicate this tool to professional helpers across the university. The framework is used formally in university training, and to structure team decision-making and deliberation, and is also used informally in coaching and developmental settings to help faculty and staff make sense of their values and their decision-making in support of marginalized learners. In this article, we situate the tool within the context of undergraduate mentorship, specifically in the context of research.

Translating the AE Framework into a Mentoring Context
The mentor of an undergraduate researcher is charged with developing research capacity in that student. As an undergraduate researcher builds this capacity, they follow an arc from being a dependent learner to a self-directed one (Knowles, 1975; Tough, 1978; Grow, 1991, 1994). Mentors will follow a parallel arc as the student moves from full reliance on them as an *expert* (i.e. in the student's early, dependent learning phase) to more infrequent reliance on them as a *consultant* (i.e. as the student becomes more self-directed). As a student follows this developmental arc in their research experience, they are simultaneously navigating personal, social, emotional, and political contexts, both connected to their research and not, that necessitate additional types of growth and learning. These contexts can be especially complex and varied for students from minoritized

backgrounds who must navigate inequitable structures and systems that were not built with their needs in mind.

First, we consider the personal, social, emotional, and political challenges a student facing oppression might navigate *within* their research space. While we recognize that research is happening in all academic disciplines, we call out STEM fields as a place where inequities are apparent. Until relatively recently, only white, able-bodied, Christian, upper and middle class, heterosexual men participated in westernized STEM research practices (Halpin, 1989; Ong et al., 2018; Reinholz & Ridgway, 2021). Most, if not all, of the norms that shape STEM research today were founded on the values of these men (Dewey et al., 2021). Thus, bias and discrimination are inherent in research spaces and adversely impact minoritized researchers in these disciplines (e.g., an expectation that research can be conducted on a volunteer basis (Fourneir & Bond, 2015); experiences with underrepresentation and racial assaults in STEM fields (McGee, 2016); implicit bias in requiring formal recommendations for research positions (Houser & Lemmons, 2018); and lack of accessibility in STEM research spaces (Reinholz & Ridgway, 2021). These are just a few examples that highlight why minoritized students may seek help navigating into research spaces, which were not originally designed for them.

Minoritized students will also navigate inequities *outside* of their research experience, which will be inextricably linked to their development as researchers (e.g., exposure to stereotypes, lack of representation in leadership roles, racism from instructors or classmates (Pierszalowski et al., 2021)). An effective undergraduate research mentor is one who can simultaneously support the undergraduate in their research project while also attending to their wellbeing and psychosocial needs (Walkington et al., 2019). Mentors should be willing to support students holistically and recognize the interconnected journeys they are on as they engage in research while simultaneously navigating the seven vectors of student development put forth by Chickering and Reisser (1993): developing competence, managing emotions, moving through autonomy toward interdependence, developing mature interpersonal relationships, establishing identity, developing purpose, and developing integrity. Mentors also play a key role in ensuring that their student's foundational identities (i.e., the identities they bring with them to higher education) are not replaced by, or in conflict with, emerging academic ones, but rather maintain a bridge between them (Shanahan, 2018).

Students cannot compartmentalize their life experiences, and a good mentor will not expect them to. However, it is important to note that there are roles a research mentor may not be able to play, or should never play; i.e., a research mentor is not a healthcare professional or a mental health counselor. It is a good idea to set boundaries for the types of support you are not certified to provide, but at a minimum, a mentor should be prepared to listen, validate, and engage in conversation with the student about how, and in what capacity, they can support the student. The challenges that minoritized students face in higher education (both in and outside of research spaces) can be nuanced and complex. One way to holistically support students is to attend to sociopolitical challenges where they may benefit from a mentor's advocacy or empowerment. An effective mentor will artfully balance their support for students grappling with assimilation into a discipline or institution that is historically exclusive.

We define advocacy as a mentor's efforts on behalf of their mentee. As shown in Table 1, advocacy can take the form of institutional interventions (e.g., clarifying and upholding policy; initiating policy change; clearly communicating process, values, and expectations), community care (e.g., connecting impacted parties to care resources, organizing and facilitating intergroup/intragroup dialogue, pursuing restorative justice), and education and cultural change (e.g., examining and shifting

community norms and values; discerning and advancing essential knowledge, skills, and attitudes; taking responsibility for community learning).

For example, consider a white, male assistant professor in geosciences who has been mentoring a female undergraduate who identifies as Black and is a single mom. This mentor and student have been collaborating on a research project for almost a year and have a respectful, trusting relationship with good communication. The mentor notices that the student has been uncharacteristically distracted and stressed and decides to initiate a conversation about her wellbeing. She confides in him that her academic advisor and instructor have told her that she will not be competitive for graduate school in geosciences because she is unable to engage in extensive field-based experiences as a single mom. Her academic advisor also said that it was probably for the best because these experiences can be really challenging for women, and even harder for women of color.

