

TITLE: *Cross-Institutional Mentoring Communities: a virtual mentoring model*

AUTHOR (S): Minerick, A.R., Cervato, C., Bilen-Green, C., Koretsky, C., Rouleau, M.

ORGANIZATION: *Michigan Technological University, Iowa State University, North Dakota State University, Western Michigan University, Michigan Technological University.*

ABSTRACT

An increasing body of work is exploring mentoring within contexts that go beyond traditional one-on-one mentoring, including learning communities and mentoring circles. Research indicates that these alternative forms of mentoring better support all faculty, including those whose identities tend to lead to isolation in STEM: BIPOC faculty, women, and LGBTQ+. Group mentoring approaches can address multiple facets of the mentee(s) as a whole person in an efficient manner.

Cross-Institutional Mentoring Communities (CIMCs) were designed to create networks of mentoring as a support and feedback mechanism for faculty who may also face challenges related to their personal characteristics and/or specific identities, especially intersectional identities traditionally underrepresented in STEM, or simultaneous demands of an academic career and caregiving responsibilities. Communities were formed with two to three junior and/or mid-career faculty and one or two senior mentors from four midwestern institutions.

With the goal of retention at the forefront, quantitative and qualitative assessments of the CIMCs were designed to enable formative feedback to guide improvements to the CIMC support network and further implementation phases. While it was not originally the intent, the CIMCs also provided an opportunity to more deeply examine how the pandemic impacted women faculty with identities that compound disadvantage.

Virtual meetings were held at roughly bimonthly intervals. Mentors were regularly provided guidance on mentoring and topics to discuss with their mentoring groups. While the pandemic impacted the original timeline and topical foci of the CIMCs, the virtual format of the CIMCs provided an opportunity to offer resources to assist faculty in navigating these unprecedented challenges: CIMC mentors and groups followed a "just in time" format with topics introduced and addressed responsively.

LITERATURE REVIEW

This paper outlines a cross-institutional mentoring approach implemented at four midwestern research institutions and designed to connect assistant and associate professors with more senior mentors who share their intersectional identities. Mentoring models in academia have evolved in recent decades. Transitions from the sink-or-swim attitude to providing guidance were slow at many institutions. The predominant model for guidance that emerged was one-on-one mentoring, with the onus on the least experienced individual to voice what they needed from a senior colleague in their department/field. This conundrum, when in an unfamiliar system, around figuring out where one should go and how to navigate there is in Lewis Carroll's famous exchange between the Cheshire Cat and Alice. Just as the Cheshire Cat's riddles provided confusing and incomplete guidance to Alice, a single senior faculty member with individual

lived experiences is not fully equipped to provide guidance to a junior faculty member with diverse and different lived experiences.

In addition, there is often a normative assumption of career paths and lived experiences that are conflated with the perception of abilities in STEM fields (Ghosh et al., 2020). As such, junior faculty have found one-on-one mentoring insufficient on their own and have sought additional mentoring connections that simultaneously build community. Alternative models include learning communities, mentoring circles (Baldwyn & Linnea, 2010), networks (de Janasz & Sullivan, 2004), collaborative (Goerisch et al., 2019), collaborative cohorts, and episodic mentoring (Wheaton & Moore, 2020).

For faculty with lived experiences and identities that have historically led to isolation in STEM, these alternative forms of mentoring better support faculty; identities include BIPOC faculty (Wheaton & Moore, 2020), women (Beck et al., 2022a), LGBTQ (Vaccaro et al., 2019), and other underrepresented individuals. The Cross-Institutional Mentoring Communities are an adaptation of collaborative mentoring and mentoring circles. Here we briefly review peer mentoring models in the context of our cross-institutional format.

Group mentoring approaches display advantages for the mentee(s) and mentor(s). While a single mentor is unlikely to respond to all needs, experiences, and perspectives, co-mentors and peer mentors enable dialogues such that multiple perspectives can be explored, and the mentee is positioned to decide their own, well-informed strategy (Sorcinelli & Yun, 2007). Mentees are thus able to cultivate multiple mentoring relationships (Zerzan et al., 2009). This dynamic mentoring enables "multiple 'mentoring partners' in non-hierarchical, collaborative, cross-cultural partnerships" (Sorcinelli & Yun, 2007). Further, mentor-mentee roles can flex based on lived experiences of group members (Morgan & Saunders, 2014). As women and faculty with underrepresented identities face varied challenges at different career stages, "writing mentors, teaching mentors, work/life balance mentors, mentors from their racial/ethnic group and mentors from other racial/ethnic groups, etc." (Crawford, 2015) can be extremely helpful. These peer-, circle-, network-, collaborative-, cohort-, and multiple-mentoring models enable broad perspectives of the academic system that acknowledge deeply embedded inequities and intersectional oppressions pervasive in academic culture while providing a "shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems" (Beck et al., 2022b). In general, inclusive mentoring models position the individual to make their own decisions and move beyond conformative or fixed individual approaches.

