



# Workshop Report: Fostering Two-Year College Collaborations with Disciplinary Societies

## Executive Summary

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The 2023 virtual workshop *Fostering Two-Year College Collaborations with Disciplinary Societies* brought two-year college (2YC) faculty and disciplinary society representatives together to explore mutual benefits and possibilities of working together. Expanding collaborations between 2YCs and disciplinary societies is vital for building participation in STEM disciplines, supporting diversity and inclusion, promoting continuing professional development for 2YC instructors, and ultimately enhancing student learning and success. We hope this workshop report will be useful to those designing interactive virtual workshops and to faculty, disciplinary society representatives, education researchers, and funders who are interested in these issues.

The workshop included more than 60 2YC faculty and disciplinary society representatives in teams from 11 disciplines: biology, chemistry, economics, geography, geoscience, mathematics, meteorology/atmospheric science, physics, political science, psychology, and sociology. It took place over two half-day sessions in the spring and two half-day sessions in the fall of 2023. During the summer months, the disciplinary teams worked asynchronously, and workshop leaders, consultants, and participants provided written responses to other teams' ideas.

Through a scaffolded approach, the teams of 2YC faculty and disciplinary society representatives developed and began to implement a discipline-specific action plan to expand collaborations between 2YCs and disciplinary societies. Teams were asked to identify one goal for the purposes of this workshop. They considered possible strategies and resources that would help support their plan, discussed ways to get feedback from others in their discipline outside the workshop, and established a timeline for who would do what and when. Action plans focused on the following issues: increasing 2YC participation in disciplinary societies; including 2YC faculty in leadership positions within disciplinary societies and developing the next generation of leaders; re-considering disciplinary society conferences and structures; offering professional development relevant to 2YCs; and exploring external funding through the National Science Foundation and other sources. Workshop-wide discussions also addressed issues including workforce development and supporting two-year to four-year college transfer pathways.

Woven throughout the workshop were multiple interactive opportunities for cross-disciplinary sharing as the action plans were taking shape. These included breakout sessions, presentations on established disciplinary projects, and lightning talks on action plans followed by poster sessions. In all of these activities, participants learned how other disciplines were connecting 2YCs and disciplinary societies thus enriching their disciplinary action plan work.

Disciplines are dealing with similar challenges in fostering 2YC and disciplinary society collaborations. Arguably, the most important thing the workshop did was create dedicated time and space for 2YC faculty and disciplinary society representatives to discuss ways to address issues critical to both. Participants



reported on the value of time spent both in developing action plans with their disciplinary team and the benefits of learning from other disciplines. This work of building strong engagement between 2YCs and disciplinary societies must be ongoing.

In this report, we briefly describe the workshop, then highlight the action plan process that was at the heart of the work by 2YC faculty and disciplinary society representatives. In addition, we report on the cross-disciplinary opportunities that enriched the action plan process and the workshop practices designed to engage participants and build connections and community. The *Plans in Action* section illustrates the range of approaches the disciplinary teams were developing to make stronger connections between 2YC faculty and their disciplinary societies. We hope this workshop and report will prove inspirational!

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# Workshop Report: Fostering Two-Year College Collaborations with Disciplinary Societies

*"This was a highly innovative and trailblazing project."* (participant comment)

## 1: Introduction: Benefits of Collaboration

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This 2023 virtual workshop, *Fostering Two-Year College Collaborations with Disciplinary Societies*, offered opportunities for two-year college (2YC) faculty and disciplinary society representatives to connect, learn, and share, both within and among disciplines. It provided structure, accountability, and support as participants developed discipline-specific action plans for strengthening collaborations between 2YC faculty and their disciplinary societies, including pursuing possible grant opportunities. The workshop built on the January 2022 virtual workshop *Strengthening Connections Between Community Colleges and Disciplinary Societies* (Macdonald, et al., 2022a; Macdonald et al., 2022b) and an edited volume on *Community College Engagement with Disciplinary Societies* (Maier, Rowell, & Macdonald, 2021).