After validating the student's frustrations and recognizing that this disciplinary assumption is both sexist and racist, the mentor and student talk about what mentor advocacy might look like in this context. With permission and guidance from the student, the mentor begins educating academic deans, faculty, advisors, and instructors in departmental meetings and in a department-wide email about how requiring, or even expecting, undergraduates to engage in extensive field experiences before graduate school disadvantages students who have family care obligations and those who have to work regularly to support their education (Morales et al. 2020). Through these efforts, he connects with two other faculty members who are passionate about diversifying geosciences and submits a National Science Foundation proposal for broadening access to field experiences by designing opportunities to participate remotely and in short-term experiences with flexible hours. While these advocacy steps will not completely eradicate deeply rooted racial and gender inequities in geosciences, they do signal to the student that she is heard and that her experiences are valid. These are also important steps to break the silence about inequities that exclude minoritized students from advancing in the field.

Table 1. *Examples of advocacy.*

Dimensions	Goals	Examples
Institutional Intervention	Clarifying and upholding policy	Walking a student to the institution's office for compliance with civil rights and affirmative action to explore whether they want to initiate a sexual harassment investigation
		Convening institutional leaders to examine and reaffirm the institution's commitment to eliminate workplace bullying
	Initiating policy change	Organizing with unit leaders to examine and revise long held hiring and promotion practices which systematically disadvantage single parents
		Working with front line staff in student health services to shift standard practices related to gender identification to support trans and gender non-conforming students

	Clearly communicating process, values, and expectations	Working with institutional leaders to send a formal communication condemning national incidents of anti-Black violence, and affirming the institution's commitment to equity and justice
		Educating academic deans and unit leaders of the administration's interpretation that the 2011 Dear Colleague Letter expands Title IX to include dimensions of gender identity and sexuality
Community Care	Connecting impacted parties to care resources	Distributing student resources related to mental health care, community gatherings, and other institutional care resources following a national incident of islamophobia
		Curating community-based advocacy resources for blind, deaf and hard of hearing people and delivering resources to respondents who identify themselves in a campus climate survey
	Organizing and facilitating intergroup or intragroup dialogue	Hosting a processing event where communities can connect and share their feelings following an incident of transphobic violence
		Holding space for white identifying students to examine their racial attitudes and imagine opportunities to lead racial justice
	Pursuing restorative justice	Dialoguing with parties impacted by community incidents of anti-Semitism to imagine what healing and restoration may look like, and initiating short- and long-term goals
		Establishing a formal restorative justice protocol following the use of racially insensitive language where impacted and responsible parties dialogue and negotiate a path forward
Education and Culture Change	Examining and shifting community norms and values	Organizing a values campaign that encourages empathy practices like active listening
		Starting a bystander intervention program which attempts to reduce and mitigate racial microaggressions
	Discerning and advancing essential knowledge, skills, and attitudes	Researching and sharing contemporary readings and online resources for trans/non-binary access, belonging, and success
		Organizing campus workshops to raise consciousness and allyship for undocumented students

| | Taking responsibility for community learning | Establishing a community of practice among college teachers who want to develop an anti-racist curriculum, pedagogy, and assessment |
| | | Soliciting resources from institutional stakeholders to fund keynote speakers with expertise in feminist research methods |

Empowerment is another action that a mentor can take to support a mentee's wellbeing. We define empowerment as a mentor's support or encouragement as a mentee clarifies their thinking, makes meaning of their experience, or deliberates their course of action. As shown in Table 2, strategies for empowerment include self-advocacy (e.g., clarifying individual/community mission, vision, and values; mapping resources and spheres of influence; discerning strategies, short and long term goals), self-care (e.g., attending to physical, emotional, and spiritual wellness; addressing and healing from trauma, cultivating relationships with self and others), and education and personal growth (e.g., researching complexities of the issue, pursuing insight development, engaging in perspective taking).

For example, consider a female full professor in physics who has been mentoring a non-binary undergraduate in a research experience for three months. While this mentor-mentee pair is still building trust, the student has been very open with the mentor about their identities and the mentor is very intentional about using the student's preferred pronouns. One day, the student opens up to the mentor that the instructors of each of their classes that day had misgendered them in front of peers. The mentor responds with empathy and validation, then asks the student if there is anything they can do to leverage their position of power at the institution to educate these instructors and their departments about the harm associated with misgendering. The student does not want to call more attention to the situation and asks the mentor not to engage in advocacy. Instead, the mentor continues listening to the student talk about how tired they are of wondering when their identities will be fully recognized. When the student is finished talking, the mentor asks the student about other spaces where they feel safe and discusses ideas for what the student can do over the weekend to restore their energy.

