

UW College of Agriculture and Natural Resources
Global Perspectives Grant Program
Project Report Instructions

A brief written report must be submitted electronically to the AES office **within one month of returning from your trip**. Photographs supplementing the report are encouraged and are appreciated by the donor. Failure to submit a report may jeopardize future funding from AES.

In addition to forwarding these reports to our benefactor, reports will also be published on the AES website—do not include any photos that require permission to post to our webpage. Reports must be written in a style **understandable by the lay person** and may be edited for readability before being published to the AES website or the University of Wyoming Foundation report.

Format: Use 12 point type, single line spacing, and one inch margins. Submit your report to aes@uwyo.edu as a single PDF file.

Include the following information:

1. COVER PAGE

Award Period (e.g. Spring 2012): 11/2023-11/2024

Principle Investigator(s) Bethann Garramon Merkle **Department:** Zoology & Physiology
Email: bmerkle@uwyo.edu

Project Title from Application: Drawn to Science Communication: A pilot intervention to enhance creativity and communication around research

Amount spent: \$4,351.85 of \$7,700 (remainder extended until 11/2024)

Non-technical summary (max 1500 characters plus spaces): Provide a one paragraph non-technical summary that most people can understand.

Drawn to Science Communication builds on UW’s informal efforts to foster creativity and effective communication in science research. Through a collaboration with the Literary and Historical Society of Quebec, PI Bethann Garramon Merkle conducted workshops, focus groups, and interviews in Canada and Wyoming to investigate ways that cultural and artistic methods can be used to support students and researchers in their efforts to foster public trust in and use of science. This project funding supported three workshops, a publication in development, another publication in review, a \$1,000,000 collaborative proposal submitted to the National Science Foundation, and a book-length manuscript contracted by University of Chicago Press. Merkle was also elected an Early Career Fellow of the Ecological Society in 2024, in recognition for her efforts at UW and nationwide. Drawn to Science Communication is part of her collaborative work to transform academic systems to (a) provide robust, evidence-based training in science communication and (b) better value, support, and reward faculty, staff, and

students who do science communication, public engagement, outreach, policy support, and other forms of impactful work to connect science and society.

2. REPORT: Maximum of two pages of text; in addition, please also include **photos**. Must be written in a style understandable by a general audience.

Include:

1. Main results of activities planned in the proposal.
2. Describe any future plans.
3. Outline potential impact to a) the College of Agriculture and Natural Resources, b) the University of Wyoming, and c) the State of Wyoming.
4. Photos

1. Main results of activities planned in the proposal. (a) Workshops at partner institutions.

We conducted workshops in Quebec City, Quebec, Canada and at the University of Wyoming. In these workshops, members of the Literary and Historical Society of Quebec (LHSQ) and the University of Wyoming communities, as well as interested members of the public, participated in a range of activities integrating creative and scientific techniques (e.g., drawing, reflection-based journaling, self-editing, and discussions of mentorship and supporting international student-trainees studying science in Canada and the U.S.). These workshops engaged ~45 people, fostering increased awareness and capacity to use transdisciplinary methods to enhance and share science. **(b) Map out a recommended framework and implementation plan.** We have secured an independent contractor to review the outcomes of our workshops and other site-based research (focus groups, interviews, archival research), code the qualitative aspects of this data set, and conduct preliminary analyses. When completed, the results from this work will form the core of a publication presenting our recommendations.

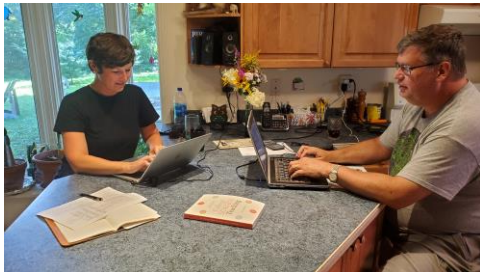
2. Future plans. As noted above, we are processing the results of the workshops and site-based research now. We anticipate a publication reporting on those results. Additional visits to, and more extensive interviews in Quebec City and at UW would be productive for finalizing our recommendations, and pursuing an additional avenue of research we discovered during our work (women scientists active as artists in both regions. Meanwhile, preliminary (albeit somewhat anecdotal) results from this research have informed aspects of a manuscript I co-led which is currently in review (after revision) at *BioScience*. This manuscript discusses institutional barriers in academia that constrain science communication/sharing science and associated research/training and provides detailed recommendations relevant to UW. Similarly, preliminary results from this work informed the \$1,000,000 proposal I submitted to the National Science Foundation (Innovations in Graduate Education) in mid-April: “Collaborative Research: IGE: Track 2: SciComm LIFT: Leveraging Institutional capacity for eEffective graduate student Training in science communication.” As lead PI, I leveraged insights from “Drawn to Science Communication” to write an internal proposal then selected as one of UW’s 2 allowed submissions to this funding call. I then recruited collaborators from American University, Colorado State University, University of Minnesota, and University of Denver. SciComm LIFT proposes to use expectancy values theory to: Aim 1: conduct a system-scoping survey of

