Mentoring diverse graduate students in agriculture, geoscience, and related disciplines: Are you a mentor?

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Mentoring starts from within the faculty member – a mentor guides a student from situation to solution using their lived experiences and expertise

Faculty manage many, if not all, complex aspects of their respective research programs. This includes the management of research endeavours, fostering of collaborative relationships, facilitating student projects, and creating course content.

Many of these skills are taught (directly or indirectly) at the graduate or post-doctoral program level. Mentoring is a skill, I believe, not taught directly or indirectly. Mentoring starts from within the faculty member. A mentor guides a student from situation to solution using their lived experiences and expertise. The mentor also uses professional and interpersonal skills to provide guidance.

In an academic setting this is displayed in a 5th year PhD candidate guiding a 1st year MS student participating in a research program under the direction of a shared faculty member. A tenured faculty member guiding a former student through the tenure track process to a tenured position is another form of mentoring. This article aims to identify attributes through definition, reflect on the need, and suggest qualities of a good mentor.

Defining Mentors and Advisors

Although distinguishing a mentor from an advisor is a seemingly simple task based on Websters definition, it can be quite complex in actuality. Mentors serve a specific role in an individual's academic pursuits. That is, mentors can guide students through varying aspects of an academic program, but generally do not expect to receive tangible benefits of providing the guidance. Mentoring is a selfless act and requires one to see great value in the individual they are mentoring so as to provide optimal guidance and support.

Advising is a formal act in the academic setting through an assessment of the faculty member (e.g., annual review, promotion and tenure process). For example, Masters students select advisors, not mentors, to direct their research. Major advisors financially support (through a Graduate Assistantship or Teaching Assistantship) and serve in an official role verified by the Graduate School as the facilitator of a student's project.

The advisor is also responsible for the progress and products of their research programs. Additionally, the advisor receives recognition for this work when the student graduates, publishes the research, and/or presents the research at the home institution, nationally, or

internationally. Conversely, mentors serve in an unofficial capacity, do not support financially, and may benefit minimally from publications or presentations primarily due to the selfless nature of mentoring.

The Need for Advisors who Mentor

As academic programs and faculty members continually flex to provide advising and mentoring for students, departments and academic programs should consider asking faculty to reflect on specific hindrances a student may have faced while matriculating through their STEM programs. This is especially important for faculty in agriculture, geoscience, and environmental science where students from diverse and underrepresented groups are minimally, if at all, represented.

A growth-mindset by faculty can help them become great advisors and even greater mentors. In the reflection faculty can then ask, how might programs with strong ties to agriculture and geoscience encourage faculty to not only advise but become potential mentors?

I encourage this audience to consider these thoughts when reflecting on who is a mentor, as this individual would:

1. Regard mentoring as an act of service (i.e., non-financial) that tangibly advances the field (e.g., more diverse agriculture and geoscience undergraduates and graduates in the workforce),

2. Regard mentoring as an avenue to “give back” to a recent “underrepresented minority” (URM) graduate needing guidance to navigate the workforce, and

3. Regard mentoring as a potential space to hone outreach skills and relate research to a broader community audience outside the boundaries of academia (i.e., non-technical or non-science audience).

Mentoring Underrepresented Minority (URM) students

URMs are unique groups of students who encompass varying demographics, religions, orientations, physical/mental abilities, genders, and service status (e.g., veterans). Historically, URMs are underserved and underrepresented groups (i.e., Black, Latino, women, minority). URMs face unique challenges based on their group identification. The experiences these groups bring to an undergraduate or graduate program are vast and quite complex.

Faculty navigate the nuances in educational knowledge, life experiences, and innovation to advise students through a degree. In addition, faculty advise students through personal challenges and decisions and in many instances through professional decisions.

Access to a faculty member who not only understands, but can relate is, in some instances, paramount to their success in an academic program. For example, this could be reflective in guidance to prioritize a family situation and defer graduate school

admission so as to encourage optimal success and focus in the program. Or this may be guidance to change/ modify their major research program based on expanding interests. For some faculty, this transition from advisor to mentor is inherent, and for others, a calculated decision.

Nonetheless, the outcome benefits both the student and the academic discipline. That is, the student will find their footing in an agriculture or geoscience discipline or choose another pathway best suited to their interests.

Mentoring URMs in Agriculture and Geoscience disciplines

How is mentoring URMs in agriculture and geoscience disciplines actionable?
• A student shadowing a member of their research team (i.e., PI, postdoc, senior graduate student) during informal activities at conferences, symposiums, community meetings, and extension events,
• Associating the student(s) with relevant social groups based on their expressed interest,
• Introducing the student to one or more faculty members at the national/international level who is in the faculty members area of expertise or associated research group, and
• Asking the student: What are 3 keys to make you successful in this program?

A good mentor can provide these interactions to and for their current or past students while maintaining professional boundaries and sustain academic rigor. A good mentor can empathize with the situations brought to them by diverse students while guiding them to their goal of success, problem solution, or major life decision.

If you reflect on educators, faculty, coordinators, program staff, and administrators throughout your academic program, did you receive mentoring? Reflect on your role in academia today and ask yourself: Are you a Mentor?

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