Table 2. *Examples of empowerment.*

Dimensions	Goals	Examples
Self-Advocacy	Clarifying individual/community mission, vision, and values	Listening reflectively to a student whose voice is being marginalized during team meetings, identifying with her how the team's behaviors are disrespectful and unproductive
		Helping an Asian-identifying student work through their confusion and surface the implicit expectations that were violated when their major professor expressed racially tokenizing views
	Mapping resources and spheres of influence	In support of a non-binary student who is experiencing repeated misgendering, connecting them to faculty with similar concerns and exploring their interest in forming a coalition

		Working with an indigenous student who is angered by the erasure of indigenous histories in their curriculum, reflecting on the systems and power holders in the institution where change can occur
	Discerning strategies, short and long term goals	Working with queer students mobilizing to confront heteronormativity in the institution, challenging the group to articulate a strategy which prioritizes their energy and sustainability
		As a student reflects on her experiences with anti-Blackness in her residence hall, inquiring in what situations it is most congruent to confront and most congruent to navigate
Self-Care	Attending to physical, emotional, and spiritual wellness	Directing a student researcher to campus resources that support whole-person wellness
		Hearing that a mentee is exhausted by their numerous commitments educating peers on the needs of the deaf and hard of hearing, asking what activities are personally restoring
	Addressing and healing from trauma	Informing a bi-racial student about the mission and vision of a campus program to increase understanding of one's multiracial identities
		Normalizing accessing counseling services for a first-generation college student, offering to walk them over and sit with them as they wait during drop-in hours
	Cultivating relationships with self and others	Opening dialogue with a queer student to explore the conditions of their relationships and examine which relationships are affirming and which relationships are in need of transformation
		On the back-end of a distressing incident of islamophobia, encouraging a student to take time to reflect, make meaning, and honor their resilience
Education and Personal Growth	Researching complexities of the issue	Exploring with a trans student where their experiences with discrimination and marginalization are located at individual, institutional, and structural levels
		While listening to a white student express concerns about the gender wage gap, challenging her to recognize and examine the unique pay disparities experienced by women of color

	Pursuing insight development	Opening space to reflect with a student about how they may successfully navigate a racist academic culture while maintaining their congruence and integrity
		Following a difficult interaction with a supervisor, inviting a student to reflect on and name their thoughts, feelings, and behavioral impulses and explore if their response aligned with their values
	Engage in perspective talking	Encouraging a non-binary student to take the perspective of family and friends who are experiencing ambivalence with their coming out, inviting empathy with the process of change
		Challenging a student researcher and activist to consider dialogue as one of their tools for institutional change, inviting reflection on why it is difficult to connect with people with whom we disagree

We regard the balancing of advocacy and empowerment as both contextual and developmental. A mentor's advocacy and empowerment choices will be informed by the pair's identity dynamics; the sociopolitical context of their university; a power analysis of the mentor's social, political, and institutional position; and many other complicating factors. While each situation is unique, we expect changes in the advocacy and empowerment balance over time as the mentee experiences psychosocial and cognitive shifts in their development as a scholar. Much like a teacher's nimble response to the arc of a student's developmental needs as they mature as a self-directed learner (Knowles, 1975; Tough, 1978; Grow 1991, 1994), a mentor's role may gradually shift from an *expert* disposition *(advocacy)* toward a *consultant* disposition *(empowerment)*.

However, context is paramount. Throughout the student's research experience, the mentor will discern and enact important forms of advocacy and empowerment that help to propel and uplift the student through challenging encounters with inequitable systems and structures in higher education and harmful social and political interactions. Both advocacy and empowerment can be extremely powerful forms of mentor support. The types of advocacy and empowerment that a student seeks will change over time and context as they build confidence, social and cultural capital, and gain life experiences. The section below guides us through several considerations for deciding whether, and how, to enact these forms of mentor support.

Cautions For Mentors
This framework has value for mentors who want to make conscientious decisions as they support students through issues of bias, marginalization, and discrimination. We expect many mentors, like ourselves, to have made mentoring decisions when supporting mentees through challenging sociopolitical issues. We find benefit in examining our meaning-making and decisions through the advocacy and empowerment framework where advocacy is the process of acting on behalf of or in support of another person, place, or thing; and empowerment is the process of helping a student become stronger and more confident, especially in leading their life and claiming their rights. In this section, we call attention to several cautions for mentors interested in utilizing our framework. These cautions will aid in more thoughtful, deliberative, and intentional decision-making.

Caution #1: It can be harmful to skew too far toward advocacy or too far toward empowerment.
When advocacy and empowerment are attuned in a mentoring relationship, the student should feel that their experiences are valid and that they are worthy of the mentor's time and attention. An appropriate amount of empowerment should leave the student feeling cared for and give them a sense of collaboration in the mentoring relationship. An appropriate amount of advocacy should leave the student feeling affirmed, nurtured, and supported.