graduate students, faculty, and staff to assess current knowledge, motivations, and self-efficacy around ethical scicomm and quantify the extent of training addressing ethical dimensions of scicomm. Aim 2: conduct a dose-effect study to gauge impacts of three ethical scicomm interventions in science graduate programs. Aim 3: conduct a second dose-effect study to ask how three levels of coaching can support academic faculty and staff to overcome institutional barriers that prevent them from offering ethical scicomm training for graduate students. Additionally, the modified work plan approved by Dr. Webster enabled me to travel to New Brunswick during a crucial phase of writing for a book-length manuscript I have under contract with the University of Chicago Press. This book, currently titled “Helping Students Write in the Sciences: Strategies for Efficient and Effective Mentoring of Developing Writers.” The co-author I recruited to work with me on it is Dr. Stephen Heard of the University of New Brunswick. The funding enabled us to finalize a complete, uniform draft of the manuscript (September 2024), send it to beta readers (November 2023), and send a complete manuscript to the press ahead of contract (March 2024).

3. Potential impact to CALSNR, UW, and Wyoming.

At UW, we foster use of STEM expertise in Wyoming, but we lack comprehensive infrastructure to coach, train, and support students and researchers as they try to establish trust and effective use of science beyond campus. With this funding, I built on my past decade of a scholarship, facilitation, and consulting, collaborating with Dr. Louisa Blair and the LHSQ to explore community-based methods for enhancing scientists’ efforts to share science in settings where socio-political histories are complex and potential for misunderstanding *and* shared values are high. Insights from this region are valuable for calibrating our efforts, at UW, to ensure that our scholarship (and coursework) are relevant to the needs of Wyoming and the world. Indeed, understanding how cultural institutions remain relevant in the modern era, particularly in environments where historically one culture was forcibly dominant, can contribute vital perspectives to shape the way we train, support, and incentivize scientists and science professionals to do work that is legible, relevant, valued, and trusted by our local communities and broader society. My book “Helping Students Write” will also support faculty who traditionally receive little training in teaching but want (and need) to help students become better writers. Other books on this subject provide self-help for developing writers or are teaching resources for English instructors; my book exists to bridge this gap for science mentors. Furthermore, my work was recently recognized by the Ecological Society of America, which elected me an Early Career Fellow in April 2024 (see [UW press release](#) and [ESA announcement](#)). The award citation directly rewards the that I continue to do at UW as a scholar, instructor, administrator, and as founding director of the UW Science Communication Initiative. Only 10 Early Career Fellows are named each year, which means this award is also a remarkable affirmation of the importance of investing in science communication capacity-building. This award helps put UW on the map as an institutional leader in the transformation of academia towards a culture of valuing, fostering, and rewarding students’ and researchers’ efforts to bridge the science-society gap. We have the potential to leverage this to foster meaningful training, rewards/incentives, and accountability among our students, staff, and faculty. I look forward to collaborating further on this with the Global Perspectives program and CALSNR more broadly.

4. Photos



CALSNR professor Bethann Garramon Merkle working in New Brunswick with collaborator/co-author Stephen Heard



Quebec collaborator Dr. Louisa Blair using a historical botany text for wild-harvesting local fruits during CALSNR professor Bethann Garramon Merkle's 2023 visit.



CALSNR professor Bethann Garramon Merkle (center) with Quebec focus group participants (a journalist, left; concert pianist, right).



CALSNR professor Bethann Garramon Merkle teaches an art-science integration workshop at the Literary and Historical Society, Quebec City, Quebec, Canada.

See additional photos on next page.

