

Education Update – June 2024

Prepared by Catrina Adams, BSA Education Director

Education Committee Activities:

- Bessey award (evaluated by Education and the Teaching Section):
 - 2024 Bessey award to Dr. Joan Edwards.
 - We would like to encourage everyone to nominate more people for next year's award...nominations active for 2 years.
 - A Symposium featuring past Bessey Award winners will be held Wednesday morning, June 19, utilizing Bessey earmarked funds, aiming to record.
- Call to update state-by-state regional botany resources on the Botany.org website.
 - **Looking for most recent floras, field guides, botanical websites, botanical organizations, degree programs for each US state/territory.**
 - Target is students, those with some level of botanical training (not necessarily amateurs, nor comprehensive guide for professionals).
 - Seeking input from BSA community through newsletters, BSA Education Booth at Botany, as a way to build community.
 - Ed committee will vet resources, make final list available online, replacing outdated "State Botanical References" section of botany.org
 - Specific outreach or ed committee research to fill remaining gaps
 - Aim is to have at least one resource for each of the US states and territories ready to list on our website by July 2025 Botany meeting in Tucson
 - Google form is open: <https://forms.gle/ccteAy5EASf9Sz5dA>
 - Results available to view here:
<https://docs.google.com/spreadsheets/d/14nM9c4sE9eoBjWt4SCTbhuD5-GJPgHSacdA8o1oNR9c/edit?usp=sharing>

Seeking 2 new NSF grants to expand and refresh Life Discovery Conference/Digital Library Collaboration (BSA/SSE/ESA):

[The Life Discovery: Doing Science](#) conference is a longstanding stand-alone Education conference cosponsored by the BSA with the Ecological Society of America and Society for the Study of Evolution. The audience is high school teachers, faculty who teach undergraduate-level botany/ecology/evolution classes, and others (education researchers, informal educators, etc.) interested in the themes. Eight conferences were held every ~18 months in different locations each year 2013-2023. Phil Gibson and Jennifer Hartley have represented BSA on the planning committee.

● **BIO-LEAPS: Supporting Success for All Students (SSAS)**

- PI: Teresa Mourad, ESA
- Partner organizations: BSA, SSE
- Deadline **July 1, 2024**
- Budget max 2M over 5 years
 - BSA: staff time covered by proposed grant
 - Ed Director: 9-15% of time/year
 - Ed Programs Supervisor: 9-10% of time/year
 - Other Budget items:
 - Travel to LDC for staff/steering committee
 - Travel Awards to LDC for CC/TCU/MSI faculty and HS teachers
- Activities (and BSA role for each):

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- Steering Committee, meet bi-monthly, consult on activities and coordinate/share with partner communities.
 - BSA will have one staff, 1 volunteer BSA leadership rep on the steering committee
 - Plans for an in-person retreat in Y1, meetings at LDC in Y2, Y4, Y5
- Compile evidence-based resources supporting student success, feature resources at informal webevents to inform biology education community
 - BSA will run one webevent in Y2, Y4, Y5 on a topic of relevance to high school teachers and undergraduate biology faculty
- Form faculty mentoring networks (FMN) for early career faculty and postdocs, grad student TAs who teach introductory biology courses
 - BSA will help recruit for FMN participants and faculty mentors
- Create series of short certificate courses on major topics related to inclusive teaching. Assembled with paid help from Expert Council
 - BSA will help recruit course developers, participants
- Support conference travel for 50 faculty/10 high school teachers to the Life Discovery – Doing Science Biology Education conference (LDC) in March 2026, Sept 2027, and March 2029.
 - BSA will have one staff, one volunteer BSA rep on the planning committee for each LDC (distinct from Steering Committee)
 - BSA will recruit a science coordinator from a district in the region to participate in the conference planning/on planning committee (w/small stipend)
 - BSA will develop an application and selection rubric for high school biology teachers, recruit teachers through PlantingScience and regional science teacher organization networks, and select travel awardees
 - BSA will ensure high school teacher relevance and representation in LDC events such as panel discussions, guided networking sessions, and workshops.
 - BSA will contribute to compiling ideas generated at these discussions to share with the community and with high school/higher education administrators
- Conduct a teaching culture survey of participating society members who teach as part of their current jobs.
 - BSA will lead the development and administration of this climate/culture survey
 - The survey will use items from existing validated surveys with a focus on inclusive teaching. Mix of select-response and open-response questions related to common teaching practices, attitudes about teaching, access to/use of teaching professional development resources, as well as questions related to the type and amount of teaching currently, career stage, past teaching experience, past learning experiences, institutional practices related to teaching, institution type, and demographics.
 - The survey will be delivered twice over the course of the grant, early in Y2 and late in Y4