However, in any supportive effort, it is possible for a mentor to skew too heavily towards empowerment or too heavily towards advocacy (Figure 1). When a mentor leans too heavily on empowering a student, the student may feel isolated or overwhelmed. Imagine a student who is still relatively dependent with their learning and is in distress because they are experiencing self-doubt in college, blaming themselves for failed research experiments, and just found out that they do not qualify for an exciting, federally-funded research program because they are undocumented. If a mentor does not critically examine these contexts and the policies related to them and acknowledge resources available to the student, they may be colluding with systems of oppression. An ineffective mentor in this situation would put too much emphasis on the student's agency and have a "let me know what you need" response. Imagine a second, more self-directed learner who comes to their research mentor and opens up about a microaggression they experienced at the professional conference they attended together. If the mentor gives the student moral support and resources but does not offer to engage in any advocacy, the student might be left wondering why the mentor did not take action to address the issue. In this case, the stress and trauma that the student is experiencing continue to be their own burden.

On the other hand, when a mentor leans too heavily on advocacy, the student may feel infantilized. Imagine the same two examples above but where the faculty mentor immediately jumps into action by sending a strongly worded email to the federally-funded research program that excludes undocumented students or by reprimanding the colleague who enacted the microaggression and sending a statement to conference attendees about combating racism in that particular professional society. In each case, if the student was not consulted or considered a collaborator in this advocacy work, they may feel excluded and disenfranchised. This well-intentioned advocacy might even have unintended negative consequences for the student as they advance in their research career. Because this situation is grounded in the student's lived experience, they should have the most control over the forms of advocacy that take place (see Caution #2).

Figure 1. *Finding a Balance of Advocacy and Empowerment*.

ADVOCACY SKEW

- Disenfranchising
- Infantilizing
- Paternalizing
- Imposing/Projecting
- Inhibiting
- Enmeshing

BALANCED ADVOCACY & EMPOWERMENT

- Caring
- Collaborative
- Deliberative
- Affirming
- Nurturing
- Supportive

EMPOWERMENT SKEW

- Isolating
- Alienating
- Neglecting
- Overwhelming
- Colluding
- Stressful

Note. It can be harmful to skew too far towards advocacy or empowerment in one's mentoring practice. Relying too heavily on advocacy can leave a student feeling disenfranchised or infantilized, whereas leaning too heavily on empowerment can isolate or alienate a student.

Caution #2: The student should inform any advocacy the mentor engages in as it relates to their experience.

The mentor should always ask the student directly if, and how, they are open to being supported through advocacy. While advocacy is usually well intended, its impact can be harmful if misguided. In some situations where white mentors are working with students of color, advocacy may be seen as an act of "white saviorism," a behavioral pattern where people identifying as white uplift people from minoritized racial and ethnic communities for self-serving purposes (Sondel, Kretchmar, & Hadley Dunn, 2022).

Slowing down, critically reflecting on advocacy behavior, and engaging in explicit communication with a mentee may deter what Martinez-Cola (2020) refers to as "collector" behavior. Martinez-Cola uses the label "collectors" to categorize white mentors in higher education who are often well-intended but appear to want to add students of color to the group they have chosen to help. These "collectors" engage in advocacy in ways that primarily serve themselves, for example, by bringing a student of color to a conference to showcase the diversity on the team but then not introducing the student to important colleagues or letting them present the work they participated in. When engaging in these forms of advocacy, the mentor appears to be more concerned with publicly demonstrating their commitment to diversity, equity, and inclusion than fully uplifting the mentee and contributing to their success. Being motivated by this "white savior complex" and following the misguided need to "rescue" those who need their help is extremely problematic.

These situations can be avoided by clearly communicating with the student about the forms of advocacy you plan to engage in that involve them. When the student actively informs the advocacy that takes place, the intention and impact of advocacy can be student-centered and student-driven.

Caution #3: The mentor should consider their own positionality when making decisions about advocacy and empowerment.

While our guidance centers on the student experience, it is important to consider the mentor's positionality, or relative power and privilege, when utilizing the AE framework. The translation of this framework depends heavily on a power analysis of the social and political locations of the mentor and mentee with respect to race, gender, class, disability, and other social systems. For example, a mentor identifying as a white man may have different access, capacity, or impact when navigating issues of racism and sexism compared to another mentor identifying as a Black woman. For a young researcher who also identifies as a Black woman and is struggling with bridging her foundational or pre-college identities with a new research identity, a mentor who has navigated those same identity-based challenges may be able to provide more nuanced forms of empowerment. A white, male mentor may need to dig deeper to find ways to support the student through identity-based challenges that do not align with his own.

