

Education Update –November 2021

Prepared by Catrina Adams, BSA Education Director

Education Staffing Changes

- **Education Technology Manager** position ended with DIG grant 9/30/2021, Jodi Creasap Gee was recognized for her service and has moved on from BSA.
- Hired Jennifer Hartley as new **Education Programs Supervisor** starting 8/9/2021. Jennifer is a former middle school teacher and School Programs Manager at Missouri Botanical Garden. She will spend 80% FTE on the F2 grant/PlantingScience and 20% on other BSA education initiatives.
- BSA will be hiring for **DEI Programs Coordinator/Supervisor** who will spend 80% FTE on the newly-funded PLANTS III grant and 20% on other BSA DEI initiatives. The new position will report to the BSA Education Director.

Grant Funding Updates:

- **Finished/Closed out NSF RCN-UBE grant: Conference: Educating for a Diverse and Inclusive Community in Botany for the 21st Century (D&I)** ([NSF DEB#1929435](#), C. Adams PI, Kyra Krakos coPI, \$63,599, 2019-2021). This grant funded CC/TCU student and faculty participation and D&I programming at Botany 2019, Botany 2020, and Botany 2021. Events will continue as part of the expanded PLANTS III: Botany and Beyond grant. One unanticipated benefit of this grant was bringing three participants of the program (2 faculty, 1 undergraduate) into BSA leadership roles (2 committees, 1 PLANTS III advisory board role).
- **Finalized spending on PlantingScience: Digging Deeper Together – A Model for Collaborative Teacher/Scientist Professional Development (DIG)** ([NSF DRK12#1502892](#), C. Adams PI, \$2.9M, 2015-2021) Spending is now complete (to the dollar!), final report in progress, closeout will be 1/29/22.
- **Finalized spending on PLANTS II: Increasing the Diversity of Plant Scientists (PLANTS II)** ([NSF DEB#1549708](#), A. Sakai (PI), A. Monfils (coPI), \$106,310, 2015-2021). C. Adams contributed to development of alumni survey that will be carried out by external evaluator Kathi Beyer with closeout 12/30/21.
- **Grant work underway on Comparing the Efficacy of Collaborative Professional Development Formats for Improving Student Outcomes of a Student-Teacher-Scientist Partnership Program: PlantingScience F2 grant (F2)** ([NSF DRK12#2010556](#) C. Adams PI, \$3.9M, 2019-2025).
 - **Y2 Activities include** an advisory board meeting, recruiting participating districts, finalizing research instruments, planning online version of collaborative teacher/scientist professional development, creating online mentor training, making website improvements to support online PD needs, filming teachers in classrooms and scientists doing research tied to photosynthesis and cellular respiration.
- **Newly Funded! Preparing Leaders and Nurturing Tomorrow's Scientists: Botany and Beyond (PLANTS III)** (NSF [DEB#2138730](#); Anna Monfils (PI), Catrina Adams (coPI), Muriel Poston (coPI); \$1,254,869, 2021-2026). Expanded program builds on existing PLANTS II program, Diversity and Inclusion Initiative Conference Grant, and BLUE career exploration workshops and will include three events: pre-conference science identity workshop in spring in same region as Botany conference for local undergraduates; PLANTS pathway mentoring program for underrepresented undergraduate students; CC/TCU/MSI faculty workshop and inclusive botanical education track at conference.
 - **Y1 activities include** hiring new DEI programs coordinator/supervisor, an advisory board meeting, setting up an evaluation plan with external evaluator Kathi Beyer and recruiting/developing/supporting CC/TCU/MSI faculty PD and the PLANTS pathway mentoring program at Botany 2022 Anchorage (Science Identity Workshops will begin in 2023)