Expanding collaborations between 2YCs and disciplinary societies is vital for building participation in STEM disciplines, supporting diversity and inclusion, promoting continuing professional development for 2YC instructors, and ultimately enhancing student learning and success. Two-year colleges enroll about 40% of U.S. undergraduates (American Association of Community Colleges, 2023), including historically marginalized groups in STEM, and are ideal sites for improving undergraduate STEM education. Connecting 2YCs and disciplinary societies is mutually beneficial: 2YC faculty often feel isolated from their disciplinary colleagues (particularly in small departments) and are seeking opportunities for professional community and learning; disciplinary societies need the valuable input that 2YC faculty offer, and they also need to bolster their memberships and engagement to remain viable in challenging times. The workshop provided time and space to explore these mutual benefits.

Building on the outcomes from the 2022 workshop, our workshop brought together more than 60 2YC faculty and disciplinary society representatives from 11 disciplines: biology, chemistry, economics, geography, geoscience, mathematics, meteorology/atmospheric science, physics, political science, psychology, and sociology. It provided a structured opportunity for disciplinary teams to set goals for improving collaboration between the disciplinary societies and 2YC faculty and develop and get feedback on action plans to achieve those goals. In addition, it provided opportunities for disciplines and disciplinary societies to learn from each other, for participants to explore cross-disciplinary efforts, and to strengthen networks within disciplinary communities and beyond. The workshop also raised awareness of NSF funding opportunities to support engagement between 2YCs and disciplinary societies and set the stage for increasing the submission of grant proposals that support 2YCs.

The workshop was designed and led by the leader team with support by project consultants. The leader team included Ellen Iverson (Science Education Resource Center (SERC) at Carleton College), Thomas Higgins (Chemistry, Harold Washington College), Heather Macdonald (Geology, William & Mary, Emerita), Mark Maier (Economics, Glendale Community College), and Monica Bruckner (SERC at Carleton College). The consultants were Susan Bickerstaff (Community College Research Center, Teachers College) and Sharon Zuber (William & Mary Writing Resources Center, Director Emerita).



The workshop goals were for participants to:

- Develop and begin to implement action plans that expand collaborations between 2YCs and disciplinary societies.
- Explore cross-disciplinary opportunities to support faculty and students.
- Learn more about National Science Foundation grant opportunities for 2YCs that address both discipline-specific and cross-disciplinary needs.
- Build networks and communities of 2YC faculty and disciplinary society representatives.

The virtual workshop offered multiple opportunities for participants to interact, including breakout rooms and collaborative documents. Sessions were interactive, following effective practices for engaging participants and promoting inclusive discussions.

In this report, we briefly describe the workshop, then highlight the action plan process that was at the heart of the work by 2YC faculty and disciplinary society representatives. In addition, we report on the cross-disciplinary opportunities that enriched the action plan process and the workshop practices designed to engage participants and build connections and community. The *Moving Forward: Plans in Action* section (page 13) illustrates the range of approaches the disciplinary teams were developing to make stronger connections between 2YC faculty and their disciplinary societies. Each section is preceded by participants' responses from the end-of-workshop evaluations.

### **Putting together the teams**

Participants included 2YC faculty and disciplinary society representatives who formed 11 disciplinary teams. Each disciplinary team had two liaisons, typically one from a disciplinary society and one from a 2YC. Liaisons met with workshop leaders in a pre-workshop session to discuss the action plan process, the selection of other participants for disciplinary teams, and the workshop deliverables. They identified two-five additional members for their disciplinary team, considering the value of including participants with particular experiences and expertise (e.g., learning and teaching center leaders, adjunct faculty, faculty with educational research expertise or industry connections). The selection process for participants was guided by a desire for representation across several dimensions:

- Student body served (e.g., MSI, HSI, PBI)
- Institution type (e.g., rural, suburban, urban)
- Participant identity (e.g., racial/ethnic representation, gender identity).
- Experience of faculty (e.g., significant involvement with their disciplinary society, faculty who have demonstrated leadership in their professional capacity, earlier career faculty)
- Geographic region

The work of the liaisons was particularly important in the process of selecting other members of their disciplinary team given their knowledge of their disciplinary community. As they selected the other four members of their discipline's working team (at least three 2YC faculty), they were asked to consider the above categories, recognizing that addressing all of these dimensions in a team is aspirational.