A mentor should be open and honest with the mentee about their own vulnerabilities and capacity when advising on issues of difference, power, and discrimination. In the example above, the white, male mentor could have a conversation with the Black, female student about his own lack of understanding and sit in the discomfort of not being the expert as he learns how to support her. There may also be a situation where a student asks for a form of advocacy that the mentor is uncomfortable engaging in. For example, if the mentor identifies as Black and is working at a predominately white institution, they may have their own valid concerns about advocacy related to

job security and safety. In cases like these, the mentor could ask if there are other ways to support the student that are more within their capacity.

It is also important to consider a mentor's political and institutional position when translating the AE framework into practice. In other words, the mentor's location in systems of power and privilege and their access to resources and information should inform how they balance advocacy and empowerment in their relationship with the undergraduate researcher. What role does the mentor play at the institution? Are they a contingent faculty member, a relatively new assistant professor, a full professor, a department chair, or a dean? How does their institutional position impact the forms of advocacy they can confidently engage in? Their role within the institution will inform their access to information and resources that can drive important forms of advocacy. A power analysis of the mentor's social, political, and institutional position can help a mentor understand how to balance advocacy and empowerment in relation to a mentee. Student's expectations for advocacy may change based on the mentor's position within the institution, so it is important for the mentor and student to keep the dialogue open.

Given the power differential between undergraduate researchers and their mentors, the mentor should take responsibility for initiating the conversation about how they can help, rather than expecting the student to inform them about the most appropriate form of support. It may be the case that the student does not actually want the mentor to jump into action and, instead, they are looking for someone to listen and reassure them that their experiences are valid. Again, if a student does want the mentor to advocate for them, it is critical that the student first approves of the advocacy plan and has the most authoritative voice in guiding the forms of advocacy the mentor engages in.

Caution #4: The mentor must embrace discomfort.
We have spoken with mentors who do not feel "qualified" or comfortable discussing challenging issues like racism, xenophobia, and homophobia and use this as an excuse to disengage in advocacy (and sometimes avoid these conversations altogether) with students who are navigating sociopolitical challenges. Some faculty in STEM disciplines believe that students do not experience any identity-related challenges in their research spaces because STEM is objective in nature and this objectivity does not allow for discrimination or bias (Pierszalowski, 2019). Not feeling comfortable discussing identity-based challenges or simply claiming that identity-based challenges do not occur are excuses for nonaction. Avoiding or saving these conversations for diversity, equity, and inclusion "experts" perpetuates silence around racial inequities in white-dominated spaces (DiAngelo, 2012). We all have work and learning to do to make our research spaces more equitable and inclusive. It is important that we are all willing to learn how to engage in advocacy and empowerment alongside students, even if it does mean moments of discomfort (Shanahan, 2018). A mentor can develop their capacity to sit in discomfort by following expert guidance on interracial dialogue (Oluo, 2018); educating themselves on foundational histories and concepts of difference, power, and inequality (Adams et al., 2018; Sensoy & DiAngelo, 2017); or creating and sustaining spaces to explore tense sociopolitical subjects with colleagues and collaborators (Singleton & Linton, 2006). We recommend opening dialogue with students about a mentor's own learning and insecurities. This may strengthen the mentoring relationship through authenticity and vulnerability. Centralized offices of undergraduate research are often supportive spaces where mentors can seek opportunities and resources for continuous improvement in navigating relationships with undergraduate researchers.

Conclusion
The challenges that minoritized students experience as they simultaneously navigate research and the broader higher education landscape are complex and interconnected. For example, students who experience bias and discrimination in academic or social spaces will inevitably carry trauma and emotions associated with those experiences into the research space (i.e., harmful experiences

cannot be left at the door when research begins). Effective undergraduate research mentors are those who are willing to support a student as a whole person exactly as they are: someone with unique life experiences, feelings, emotions, family obligations, strengths, insecurities, etc., in addition to their skills and commitment to research. As a mentor works to develop research capacity in a student, they must also attend to the student's psychosocial needs as they navigate personal, social, and political challenges that are sometimes, but not always, tangential to their research.

In this article, we propose that an integral part of effective mentorship is connecting with students about their lived experiences, advocating for them, and empowering them where appropriate. That being said, we recognize that most mentors of undergraduate researchers have not been offered extensive training in effective and inclusive mentoring strategies. We have developed the AE framework as a way to help research mentors conceptualize where advocacy and empowerment may be appropriate, what it might look like in practice, and how to balance these two supportive behaviors. The AE framework promotes whole-student development by helping mentors identify instances where students would benefit from a mentor's advocacy or empowerment. It also demonstrates how students' experiences and needs can change over space, time, and context and how effectively navigating student advocacy and empowerment takes intentionality and collaboration.