As Alice progresses in Wonderland, the Cheshire Cat, the Mad Hatter, and others become collaborators and friends. Similarly, the Cross-Institutional Mentoring Communities (CIMCs) help form communities of trusted colleagues and friends. Community-based models display benefits such as "goal setting, connection to the broader institutional community, interdisciplinary group makeup, friendship, being connected to a group, and support of professional development" (Rees

& Shaw, 2014). Thus, CIMCs help reduce isolation by connecting individuals from similar identity groups and disciplines in supportive groups that increase skills and coping for career success.

CONTENT

Academia is an "inherently individual and competitive reward system" (Smith et al., 2013). CIMCs were developed to help all individuals thrive within that system. The CIMCs are year-long mentoring committees that partner mentees with mentors who have experienced similar challenges (usually 2-3 mentees, 1-2 mentors). CIMCs are an evolutionary extension of Michigan Tech's Early Career Management (ECM, Michigan Tech, 2022a) and Advanced Career Management (ACM, Michigan Tech, 2022b) NSF ADVANCE initiatives. In early spring 2020, a call for interest was broadcast through all available communication channels at the four institutions in the ADVANCE Midwest Partnership - Joining Forces: Iowa State University, Michigan Technological University, North Dakota State University, and Western Michigan University. General emails were distributed in addition to personal emails directed to key colleagues. In the first year (2020-2021), the call described the CIMC vision to create networks of mentoring as a robust support and feedback mechanism for faculty with personal characteristics and/or specific identities, especially intersectional identities traditionally underrepresented in STEM (e.g., women of color, LGBTQIA+ women, differently-abled women) or simultaneous demands of an academic career and family caregiving responsibilities. By the second year of the CIMCs (2021-2022), the call also emphasized forming networks of colleagues to simultaneously assist with career obstacle problem-solving while cultivating community and belonging.

A total of 21 CIMCs with four to seven members participated over the project's two years. Participants predominantly hailed from STEM departments; all were from the four institutions. Of the participants, 37 were assistant professors, 22 were associate professors, and 23 were professors, with an additional 17 in other academic positions (lecturer, professor of practice, etc.). Of the mentees/mentors, 65 (70%) identified parent/caregiving as an important identity, approximately 50 (50%) identified race/ethnicity as an important identity, 14 (15%) identified LGBTQIA+, and 62 (67%) self-identified gender as an important identity and shared their gender as women.

Given that the COVID shut-down and subsequent stages of pandemic-altered academic life coincided with the first and second years of the program, the emphasis on reducing isolation and exclusion and developing additional inter-institutional exchanges was appealing to many. Participants responded to the call for interest by completing a form to provide discipline, demographic, and other characteristics/identities (e.g., gender, race/ethnicity, parent/caregiver, country/region of origin, LGBTQIA+, disability, and others). This information was used to assemble CIMCs with mentees and mentors to match lived experiences, similar identities, and/or

discipline. Whenever possible, participants from different institutions were grouped. Because of different institutional sizes and STEM disciplinary areas, some institutions were overrepresented in some of the CIMC groups compared to others.

The goals of the CIMCs were shared with participants and included:

- CIMCs are cross-institutional and organized around dimensions of intersectional identities.
- Communities include mentors who can personally identify with the concerns of individuals with intersectional identities by matching self-identified identity attributes among individuals at the partner universities.
- CIMC mentees at the assistant and associate professor ranks pursuing promotion are encouraged to participate.
- Overarching goals are to improve faculty work/life experiences, increase retention, and support career success and progression.
- CIMCs offer opportunities for faculty mentees to explore questions and share obstacles to career progress that may be difficult to recognize or overcome, and also provide a network that will amplify mentees' career achievements, as well as support and encouragement to grow professionally.
- CIMCs provide opportunities for faculty mentors to use their knowledge and lived experiences to facilitate the professional and personal growth of more junior faculty who share their identities.
- CIMCs provide a venue to develop and share successful support strategies that can be institutionalized at the partner institutions and eventually disseminated to other institutions.

Once participants were organized into groups, a virtual orientation session was conducted early in the fall. This allowed mentees to meet mentors, ask questions about the program, and increase comfort with other participants. Mentors were guided to find a common meeting time and organize the meetings onto calendars at a regular interval of approximately every 2-3 weeks. Topics for discussion were seeded in one of three ways: direct emails to all participants, a Jamboard for mentors and organizers to brainstorm and record, and a pre-compiled list of Guiding Questions that were developed from the Early and Advanced Career Mentoring programs at Michigan Tech (Michigan Tech, 2022a).

The direct emails to participants and mentors were crafted from current topics, an approach that was particularly useful during the earlier stages of the COVID-19 pandemic. It enabled the program to distribute resources from the literature and other academic support resource sites along with a conversational introduction. Topics ranged from personal challenges with caregiving to professional interactions with colleagues.

Mentors were given additional resources either via email or through an interactive Jamboard. This enabled mentors whose mentees had asked questions on topics to share those with other mentors and compile and share current, relevant resources. Topics such as teaching dilemmas, co-authorship issues, merit and promotion criteria/processes/decisions, graduate student management, professional conflicts and barriers were shared. Further, all members of the CIMC benefitted from the collective learning such that people were not left to wrestle with their situations in isolation.