## **2: Workshop Description: Virtual Engagement**

*"I liked learning from 2YC faculty outside my discipline. It was a good balance of within and cross-discipline collaboration. It was the best run virtual workshop I have participated in."*

The virtual workshop included four Friday sessions - two half-day sessions in the spring (April 28 & May 5, 2023) and two half-day sessions in the fall (September 29 & October 6, 2023). Each Zoom session was 4 hours. During the summer months, teams worked asynchronously on their own discipline-specific action plan, and workshop leaders, consultants, and participants reviewed and provided written responses to other teams' discipline-specific action plans. Table 1 gives an overview of the workshop schedule; the detailed program is given on the workshop website

([https://serc.carleton.edu/discipline\\_2yc/workshop2023/program.html](https://serc.carleton.edu/discipline_2yc/workshop2023/program.html)).

Table 1. Workshop schedule: Dates and key sessions

<b>Pre-workshop assignment</b>	View introductory video, read action plan process description, scan 2022 workshop report, complete registration, post introduction slides
<b>Day 1 April 28, 2023</b>	<ul style="list-style-type: none"> <li>• Workshop overview, introductions, benefits of collaboration</li> <li>• Discipline-specific groups work on action plan</li> <li>• Topical groups - promote exchange across disciplines</li> <li>• Closing session, daily roadcheck, next steps</li> </ul>
<b>Day 2 May 5, 2023</b>	<ul style="list-style-type: none"> <li>• Discipline-specific groups: Action plan &amp; ways to engage colleagues</li> <li>• Multi-disciplinary groups - informal feedback on plans to engage disciplinary colleagues</li> <li>• Cross-discipline discussion groups on topics suggested by participants</li> <li>• Closing session, daily roadcheck, next steps</li> </ul>
<b>Summer check-in</b>	<ul style="list-style-type: none"> <li>• Post updated action plan, give and receive action plan feedback from participants from other disciplines, revise action plan based on feedback</li> </ul>
<b>Day 3 September 29, 2023</b>	<ul style="list-style-type: none"> <li>• Lightning talks on disciplinary action plans followed by a virtual poster session</li> <li>• Presentations by NSF program officers and Q&amp;A in breakout sessions</li> <li>• Discipline-specific breakout groups</li> <li>• Closing session, daily roadcheck, next steps</li> </ul>
<b>Day 4 October 6, 2023</b>	<ul style="list-style-type: none"> <li>• Micro-presentations about previous disciplinary projects followed by breakouts</li> <li>• Discipline-specific groups - NSF opportunities, action plans, next steps</li> <li>• Cross-discipline discussion groups on topics selected by participants</li> <li>• Closing session, reflections, closing remarks, end-of-workshop evaluation</li> </ul>

### **Pre-workshop**

The workshop leaders leveraged effective practices in asynchronous learning to prepare participants for the synchronous meetings. Before the workshop, participants were asked to watch a short video overview of the workshop and the action plan process and complete a registration form and a slide introducing themselves. The slide introductions gave participants an opportunity to get to know members of their disciplinary team and participants from other disciplines. The pre-workshop assignments allowed participants to prepare on their own time and the teams to jump right into productive work.

### **Spring: Days 1 & 2**

Participant activities on Day 1 began with small cross-disciplinary breakouts in which they were asked to discuss the benefits of fostering collaboration between 2YCs and disciplinary societies. The emphasis on benefits set a positive tone for future discussions, and the cross-disciplinary groups set up an expectation



for further communication/work across disciplines. After the leaders reviewed the workshop's action plan process, the disciplinary teams began identifying and prioritizing goals for their plan. To promote exchange of ideas across disciplines, participants took part in multi-disciplinary breakout group discussions. By the end of Day 1, each team had narrowed their list of prioritized goals and identified strategies for one goal.

On Day 2, disciplinary groups continued to work on their action plan in response to directed prompts, and participants met in multi-disciplinary breakouts based on topics they proposed. Disciplinary teams identified what resources would be needed to support their action plan and then considered how these resources could be tapped. They also developed a strategy for getting feedback from disciplinary colleagues regarding their action plan and a timeline for moving their action plan forward.