The AE framework was originally developed to stimulate career-long diversity, equity, and inclusion learning for faculty and staff in higher education. In this article, we have situated the framework within the specific context of undergraduate research mentorship and look forward to using this framework in our own mentoring practices and in the undergraduate research mentorship workshops that we facilitate at our institutions. That being said, we can easily translate the value of this framework to other spaces, both within and outside of higher education, including centers that support survivors of gender-based violence, community-engaged learning programs, faculty development programs, graduate and undergraduate advising, multicultural programs and services, etc. We encourage adaptations of this framework and also welcome those with the capacity to apply analytical methods to test this framework and its validity across contexts. We hope that exploring and utilizing this framework will ultimately help us validate students' lived experiences and uplift minoritized voices to make our academic spaces more welcoming and inclusive.

References

Adams, M., Blumenfeld, W. J., Catalano, D. C. J., Dejong, K., Hackman, H. W., Hopkins, L. E., Love, B., Peters, M. L., & Zúñiga, X. (Eds.). (2018*). Readings for diversity and social justice* (4th ed.). Routledge.

American Psychological Association. (2017). *Multicultural guidelines: An ecological approach to context, identity, and intersectionality*. https://www.apa.org/about/policy/multicultural-guidelines

Baker, V. L., Greer, J., Lunsford, L. G., Pifer, M. J., & Ihas, D. (2017). Documenting the aspiration gap in institutional language about undergraduate research, scholarship, and creative work. *Innovative Higher Education, 42*(2), 127–143. https://doi.org/10.1007/s10755-016-9372-9

Baker, V. L., McCaffrey, V., & Manning, C. E. N. (2022). Fostering professional development through undergraduate research: Supporting faculty mentors and student researchers. *Mentoring & Tutoring: Partnership in Learning, 30*(2), 216–234. https://doi.org/10.1080/13611267.2022.2057097

Boysen, G. A. (2012). Teacher and student perceptions of microaggressions in college classrooms. *College Teaching, 60*(3), 122–129. http://www.jstor.org/stable/23240292

Carlone, H. B., & Johnson, A. (2007). Understanding the science experiences of successful women of color: Science identity as an analytic lens. *Journal of Research in Science Teaching, 44*(8), 1187–1218. https://doi.org/10.1002/tea.20237

Chickering, A. W., & Reisser, L. (1993). *Education and identity* (2nd ed.). Jossey-Bass Inc.

Dewey, J., Roehrig, G., & Schuchardt, A. (2021). Development of a framework for the culture of scientific research. *CBE Life Sciences Education, 20*(4), ar65. https://doi.org/10.1187/cbe.21-02-0029

DiAngelo, R. (2012). Nothing to add: A challenge to white silence in racial discussions. *Understanding and Dismantling Privilege, 2*(1). https://www.wpcjournal.com/article/view/10100

Fournier, A. M. V., & Bond, A. L. (2015). Volunteer field technicians are bad for wildlife ecology. *Wildlife Society Bulletin, 39*(4), 819–821. https://doi.org/10.1002/wsb.603

Gentile, J., Brenner, K., & Stephens, A. (Eds.). (2017). *Undergraduate research experiences for STEM students: Successes, challenges, and opportunities.* National Academies Press. https://doi.org/10.17226/24622

Grow, G. (1994). In defense of the staged self-directed learning model. *Adult Education Quarterly, 44*(2), 109–114. https://doi.org/10.1177/074171369404400206

Grow, G. O. (1991). Teaching learners to be self-directed. *Adult Education Quarterly, 41*(3), 125–149. https://doi.org/10.1177/0001848191041003001

Haeger, H., & Fresquez, C. (2016). Mentoring for inclusion: The impact of mentoring on undergraduate researchers in the sciences. *CBE—Life Sciences Education, 15*(3), ar36. https://doi.org/10.1187/cbe.16-01-0016

Halpin, Z. T. (1989). Scientific objectivity and the concept of "the other." *Women's Studies International Forum, 12*(3), 285–294. https://doi.org/10.1016/S0277-5395(89)80006-8

Houser, C., & Lemmons, K. (2018). Implicit bias in letters of recommendation for an undergraduate research internship. *Journal of Further and Higher Education, 42*(5), 585–595. https://doi.org/10.1080/0309877X.2017.1301410

Kawakami, K., Dunn, E., Karmali, F., & Dovidio, J. F. (2009). Mispredicting affective and behavioral responses to racism. Science, 323(5911), 276–278. https://doi.org/10.1126/science.1164951

Kincheloe, J. L. (2008). *Critical pedagogy primer* (4th ed.). Peter Lang Inc., International Academic Publishers.