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- Survey development and interpretation of preliminary survey results will be supplemented by community input gathered in three planned virtual listening sessions.
 - Aim to compare with published results from other disciplines and cross-discipline STEM studies, as well as compare surveys to get a sense of change over time.
 - IRB approval will be sought for the survey through ESA coPI's institution and we intend to publish results in a peer-reviewed journal
 - Seeking external evaluator to conduct survey/interviews of project participants and evaluate effectiveness of the program activities for reaching outcome goals.
- **IUSE: EDU (IUSE-AID: Adaptation, Implementation, Dissemination) Enriching the Life Science Teaching Ecosystem by Supporting a Diverse Community of Educators to Generate and Share Evidence-based Teaching Resources and Practices. (better title TBD)**
 - Grant type: Institutional/Community Transformation Type II
 - PI: Catrina Adams, BSA
 - Existing Partners: ESA, SSE, QUBES; Seeking partners/experts: SABER, NABT, National Institute on Scientific Teaching, BioScience (AIBS), CBE-Life Science Education (American Society for Cell Biology/Genetics Society of America)
 - Deadline **January 15, 2025**
 - Budget max 400K over 3 years
 - Activities:
 - Hosting Faculty Mentoring Networks (FMN) on QUBES. Each FMN will be led by a DBER researcher who has recently successfully published a study of the efficacy of a life science-related teaching resource or practice: Faculty participants will be recruited from diverse institutions (preferencing CC/MSI/TCU/PUI) to participate in 2-semester-long FMN to implement/adapt the resource, conceptually replicate the study of the resource in their own classrooms, and work together with the other FMN participants and leaders to collaboratively write up and publish a follow-up paper on the effectiveness of the resource when studied in/adapted to a wider range of institutions.
 - Grant supports FMN leaders & participants w/stipend, helps support open access publication fees, and provides travel award opportunities for FMN representatives to present work at Botany/LDC.
 - Hosting one-off free webinars/online workshops to increase DBER capacity of partner society membership (~2-3/semester): FMN participants expected to attend but open to all interested.
 - Grant supports small stipend for workshop leaders recruited from DBER organizations/journals, or identified from monitoring recently published studies in DBER journals.
 - Sponsoring a small group of early career faculty/graduate students to curate, annotate, and disseminate current DBER published research with a clear tie to interests of the LDC/partner society communities.
 - Grant supports small stipend for participants, facilitator/editor. Products include widely-disseminated newsletter highlighting exciting DBER findings, potential podcast interviews of paper authors/experts, discussions of big ideas, panel discussions, etc. and maintaining a digital library of evidence-informed OER resources.

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- This group will produce ~2 online newsletters, ~2 podcast episodes, and ~1 webinar/online workshop per semester, and representatives of the group will be asked to lead a workshop/presentation at LDC and society meetings.
- This activity will include support for moving PlantED/EvoED resources to QUBES and establishing a new, more accessible digital library of effective OER teaching resources (with DOIs) there.
 - External evaluator to measure extent to which program goals are met via survey/interviews with participants, participate in planning group to present evaluation/provide feedback relevant to Level 3 grant proposal.
 - Planning a followup IUSE: EDU ICT Type III grant (up to 5 years, 2M) to continue, refine, and extend the reach/capacity/effectiveness of these activities.
 - Grant supports small stipend for representatives of each partner organization, outside expert advisors from other disciplines and from wider DBER community. Past participants of grant activities will be included in planning. Includes monthly Zoom meetings in Y3 of grant, support for proposal writing event 1 day extension of LDC conference.
- **Any new grants need to be formally approved by the board prior to submission.**
 - *Pre-Award activities:* “BSA requires that the Board of Directors will review and approve all grant proposals including proposals for continuing current awards. The Board reviews and ensures that grant proposals are in alignment with BSA strategic priorities, that BSA staff has the capacity to administer the administrative and programmatic elements required, and that continuation of the project or program after the grant period ends has been given realistic consideration. The Board together with the Executive Director selects PIs for grant proposals.” [BSA Grant Procedures, Part 10: Roles and Responsibilities](#)
 - The collaborative grants are still in active development. For the LEAPS grant due July 1, Catrina Adams will present a short summary to the board of:
 - how proposed activities align with BSA strategic priorities
 - BSA staff responsibilities and capacity
 - Plans for continuation of the project or program after grant period ends