### **Summer (asynchronous)**

During the summer, teams began soliciting feedback about their action plan from other disciplinary colleagues, posted an update on their progress, and revised their action plan. The workshop leaders and consultants provided feedback on the initial action plans in early summer, followed by a peer review process at the end of the summer whereby participants provided feedback on action plans of two other disciplinary teams. Participants particularly valued the perspectives of colleagues in other disciplines including affirmations of strengths as well as suggestions. Leaders also offered the opportunity for short meetings if requested.

### **Fall: Workshop Days 3 & 4**

On Day 3, disciplinary teams gave 90-second lightning talks (one-slide presentations about their updated action plan) followed by time for participants to ask questions in virtual poster-session breakouts. Next, program officers from the National Science Foundation gave presentations about four NSF programs. These programs, particularly the *Innovations in Two-Year College STEM Education* program, could provide external support for action plan implementation. A series of Q&A breakouts followed the presentations. These sessions provided insights for teams who might be considering how grants could help move their action plan forward. By the end of Day 3, the teams had shared their action plans, learned about plans of other disciplines, learned more about NSF programs, and considered implications for their action plans.

Day 4 included micro-presentations about successful disciplinary projects not connected to the current workshop (see list on page 11), many of which were funded by grants from NSF. These presentations were followed by a series of Q&A breakouts. Disciplinary teams met to share insights gained from the micro-presentations and other previous sessions (e.g. NSF sessions), discuss implications for their work, and make plans for next steps. Participants met in breakouts on topics they suggested to promote cross-disciplinary exchange of ideas. The workshop concluded with a session in which participants reflected on their experience and leaders shared their insights from the workshop. By the end of Day 4, each team had a focused plan for engaging 2YC faculty with their disciplinary society/societies, a timeline for future work, and possibilities for NSF funding as well as cross-disciplinary collaborations.

## **3: Action Plans: A Framework for Change**

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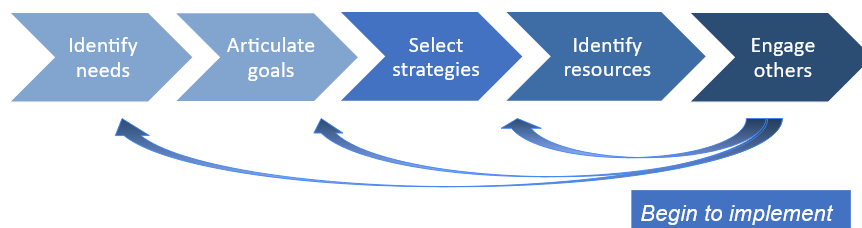
*"We have a plan for collaboration that we wouldn't have, and I'm motivated to try to establish/further a network in my region."*

*"[We identified] some relatively quick and easy changes we can make on the association's side to bring more visibility and resources to 2YC members."*

Action plans were the heart of this workshop. Through a scaffolded approach, disciplinary teams (2YC faculty and disciplinary society representatives) developed and began to take steps to implement a discipline-specific action plan to expand collaborations between 2YCs and disciplinary societies.

The action plan process was based on the expressed need by participants in the 2022 workshop for more time to develop specific plans that would move their vision into action. One goal of the 2023 workshop was to offer more time, structure, and support as the participants moved their ideas into actionable plans.

The process began by defining what an action plan would look like. The pre-workshop assignment included a video and handout describing the action plan process (see image and sidebox below). The workshop guided the disciplinary teams step-by-step as they shaped their ideas into concrete plans for action that could be implemented within a reasonable time frame. The process continued throughout the workshop, including asynchronous work over the summer, and teams presented their revised action plan in lightning talks and poster sessions on Day 3.



Each disciplinary team was given a worksheet to guide them through the action plan process and an action plan slide template (all in shared documents). The action plan slide included space to write their goal(s), strategies, resources, and questions for feedback.

To lay a foundation for the action plan process, the disciplinary discussion sessions included how to move from needs to goals. For example, a need might be expressed as “2YC involvement in our disciplinary society is low” with a possible goal of “Increase 2YC faculty membership in disciplinary society by 10% in two years.” Each team was given time to list possible goals individually and then share them round-the-room. As a team, they then categorized and prioritized the list - selecting one goal on which to focus in the next stage of the workshop.