Knowles, M. S. (1975). Self-directed learning: A guide for learners and teachers. New York: Association Free Press. https://doi.org/10.1177/105960117700200220

Longmire-Avital, B. (2019, March 7). *What's their capital?: Applying a community cultural wealth model to UR.* Center for Engaged Learning. https://www.centerforengagedlearning.org/whats-their-capital-applying-a-community-cultural-wealth-model-to-ur/

Martinez-Cola, M. (2020). Collectors, nightlights, and allies, oh my: White mentors in the academy. *Understanding and Dismantling Privilege, 10*(1), 61–82. https://www.wpcjournal.com/article/view/20275

McCabe, J. (2009). Racial and gender microaggressions on a predominantly-white campus: Experiences of Black, Latina/o and white undergraduates. *Race, Gender & Class, 16*(1/2), 133–151. https://www.jstor.org/stable/41658864

McGee, E. O. (2016). Devalued Black and Latino racial identities: A by-product of STEM college culture? *American Educational Research Journal, 53*(6), 1626–1662. https://doi.org/10.3102/0002831216676572

Miller, R. A., Guida, T., Smith, S., Ferguson, S. K., & Medina, E. (2018a). A balancing act: Whose interests do bias response teams serve? *The Review of Higher Education, 42(*1), 313–337. https://doi.org/10.1353/rhe.2018.0031

Miller, R. A., Guida, T., Smith, S., Ferguson, S. K., & Medina, E. (2018b). Free speech tensions: Responding to bias on college and university campuses. *Journal of Student Affairs Research and Practice, 55*(1), 27–39. https://doi.org/10.1080/19496591.2017.1363051

Monarrez, A., Morales, D., Echegoyen, L. E., Seira, D., & Wagler, A. E. (2020). The moderating effect of faculty mentorship on undergraduate students' summer research outcomes. *CBE—Life Sciences Education, 19*(4), ar56. https://doi.org/10.1187/cbe.20-04-0081

Morales, D. X., Grineski, S. E., & Collins, T. W. (2017). Increasing research productivity in undergraduate research experiences: Exploring predictors of collaborative faculty–student publications. *CBE—Life Sciences Education, 16*(3), ar42. https://doi.org/10.1187/cbe.16-11-0326

Morales, N., Bisbee O'Connell, K., McNulty, S., Berkowitz, A., Bowser, G., Giamellaro, M., & Miriti, M. N. (2020). Promoting inclusion in ecological field experiences: Examining and overcoming barriers to a professional rite of passage. *The Bulletin of the Ecological Society of America, 101*(4), e01742. https://doi.org/10.1002/bes2.1742

Morrison, J. A., Barthell, J. F., Boettcher, A., Bowne, D., Nixon, C., Resendes, K. K., & Strauss-Soukup, J. (2019). *Recognizing and valuing the mentoring of undergraduate research, scholarship, and*

creative activity by faculty members: Workload, tenure, promotion, and award systems. Council on Undergraduate Research, CUR White Paper No. 2.

Nadal, K. L., Wong, Y., Griffin, K. E., Davidoff, K., & Sriken, J. (2014). The adverse impact of racial microaggressions on college students' self-esteem. *Journal of College Student Development, 55*(5), 461–474. https://doi.org/10.1353/csd.2014.0051

Newell, M., & Ulrich, P. (2022). Competent and employed: STEM alumni perspectives on undergraduate research and NACE career-readiness competencies. *Journal of Teaching and Learning for Graduate Employability, 13*(1), Article 1. https://doi.org/10.21153/jtlge2022vol13no1art1534

Oluo, I. (2018). *So you want to talk about race*. Seal Press.

Ong, M., Smith, J. M., & Ko, L. T. (2018). Counterspaces for women of color in STEM higher education: Marginal and central spaces for persistence and success. *Journal of Research in Science Teaching, 55*(2), 206–245. https://doi.org/10.1002/tea.21417

Ong, M., Wright, C., Espinosa, L., & Orfield, G. (2011). Inside the double bind: A synthesis of empirical research on undergraduate and graduate women of color in science, technology, engineering, and mathematics. *Harvard Educational Review, 81*(2), 172–209. https://doi.org/10.17763/haer.81.2.t022245n7x4752v2

Oregon State University. (2023). *Guidance for diversity, equity and inclusion learning.* Institutional Diversity. https://diversity.oregonstate.edu/guidance-diversity-equity-and-inclusion-learning

Palmer, R. J., Hunt, A. N., Neal, M., & Wuetherick, B. (2015). Mentoring, undergraduate research, and identity development: A conceptual review and research agenda. *Mentoring & Tutoring: Partnership in Learning, 23*(5), 411–426. https://doi.org/10.1080/13611267.2015.1126165

Pierszalowski, S. (2019). *Undergraduate research as a tool to promote diversity, equity, and success in STEM: Exploring potential barriers and solutions to access for students from historically underrepresented groups* [Doctoral dissertation, Oregon State University]. ScholarsArchive@OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/1z40m0128

