BSA Section report, 2023
Primarily Undergraduate Institutions (PUI) Section

Committee Membership:

- **Co-chairpersons**: Nathan Jud (serving three years, rotating off 2024)
- **Program Coordinator/ Vice Chairperson**: Carrie Wu (serving two years to complete the previous vice chairperson's term, rotating off 2023)
- **Secretary/Treasurer**: Greg Pec (serving three years to 2025)
- **Student/Postdoc**: Rajeev Ranjan (serving through 2023)

Botany 2022 meeting activities:

The PUI section hosted three NSF-supported events and our annual business meeting at Botany 2022. We also financially supported the participation of current members, prospective members, and other meeting participants to reach a broad audience and encourage participation. Below is a summary of our events as a reference for our participants and for those who did not participate in person. We hope you find this information and the associated resources useful. The meeting was supported by NSF Award 2218485.

Event 1: You are welcome here: Cultivating inclusive research labs at Primarily Undergraduate Institutions with Dr. Kimberly Mulligan

The aim of this Sunday morning workshop was to support principal investigators (PIs) and future PIs at primarily undergraduate institutions (PUIs) as they strive to design and maintain an inclusive and equitable research lab group. To this end, Dr. Mulligan led the workshop focused on aligning expectations in mentoring. Summary slides and handouts are available via a GoogleDrive link at the end of this document. In my assessment, a key take-home point from the workshop was that diversity among STEM students is increasing; identity is important, and retaining students depends on both recognizing how identity shapes our interactions as mentors and mentees and on mentors helping students to build their STEM identity. We had 22 participants and the workshop had three primary objectives for those participating as current and future undergraduate research mentors.

1. Explore how their social identities shape their STEM Identities and impact the mentor-mentee relationship.
2. Develop strategies to help students become active participants in the mentoring relationship in order to create mutually beneficial relationships.

3. Understand how to assist their students in developing a mentoring mosaic to support their success.

The learning outcomes for the workshop were:
1. Increased awareness of our (mentors') cultural backgrounds, values, and assumptions and how these may influence the perceptions of mentees.
2. Improved skills in applying cultural knowledge in relationships with mentees.
3. Gain tools to establish an open line of communication with students to address differences and align expectations in the mentor-mentee relationship.

The workshop began with introductions, recognition of our NSF support, and announcements about the other PUI Section events. Dr. Mulligan welcomed the group and introduced the workshop by stating the learning objective and outcomes. Participants introduced themselves to the group. The workshop began with an introduction to the topic of diversity and identity in STEM. We discussed demographics in the U.S. and how various racial groups are and will be over- or under-represented in STEM and in Botany, acknowledging that on average, racial diversity among STEM graduates is increasing.

We discussed the diversity of pathways to STEM careers and critiqued the "pipeline" metaphor; nonetheless, we discussed the various reasons that students who start down the path of STEM education might leave. We also discussed lessons from HBCUs in creating inclusive learning environments that retain students, such as student-centered mentoring and an emphasis on conveying a sense of belonging to students who might otherwise feel out of place in STEM.

Participants considered the question "My work behavior is influenced by my identities in the following ways…" through a series of activities and discussions of how our various identities intersect. Dr. Mulligan emphasized that even if you don't think about your identities, your students do as soon as you walk in the room.

From the perspective of students, shaping one's STEM identity depends on three aspects, all of which are based on social interaction with mentors and colleagues. As mentors, we help students develop these aspects and re-enforce them through interactions and guidance.
1) Competence
2) Recognition
3) Performance

These three aspects are developed through the development of what we might call scientific currency. Students gain scientific currency through these actions when they are acknowledged by their mentors and the broader scientific community.
1) Good (creative, non-trivial, tractable) ideas?
2) Authorship & publication
3) Innovation and projects
4) Opportunities for collaboration
5) Funding

Next, working in small groups, we reflected on effective and ineffective mentoring that we experienced, and we discussed good and bad things about a significant mentor in our academic lives. One point that came up repeatedly is that good mentors reinforce that their mentees belong, even after a bad day or experience. We also discussed ways to deal with imposter syndrome and stereotype threat using hypothetical scenarios that Dr. Mulligan provided to the groups.

Effective mentor-mentee relationships work when the expectations of both parties align. Mentors and mentees can align their expectations by negotiating the relationship early and revisiting as necessary. A mentoring philosophy that you write for your lab serves as a starting point for that negotiation. Mentorship consists of four phases:
1) Preparation
2) Negotiation
3) Enabling growth
4) Coming to closure.