With their team’s top goal in mind, participants were asked to spend a few minutes individually generating a list of possible strategies. For example, if the goal were to increase 2YC faculty membership, one strategy might be to survey 2YC faculty to understand why faculty did or did not join their disciplinary society; another strategy might be to offer a discounted membership rate for 2YC educators. After sharing their strategies, the teams discussed which ones would be most effective and doable and considered possible barriers and how to address them.

The timeline and next steps were the focus of Day 2 action plan work. Teams were first asked to consider what resources (e.g., individuals who would champion their work, relevant programs or policies, and funding sources) would help support their action plan. They then discussed ways to get

#### Action Plan Process

1. **Identify needs** within the context of what 2YCs and disciplinary societies each bring to the table.
2. **Articulate goals**, both short-term & long-term, & select one on which to focus.
3. **Select strategies** that could help achieve the stated goal, considering barriers, and set a timeline for who will do what, when, and measures of success.
4. **Identify resources** (people, structures, internal/external grants) to support the action plan. Consider how resources can be tapped and what they can provide.
5. **Engage others** and get feedback about the draft action plan, then revise.
6. **Begin to implement action plan** and document progress.
7. **Revise** as appropriate along the way.



feedback from others in their discipline, which could also serve as a way to get buy-in, and established a timeline for who would do what and when to get this feedback. At the end of Day 2, teams revised their draft action plan and finalized the timeline to implement their plan.

During the summer, teams revised their action plan based on feedback from their disciplinary colleagues beyond their teams and posted an update on their progress. Workshop leaders, consultants, and participants from other disciplines then provided feedback allowing for further revision and exchange of ideas before Day 3. The Day 3 presentations and virtual poster-session breakouts were the culmination of the workshop's action plan process. Teams were then given time to meet and discuss further revisions and new ideas before taking the next steps to put their plans into action.

## 4: Cross-disciplinary Opportunities: Learning from Each Other

*"Cross-disciplinary meeting groups ... helped to both generate new ideas we hadn't thought of and figure out how to implement them within our own discipline."*

*"Insights from other disciplinary societies have been enormously valuable."*

Woven throughout the workshop were multiple opportunities for cross-disciplinary sharing as the action plans were taking shape (Fig. 1). The program allowed for ideas to be generated, shared, and built upon through the interweaving of multi-disciplinary and disciplinary groups. Participants reported on the value of this time spent both in developing action plans with their disciplinary team and the influence of hearing ideas from other disciplinary perspectives.

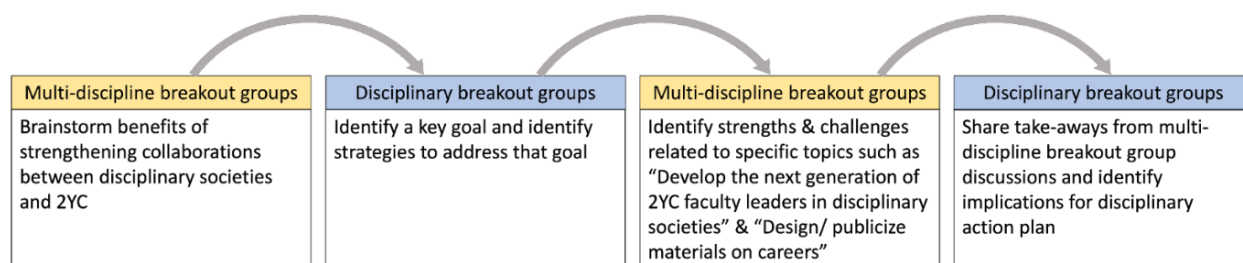


Figure 1: Example of sessions from Day 1 showing interweaving of multi-disciplinary and disciplinary program activities.

Through these cross-disciplinary activities, participants learned about programs and practices of other disciplines. Participants reported that their action plans were shaped both by identifying their own disciplinary needs and by cross-disciplinary discussions that revealed a range of professional society structures, communications platforms, and strategies for engagement. These discussions also included possibilities for future collaborations.