Pierszalowski, S., Bouwma-Gearhart, J., & Marlow, L. (2021). A systematic review of barriers to accessing undergraduate research for STEM students: Problematizing under-researched factors for students of color. *Social Sciences, 10*(9), Article 9. https://doi.org/10.3390/socsci10090328

Reddick, R. (2011). Intersecting identities: Mentoring contributions and challenges for Black faculty mentoring Black undergraduates. *Mentoring & Tutoring: Partnership in Learning, 19*, 319–346. https://doi.org/10.1080/13611267.2011.597121

Reinholz, D. L., & Ridgway, S. W. (2021). Access needs: Centering students and disrupting ableist norms in STEM. *CBE Life Sciences Education, 20*(3), es8. https://doi.org/10.1187/cbe.21-01-0017

Rose, S. M. (1990). Advocacy/empowerment: An approach to clinical practice for social work. *Journal of Sociology and Social Welfare, 17*(2), 41–51. https://psycnet.apa.org/record/1990-31793-001

Rose, S. M. (2000). Reflections on empowerment-based practice. *Social Work, 45*(5), 403–412. https://doi.org/10.1093/sw/45.5.403

Rosser, S. (2008). Gender inclusion, contextual values, and strong objectivity: Emergent feminist methods for research in the sciences. In S. N. Hesse-Biber & P. Leavy (Eds.), *Handbook of emergent methods* (pp. 53-72). The Guilford Press.

Rowlett, R. S., Blockus, L., & Larson, S. (2012). *Characteristics of excellence in undergraduate research (COEUR),* pp. 2–19. Council on Undergraduate Research.

Sell, A. J., Naginey, A., & Stanton, C. A. (2018). The impact of undergraduate research on academic success. *SPUR, 1*(3), 19–29. https://doi.org/10.18833/spur/1/3/8

Sensoy, Ö., & DiAngelo, R. (2017). *Is everyone really equal? An introduction to key concepts in social justice education.* Teachers College Press.

Shanahan, J. O. (2018). Mentoring strategies that support underserved students in undergraduate research. In J. Moore, M. Vandermaas-Peeler, & P. Miller (Eds.), *Excellence in mentoring undergraduate research.* Council on Undergraduate Research.

Shanahan, J. O., Ackley-Holbrook, E., Hall, E., Stewart, K., & Walkington, H. (2015). Ten salient practices of undergraduate research mentors: A review of the literature. *Mentoring & Tutoring: Partnership in Learning, 23*(5), 359–376. https://doi.org/10.1080/13611267.2015.1126162

Singleton, G. E., & Linton, C. (2006). *Courageous conversations about race: A field guide for achieving equity in schools.* Corwin Press.

Smith, A. (2016). Heteropatriarchy and the three pillars of white supremacy: Rethinking women of color organizing. In INCITE! Women of Color Against Violence (Ed*.), Color of violence: The INCITE! anthology* (p. 0). Duke University Press. https://doi.org/10.1215/9780822373445-007

Sondel, B., Kretchmar, K., & Hadley Dunn, A. (2022). "Who do these people want teaching their children?" White saviorism, colorblind racism, and anti-Blackness in "No Excuses" charter schools. *Urban Education, 57*(9), 1621–1650. https://doi.org/10.1177/0042085919842618

Stefanucci, J. K. (2019). Publish with undergraduates or perish?: Strategies for preserving faculty time in undergraduate research supervision at large universities and liberal arts colleges. *Frontiers in Psychology, 10*, 828. https://doi.org/10.3389/fpsyg.2019.00828

Stout, J. G., Tamer, N. B., & Alvarado, C. J. (2018). *Formal research experiences for first year students: A key to greater diversity in computing?* Proceedings of the 49th ACM Technical Symposium on Computer Science Education (pp. 693–698). https://doi.org/10.1145/3159450.3159472

Sue, D. W., Sue, D., Neville, H. A., & Smith, L. (2019). *Counseling the culturally diverse: Theory and practice.* Wiley. http://www.worldcat.org/oclc/1052905725

Tough, A. (1978). Major learning efforts: Recent research and future directions. *Adult Education, 28*(4), 250–263. https://doi.org/10.1177/074171367802800403

Walkington, H., Stewart, K. A., Hall, E. E., Ackley, E., & Shanahan, J. O. (2020). Salient practices of award-winning undergraduate research mentors: Balancing freedom and control to achieve excellence. *Studies in Higher Education, 45*(7), 1519–1532. https://doi.org/10.1080/03075079.2019.1637838

Yosso, T., Smith, W., Ceja, M., & Solorzano, D. (2009). Critical race theory, racial microaggressions, and campus racial climate for Latina/o undergraduates. *Harvard Educational Review, 79*, 659–691. https://doi.org/10.17763/haer.79.4.m6867014157m707l