Education Update –November 2021

Prepared by Catrina Adams, BSA Education Director

- **“Leading Cultural Change through Professional Societies” (LEAPS) NSF grants:** Intended to develop collaborative networks for facilitating cultural changes in the biological sciences to advance diversity, equity, and inclusion. First round of funding is supporting 5 grants. BSA is a collaborator on 2 of the successful grants and is a participant in a 3rd (see below). BSA was a collaborating partner in 2 additional LEAPS proposals that were not funded: Black Men in Nature (Rice University) and a Plant Science Research Network (PSRN)-led LEAPS proposal.
 - **Newly Funded!** RCN: LEAPS: ROOT & SHOOT: Rooting Out Oppression Together & SHaring Our Outcomes Transparently ([NSF DBI#2134321](#)) Mary Williams (ASPB) (PI), C. Adams and C. Specht Steering Committee, \$2,141,750, 2021-2026)
 - **Y1 activities include:** Address known climate/culture deficiencies – a) develop inclusive management plan and best practices guide w/team consultant, b) create shared safe conferences code and reporting system, c) create equitable mentor training and certification, d) complete organizational power and equity self-assessment using shared tools, e) yearly equity training for society staff/leadership. Spring steering committee meeting planned at HHMI
 - **Newly Funded!** RCN: LEAPS: Culture Change for Inclusion of Indigenous Voices ([NSF DBI#2134624](#), Kathy Deer-in-Water (AISES) (PI), Teresa Mourad (coPI), (A. Monfils and C. Specht on Steering Committee, \$1,543,276, 2021-2026)
 - **Y1 activities include:** Assess current status of indigenous inclusion –a) create shared assessment tools, b) recruit members, leaders, staff to participate in surveys, interviews, c) conduct surveys and interviews
 - **(Participating Society)** LEAPS: Enabling Scientific Societies to Support Inclusive, Diverse, Equitable, and Accepting (IDEA) Scientific Environments ([NSF DBI#2134480](#), Dajoie Baker, PI (AIBS), \$96,488, 2021-2023).
 - **Y1 activities include:** Janelle Burke and C. Adams represented BSA at the recent AIBS LEAPS-funded IDEA Conference: [Enabling Societies to Support Inclusive, Diverse, Equitable and Accepting \(IDEA\) Scientific Environments](#). Virtual Conference, November 4-5 2021. Next steps are coordination with other LEAPS grants to determine gaps that can be filled and establishing subcommittees of interested society representatives to work on filling those gaps. A second meeting is planned in ~1 year to report and share on collective progress.

Life Discovery: Doing Science Virtual Conference was held in-person in Estes Park, CO, SEPT 30-OCT 2 2021: We partner in hosting this education conference along with ESA and SSE. Typically, a BSA staff member and/or a member of the education committee participate on the Life Discovery planning committee and BSA funds their travel to the conference. BSA also helps to advertise the conference to the BSA membership and helps to pick speakers that would appeal to BSA membership interests. The LDC planning committee (including Phil Gibson and Catrina Adams representing BSA) decided to go ahead with an in-person meeting in Estes Park. The conference followed ESA’s COVID policies requiring attendees to be vaccinated. We had 75 in-person attendees and many exciting talks, networking events and roundtables with positive reviews and many first-time attendees with botany well-represented. Jennifer Hartley, our new Education Programs staff member was also able to attend and will be taking on the planning committee role for the next conference in Spring 2023.

Education Update –November 2021

Prepared by Catrina Adams, BSA Education Director

PlantED Digital Library: The PlantED Digital library is a peer-reviewed digital library for botany teaching resources useful for high school and undergraduate audiences. It is one of several portals to the shared Life Discovery Ed Digital library (other portals are EcoED and EvoED). The EcoED portal is actively used, while the PlantED and EvoED portals only get a few submissions each year. The library is currently live, but there are issues with the peer review system. Resources are peer reviewed, but do not receive DOI numbers. Granting DOI numbers is currently not something the partners are keen to support. The current platform (CWIS) may not be supported for much longer, and the interface for submitting and searching is antiquated and badly needs a user interface upgrade. Currently the LDL library portals are all supported on BSA servers. The group is currently researching options for moving to a new platform and/or partnering with another existing library and exploring options for curating current resources to keep them available. Phil Gibson is currently the PlantED resource editor for BSA and along with C. Adams represents BSA/PlantED in the Life Discovery library planning efforts.