The following four opportunities are described in more detail below:

- Short randomly-assigned breakout groups
- Self-selected topical breakout groups
- Feedback on action plans
- Disciplinary project presentations and breakout groups

In all of these activities, participants learned how other disciplines were connecting 2YCs and disciplinary societies thus enriching their disciplinary action plan work.

### **Short randomly assigned breakout**

Each day, the workshop included short (10-15 minutes) breakout discussions in groups of three participants, randomly assigned by Zoom and adjusted to ensure that participants were from different disciplines. The prompt questions were given before the breakout along with a short time to let participants think about the question. In the breakouts, participants were asked to round-the-room share their responses, with time for discussion. One example prompt was to share something that excited them about their action plan. These breakouts, typically scheduled as a generative opening activity and/or during the closing plenary to reflect on learning, provided a chance to meet colleagues from other disciplines and learn about their work.

### **Self-selected topical breakout**

Three times during the workshop, participants selected from a list of topics derived from participants' interests or suggestions for breakout discussions. These topical breakouts were longer than the randomly assigned breakouts (30-60 minutes) and ranged in size from 2-8 participants. Similar to randomly assigned breakouts, they included a prompt and a suggested structure of a round-the-room sharing to allow all participants to contribute. Each group also had a slide or document in which to take notes and record takeaways to share with their disciplinary group. These sessions provided a multi-disciplinary space where participants could exchange ideas, challenges, and successes with colleagues on topics of interest.

The themes listed below in bold represent our grouping of topics from 35 breakout sessions. The range of specific breakouts for each theme follows the heading.

- 1. Strengthen engagement of 2YCs with disciplinary societies**

Create and maintain lists of current 2YC faculty in a discipline; strengthen communication and engagement with 2YC faculty in disciplinary societies; establish tiered fees for 2YCs; increase opportunities for students to engage with disciplinary society activities; develop 2YC-disciplinary society collaborations to support diversity, equity, inclusion goals in teaching practices and within the profession.

- 2. Use regional activities as well as national conferences to engage and support 2YCs**

Explore the value of state/regional/national conferences; establish regional nodes to national conferences; offer regional workshops on topics of cross-disciplinary interest; hold a national virtual workshop on how to sustain regional groups.

- 3. Include and develop 2YC faculty leaders in disciplinary societies**

Build 2YC faculty representation in leadership and governance positions in disciplinary societies; develop the next generation of 2YC faculty disciplinary society leaders.

- 4. Offer professional development relevant to 2YCs that strengthens connections to disciplinary societies**

Offer workshops, both discipline-based and cross-disciplinary, on active learning pedagogy, interdisciplinary course design, and accessibility with a focus on neurodiverse populations; help faculty access and use more STEM education research strategies; discuss how to teach with AI access (e.g. ChatGPT).

- 5. Support undergraduate research in 2YCs**



Explore how to support undergraduate research in 2YCs through 2YC-disciplinary society collaborations; connect students in introductory-level classes to research opportunities; establish research and other opportunities in which 2YC and 4YC faculty and students collaborate; engage 2YC students in community participatory research across disciplines.

**6. Help facilitate 2YC students' professional pathways**

Design and publicize discipline-specific materials and resources on careers for use by 2YC faculty and students; prepare students for transitions from 2YCs including workforce and transfer; share effective strategies for transfer (2YC-4YC) and articulation; support 2YC-4YC connections.

**7. Other topics**

Address status of 2YCs in the higher education landscape; work with and support adjunct faculty; discuss post-Covid experience/implications for both students and faculty; offer opportunities for disciplinary society representatives from across disciplines to meet.

These breakouts illustrate the range of topics important to the workshop participants. The cross-disciplinary sessions provided a place for participants to discuss topics of mutual interest and to learn from other 2YC faculty/disciplinary society representatives facing similar issues.

Near the end of Day 3, a brief presentation about a successful cross-disciplinary project was given as an example. Inspired by discussions during the 2022 workshop, a group of mathematics, physics, and chemistry faculty continued to work together to submit a successful NSF conference proposal and offer a workshop on [\*Facilitating Accessibility in STEM for Students with Disabilities at Two Year Colleges\*](#). This presentation illustrated the potential of cross-disciplinary collaborations.