Grant Funding Updates:

- **NSF DRK-12 PlantingScience F2 grant work is in year Y4 of 5**, a critical year for implementation and data gathering/processing for research study (NSF DRL#2010556, C. Adams PI, 3.9M, 2020-2025). Details available: https://www.nsf.gov/awardsearch/showAward?AWD_ID=2010556&HistoricalAwards=false
 - A second round of collaborative teacher/scientist professional learning (PL) workshops are taking place this summer. The last in-person workshop will be held June 25-28 in St. Louis Missouri at the Missouri Botanical Garden. We will then host two online professional learning workshops the weeks of July 8 – July 19 (M, W, F; AM and PM sessions).
 - **The second round of research was needed due to significant attrition on the teacher side for the workshops and implementation last summer and fall. We have successfully recruited and retained an additional 26 teachers and 18 Fellows for this second round of research.**

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- **Please help with mentor recruitment!** We will have an extremely high need for mentors to work with Power of Sunlight teams this fall given the large volume of teachers and students participating in the research project.
- **On advice from program officer, we are postponing our request for a F2 grant supplement and extension** to support greater participant involvement in data interpretation/dissemination of results and an additional year of HubZero support. We are likely to need an extension in part because of the need to spend more than anticipated on a second round of participants/PL/data collection to maintain or statistical power. The program officer recommended that we wait until a higher percentage of our grant funds are expended to apply, as applying with significant funds left in the budget (even if they are “spoken for”) is unlikely to be successful. At this point we are planning to take a no-cost-extension for Y6 and prepare a supplement request after expending participant costs on our second round of research this summer/fall, submitting the request in spring/summer 2025.
- **ROOT & SHOOT RCN (NSF DBI #2134321):**
 - Brenda Molano-Flores and Catrina Adams currently represent BSA on the steering committee of the [ROOT&SHOOT RCN](#)
 - ROOT & SHOOT scheduled two Bystander Intervention Trainings for members of the RCN again in 2024, provided by the [ADVANCEGeo partnership](#). This included an “advanced” 1-hour practice-heavy “refresher” version of the training for those who have attended before, or who are looking for more practice. The first was held Feb 15, the second is scheduled for May 28 from 3-4PM EDT.
 - ROOT&SHOOT is sharing [summer opportunities to study plants for undergraduates](#): let Catrina know if you have opportunities to add.
 - **New ROOT&SHOOT Working Group: Culturally Responsive Mentoring Certification**
 - The group includes 23 working group members, 13 of which are BSA-affiliated members.
 - Catrina Adams facilitates this group along with Mary Williams, Patricia Baldrich and Marcia Puig-Lluch (R&S Steering Committee members)
 - BSA-affiliated members: Ian Gilman, Summer Blanco, Jess Szetela, Mariana Vazquez, Jordan Argrett, Amy Faivre, Laura Gough, Janet Mansaray, Cierra Sullivan, Juliana Harden, Renee Petipas, Caitlyn Elliot, Cael Dant.
 - The working group holds a large group meeting once a month, and weekly smaller meetings with various subgroups. All working group members receive stipends. The plan is to create/compile a pilot cohort-based mentor certification program to be ready to be evaluated in Fall 2024. More info available here: <https://rootandshoot.org/working-group-on-culturally-responsive-mentoring/>

Recently Published Papers:

Westbrook, A., C. Adams & J. A. Taylor (2023). Digging Deeper into Student-Teacher-Scientist Partnerships for Improving Student Achievement and Attitudes about Scientists. *American Biology Teacher* 85 (7): 378-389.

Presentations/Booth Recruitment:

- The BSA Education/PlantingScience booth at this year’s Botany conference will be focused on mentor recruitment and collecting state-by-state botanical resources: with fun prizes for those

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who have mentored before, who signed up to mentor for this fall, or who recruited a new mentor, and for those who submit a resource.

- PlantingScience Fellow Mindy Findlater will be presenting on behalf of PlantingScience at ASPB's Plant Biology conference in Honolulu, Hawaii, as part of a science education symposium including PlantingScience/BSA along with the Missouri Botanical Garden and Danforth Plant Science Center.