PlantingScience Updates:

Fall has been a transitional time for everyone associated with PlantingScience. Behind the scenes, we have transitioned to new staff supervision, and our teachers collectively have reported that this semester has been especially challenging as they navigate the return to in-person instruction after many taught remotely last year. Happily, we still have a very strong cohort of participants and mentors. We had 31 teachers sign on with us this session, and we have 34 groups comprising 1,044 students!

Publications in Press:

Taylor et al. (in press). The effect of participation in a student-scientist partnership-based online plant science mentoring community on high school students' science achievement and attitudes about scientists. *Journal of Research on Science Teaching (JRST)*; IF 3.87)

Publications in prep:

Two additional papers on DIG results remain in draft form in preparation for submission to the *The American Biology Teacher* and *BioScience*. Both of these are planned to reference the more detailed Taylor et al. study, so this one being published will let us move on additional papers.

Kyra Krakos and Catrina Adams are collaboratively preparing a *Plant Science Bulletin* article with several program participants to report grant outcomes from the D&I Initiative grant. We anticipate this will be ready for publication in the spring or summer issue.

Claire Hemingway, Marsh Sundberg and Catrina Adams are working on finalizing a paper tracking the career pathways of PlantingScience Master Plant Science Team members who participated as liaisons 2005-2020. We anticipate submitting this manuscript to *BioScience* in Spring 2022.

Presentations/Booth Recruitment Planned:

PlantingScience had a booth at the in-person National Association of Biology Teachers (NABT) meeting in Atlanta, GA, November 10-14. C. Adams and J. Hartley attended. Inquiring About Plants books (signed by authors G. Uno and M. Sundberg) also distributed to all of the 2021 NABT Outstanding Biology Teacher winners, along with PlantingScience recruitment materials. PlantingScience will plan to share a booth with ASPB at the 2022 NABT conference. Workshop abstract submitted for the 2021 National Science Teacher Association meeting to be held March 31-April 3 in Houston, TX, J. Hartley will present. Virtual PlantingScience mentor training/recruitment workshop planned for summer 2022, promoted to all PS partner organizations.

Education Update –November 2021

Prepared by Catrina Adams, BSA Education Director

Botany 360: Education/Outreach online discussions

At our summer Education Committee meeting, there was lots of interest in planning themed panel or open discussions around topics of interest in teaching and outreach that could be held virtually over the year. This fits right into the new Botany 360 initiative plans. It's clear that some coordination will be needed between the PUI/Education Section and the Education and DEI Committee, as there is a lot of overlap in topics of interest. BSA staff has been coordinating a Botany 360 Ad-hoc committee and submission form and calendar development is underway to coordinate BSA activities among the various sections and committees. We anticipate discussing this further at our mid-year Education committee meeting.

BSA Staff Training in Human Subjects Research Ethics: C. Adams is obtaining CITI (Collaborative Institutional Training Initiative Human Subjects Research Ethics recertification this fall. J. Hartley has current certification but will need to renew certification in May. Other staff (including new DEI programs coordinator/supervisor) may need this training to work on PLANTS III data management and to handle potentially sensitive demographic data collected by the society as part of LEAPS and internal DEI initiatives.

Welcome and Orientation for Rachel Jabaily, new BSA Education Director-at-Large and Education Committee chair.

We're excited to welcome Rachel Jabaily as the new Education Director-at-Large and chair of the Education Committee. C. Adams and outgoing Director-at-Large Chris Martine met with Rachel virtually in August, 2021 to discuss activities and ongoing initiatives from the past three years, and Rachel was able to attend the summer education committee meeting to be oriented to the group. C. Adams and J. Hartley were also able to meet with Rachel in-person and have an introduction and planning meeting in Colorado Springs with representatives of BSCS Science Learning who are partners on the PlantingScience DIG and F2 grant. We discussed the history of PlantingScience and the grants, and the activities planned for F2 over the next 4-5 years. We are planning to have an education committee meeting mid-year, date TBD. Bessey award nominations, Botany 360 efforts, Botany website needs, the future of the PlantED digital library, and coordination with Plants III and other ongoing DEI efforts will be discussed.