A mentorship philosophy…
● Describes your beliefs and practices
● Promotes equity and inclusion
● Serves as a starting point for aligning expectations

To begin the process of writing a mentoring philosophy, consider five expectations you need in a relationship to thrive. If you are unsure what those expectations should be, work through a **mentor's self-assessment** by…

1) List your strengths
2) List your challenges
3) List your opportunities for growth
4) Describe your role in assisting your mentee in accomplishing their goals

You may also find it useful to solicit feedback from students. Have students work as a group to describe an effective mentor, and share what they came up with in a lab meeting. Dr. Mulligan shared that in previous workshops, students have said that they look for things like flexibility, excitement, constructive criticism, and advocacy in a good mentor.

Dr. Mulligan provided a handout for continuing to develop a mentoring philosophy, along with an example of a mentoring philosophy created by a previous workshop attendee, emphasizing that yours will look different because you have different strengths and expectations.

PUI Section Business Meeting

We held the annual section meeting on Sunday, July 24. The committee described the section activities from the past year. Then, the group discussed the direction of the section, activities ideas, and possibilities for next year's workshop. Since some of the leadership is rotating off after this year, we opened nominations to the PUI Section Committee with a form in the previous Section Newsletter. During the meeting, Dr. Greg Pec was elected Secretary-Treasurer. Dr. Rajeev Ranjan and Dr. Subhani Jan self-nominated for post-doc ambassador and Dr. Rajeev Ranjan was elected to the position during the meeting. Your new section leadership for 2022–2023 is:

Chair
Dr. Nathan Jud (2024)
William Jewell College
judn@william.jewell.edu

Vice Chair (2023)
Dr. Carrie Wu
University of Richmond
cwu@richmond.edu

Secretary/Treasurer
Dr. Greg Pec (2025)
University of Nebraska Kearney
pecg@unk.edu

Postdoc Ambassador
Dr. Rajeev Ranjan (2023)
Purdue University

We finished the meeting by breaking out into small groups and we shared ideas for future workshops at Botany meetings. If you have any additional ideas or your group's idea didn't make it onto this list, please email Nathan Jud (jud[at]william.jewell.edu)

1. A workshop on using living and pressed plant collections in undergraduate research. Specifically for new or future faculty – how to get such collections integrated into your research plan.
2. Applying for ROAs. Discuss past successes, match up/ROA speed dating for PUI faculty and R1 faculty. Advantages and disadvantages/challenges and opportunities for ROAs from the R1 and PUI perspective

Event 2: PUI Section Networking Lunch

During this informal-networking lunch on Monday, July 25, participants shared research interests, locations, and courses. We had 21 participants. The word cloud below shows the diversity of research interests. We had a map where participants could mark their location so we could see the geographic distribution of attendees to encourage localized research or teaching collaborations.
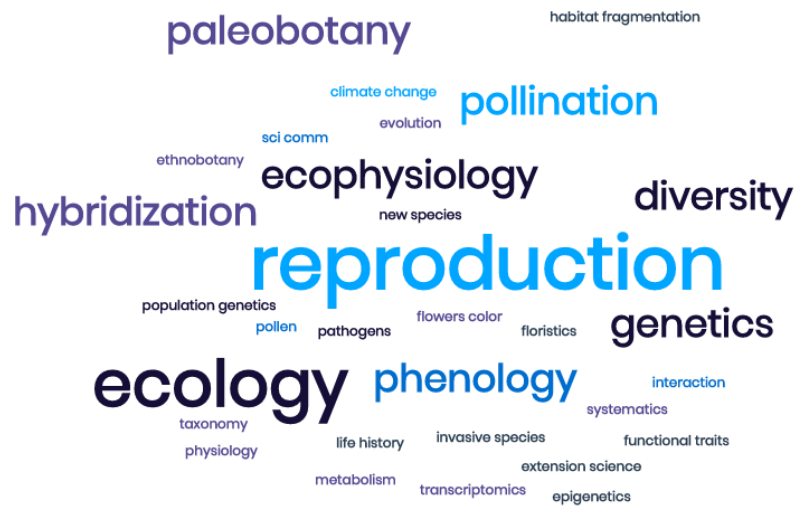
The networking lunch was lively. We had many announcements about new open positions, participants contributed to the map and local-networks sign-up sheet. We had participants move around and meet their colleagues, and we had a group photo.
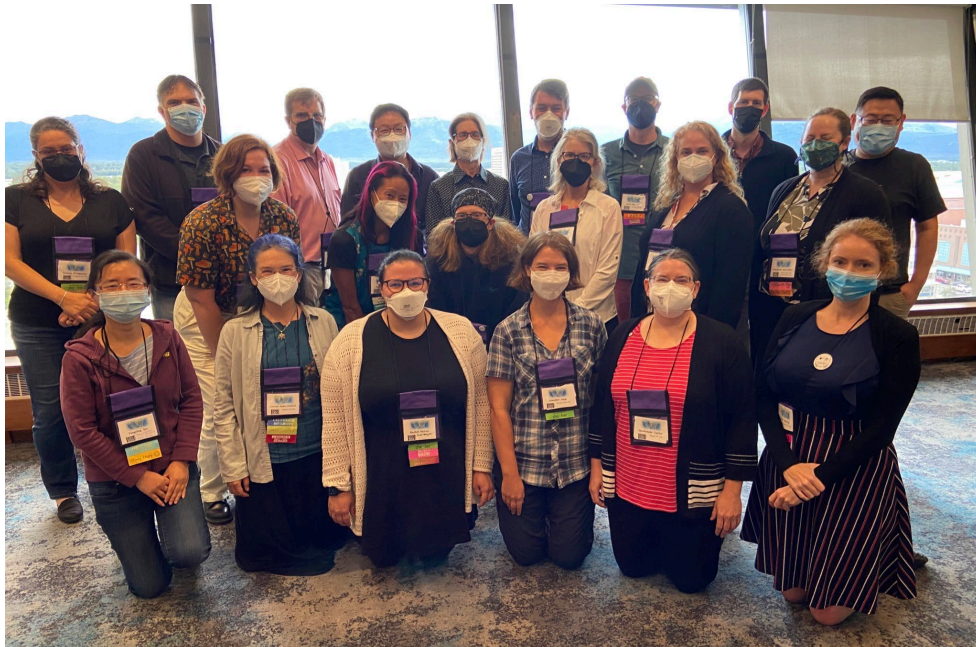
Event 3: PUI job ad and career panel:

Positions at PUIs involve a balance of teaching, research & undergraduate mentorship, and service that differs from expectations at R1 universities; job advertisements for PUI positions vary accordingly. The goal of this interactive panel discussion was to discuss careers at PUIs, the nature of these job ads, and how to put together your best application for the position you want. We had approximately 20 participants at this lunch on Tuesday, July 26.

Thanks to our panelists:
- Chris Ivey - California State University Chico
- Rachel S. Jabaily - Colorado College
- Michael Moore - Oberlin
- Mackenzie L. Taylor - Creighton University
- Susana Wadgymar - Davidson College

After introductions and some discussion about the variety of institutions, we broke into small groups and discussed the job ads and rubrics that were provided in a google drive folder via a QR code on the screen. Afterward, we asked participants to share one thing they learned from the small group discussions. Responses included:
1) Show that you know what PUI is, why you want to apply to work at a PUI, and how your skills match the needs of a PUI
2) It is ok to ask questions before or during the application process. Send an email to the contact provided or to the chair of the committee if available.
3) The ability to demonstrate publication momentum from graduate school or postdocs is often highly favorable; your new colleagues are likely better equipped to help you develop as a teacher than as a researcher.
4) If you are struggling with a diversity statement, you can create your own prompt to guide your writing.
5) Provide examples of your skills and expertise rather than just stating that you have a particular skill or expertise.

ACTIVITIES DURING THE 2022-2023 ACADEMIC YEAR:

1. Submission of NSF and BSA conference proposals
Following the successful NSF Conference Grant, we ensured that all funded participants received their support and we have been working on summarizing the outcomes of our events for the report to NSF.

Because we were left with surplus funds at the end, we sought an extension for NSF to spend on the additional support of PUI faculty participation and the PUI lunch event at

Botany 2023. We will support five PUI faculty attending Botany 2023 with $1000 from the grant.

2. Cross-society PUI meetings
Throughout the year we have had regular cross-society PUI meetings over Zoom, with the goal of starting and maintaining a dialogue between other society's PUI sections and working on the larger NSF grant to support PUI plant research networks. This effort was initially organized by the American Society of Plant Biology's PUI section leadership and has grown to include BSA's PUI section, the Society of Microbiologists, and the Ecological Society of America. We meet approximately every 1-2 months. We created and distributed a Qualtrics survey for PUI plant faculty to gauge interest in support of highly local research networks where PUI faculty and students can share research and teaching experiences. Results from the survey will help guide an NSF Research Coordination Network grant proposal.

PLANNED ACTIVITIES FOR BOTANY 2023

1. In-person lunch on research funding at PUIs
We are holding a lunch on July 24th at Botany 2022. We plan to have a time for networking over lunch, followed by a presentation from NSF representatives on RUI/ROA funding opportunities, and a handout on some other funding opportunities. We have invited both PUI faculty and future faculty, as well as R1 faculty who may be mentoring future PUI faculty and already have NSF support.

Lunch description from the conference program:

2. PUI section meeting
We will hold our annual section meeting at Botany 2023. We will update PUI membership on activities from throughout the year and at the conference. We will also solicit feedback on what the Section's priorities should be during 2023-24. We will need a new vice president. We will reach out to members to self-nominate before the PUI section meeting and hold elections during the meeting. We hope to allow virtual participation in the meeting.

Respectively submitted by,
Nathan Jud, Carrie Wu, Greg Pec, and Rajeev Ranjan

https://drive.google.com/drive/folders/1guVcx8BebfRpdX8beqOotrr2fqDn_1Tk?usp=sharing