Lastly, the list of guiding questions could be pulled up and skimmed by mentors to prepare for the next meeting in case conversations ever faltered. These topics included physical and mental health and resiliency, identity-related dynamics, academic culture, research, budget management, publishing and scholarly work, safety, managing researchers/scholars, teaching, service, tenure and promotion, and networking. Questions were developed to convey the importance of prioritizing the whole self to seek happiness, goal achievement, and career satisfaction.

Closed-ended surveys and semi-structured interviews were conducted to provide a multi-modal assessment of the CIMC program. The closed-ended survey (35% response rate) found that 79% of respondents agreed or strongly agreed that they were better able to navigate or manage career challenges as well as work/life challenges due to their CIMC experience (these were responses to two separate questions with the same percentage agreement and a slight shift toward the "agree" end of the spectrum for the latter response). 58% reported that they were more confident in their promotion and tenure process, while 37% reported that they were more satisfied with their position at their university as a result of their CIMC experience (based upon the same combination of "agree" and "strongly agree" responses). The latter result was lower than desired but also particularly hard to decouple from respondent satisfaction or dissatisfaction with their COVID-19 pandemic experience.

In addition to the broad findings from the closed-ended survey that indicated the CIMCs were having a positive impact on participant's ability to navigate or manage career and work/life challenges, a series of semi-structured interviews were conducted with mentors and mentees (a total of six interviews were completed with three mentors and mentees each) to probe more deeply into the responses provided in the closed-ended survey. Overall, both mentors and mentees reported high satisfaction levels with their CIMC experience, and most were very appreciative of the opportunity to connect with faculty at other institutions facing similar career and work/life challenges. However, the level of satisfaction reported was strongly associated with the degree to which the participants felt that their mentorship group aligned well. Feedback from these semi-structured interviews suggests that the matchmaking process used to pair mentors and mentees with one another is critical to the success of this experience. An important reason why this was so critical had to do with the fact that most mentors preferred a hierarchically flat interaction style that encouraged mentees to set the agenda so mentorship discussions could stay focused on the issues that mattered most to those who needed the greatest

support (e.g., those going up for tenure could focus on the promotion and tenure review process while those struggling to increase student engagement in a remote learning setting during the COVID pandemic could focus on pedagogical strategies, etc.). The fact that participants could learn from the experiences of others facing similar problems but with different potential solutions in a "non-competitive" environment with those outside their university was also highlighted as an important contribution of the CIMC experience. More than anything, interviewees stressed the importance of being able to establish a bond with others who they would never have gotten the opportunity to otherwise connect with. Finally, in an effort to identify ways in which the CIMC experience could be improved, it was found that CIMC discussions tended to focus primarily on issues related to navigating career obstacles and establishing a greater sense of belonging beyond one's one university, but little to no discussion was focused on navigating issues of intersectionality even though mentors were encouraged to specifically pay attention to these issues and mentees were given ample opportunity to bring these challenges to the table. The main takeaway was that the CIMC experience was extremely valuable for those who found connections outside of their university with people facing similar circumstances but that there was also no guarantee that the CIMC experience would be able to directly address those issues found to be most persistently disadvantageous to individuals facing high levels of intersectional and/or institutionalized barriers.

CONCLUSION

Cross-Institutional Mentoring Communities were formed in the academic years 2020-2021 and 2021-2022, involving mentees and mentors from four U.S. midwestern research institutions. Over two academic years, CIMCs initially brought together over 60 faculty (of the 99 who had initially signed up) and provided support to assistant and associate professors in mostly STEM disciplines who identified parent/caregiving responsibilities, gender, and race/ethnicity as one or more of their important identities. These cross-institutional communities have been particularly effective for issues that faculty find difficult to express to local mentors and for faculty who may feel isolated due to low representation of certain intersectionalities at their institution. We learned the importance of remaining flexible in CIMC programming, to not only take into account institutional differences but also overall contextual issues (such as the presence of a pandemic, racial unrest, budget cuts, leadership changes, etc.). Because of their unique characteristics, CIMC communities offer more freedom to communicate difficult situations and possibly less loyalty to the group. This dual aspect requires dynamic management for affinity (similarities) and value (learning).

We found that the benefits of mentoring communities are difficult to measure fully using traditional evaluation methods. For example, survey items may provide little information as to why a certain agreement/disagreement to the question was chosen, and one may not want to identify and compare URM responses to majority group responses given low numbers and privacy/confidentiality concerns. However, other feedback modalities, like focus groups,

informal feedback, and interviews, have indicated connections and communities have been formed and remain active beyond the academic year programming. Additional focus is needed to better support identity-specific discussions. Feedback also highlights that challenges faced by underrepresented individuals are pervasive and deep-rooted; while CIMCs provide support, cross-institutional mentoring is limited in countering these experiences.

In summary, the CIMCs have leveraged growing cross-institutional relationships to create near-peer and senior-peer mentoring spaces for individuals seeking whole-person support and professional mentoring. This emergent and promising mentoring model can transform academic mentoring, particularly for individuals, including postdocs and possibly graduate students, underrepresented in STEM disciplines and whose intersectional identities do not fit in the traditional one-on-one mentoring approach.

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