***Feedback on action plans***

Throughout the workshop, disciplinary teams shared their action plans with other participants to get feedback. This feedback process included discussions during randomly assigned breakout groups, individually assigned asynchronous reviews of draft action plans of two other disciplines, and discussions during the virtual poster session. These opportunities enabled participants to learn what other disciplines were planning and to get feedback (affirmations, questions, and suggestions) from other participants, workshop leaders, and consultants. In-progress feedback provided fresh perspectives and insights, helped participants clarify their ideas and discover gaps, and improved their plans as they evolved.

***Disciplinary project presentations and breakouts***

To provide inspiration for future projects, the workshop included presentations on a variety of previously completed or on-going projects and programs offered within disciplines (see Table 2). In this Day 4 session, representatives from each discipline described a project in a 60-second presentation using one slide. The series of ten micro-presentations was followed by three 12-minute cross-disciplinary breakout sessions, allowing participants to follow-up on projects of interest to them. Presentations included programs for students and faculty, awards for excellence in 2YC programs, and a variety of discipline-based professional development at different scales and durations. The projects are listed below in the order of presentation.

Table 2: Presentations on previously-funded projects to provide disciplines with successful examples.

Discipline	Project title and information
Psychology	<a href="#">Psi Beta</a> : Community College National Honor Society in Psychology. Offered a virtual Psychology Teaching Conference and a National Virtual Psychology Summit for student members and advisors, which included an online student poster session.
Geography	American Association of Geographers (AAG) gives an Award for Associates Program. Scroll down the page and read more about the award here: <a href="#">Community Colleges and Geography - AAG</a> .
Economics	<a href="#">Supporting Two-year College Economics Faculty at the Conference on Teaching and Research in Economic Education</a> , NSF <a href="#">award abstract</a> , 2015-2018. Participants stayed an additional day at the conference and developed teaching materials.
Political Science	<a href="#">Teaching Political Science at a Community College</a> , a three-week virtual teaching and learning symposium offered by the American Political Science Association (APSA), Committee on the Status of Community Colleges in the Profession, July 11-29, 2022.
Chemistry	<a href="#">Two-Year College Faculty Workshop</a> offered by the American Chemical Society (ACS). Developing and integrating active learning techniques into participants' teaching; creates a community of practice for 2YC chemistry faculty.
Biology	National Association of Biology Teachers (NABT) <a href="#">Introductory Biology Task Force</a> , a professional learning community of instructors at 2-year and 4-year institutions & those who teach dual enrollment or Advanced Placement (AP) courses.
Mathematics	Advancing Undergraduate Research at HSI Community Colleges (NSF) NSF Division of Undergraduate Education, 2023-2024, NSF award <a href="#">abstract</a> . Fall webinar series, a conference in February, and creation of a community of practice.
Meteorology/ Atmospheric Science	Weather, Ocean, and Climate Education Collaborations to Enhance Undergraduate Geoscience Offerings at Minority-Serving Institutions, 2001-2019, NSF award abstracts: Weather Studies <a href="#">a</a> , Weather Studies <a href="#">b</a> , <a href="#">Climate Studies</a> , <a href="#">MSI-REaCH</a> .
Geoscience	<a href="#">SAGE 2YC: Faculty As Change Agents</a> - a national professional development and leadership development program. National Association of Geoscience Teachers (NAGT) & NAGT Geo2YC Division, 2015-2022. NSF <a href="#">abstract 1</a> and <a href="#">abstract 2</a> .
Physics	Organization for Physics at Two-Year Colleges ( <a href="#">OPTYCs</a> ), American Association of Physics Teachers, 2022-2026, NSF <a href="#">award abstract</a> . Cohort-based programs (e.g., New Faculty Development Series, Leadership Institute) and several ongoing programs.

Throughout the workshop, these cross-disciplinary sessions provided multiple ways for sharing ideas to strengthen the engagement between 2YCs and disciplinary societies. They illustrate the interest of participants in sharing what works well in their discipline and learning what works well in other disciplines, expanding ways of addressing critical issues.



## 5: Design for Success: Workshop Activities

*"I think having the scaffolding and structure was most helpful. The documents and templates were also incredibly helpful and well-organized. They encouraged focused productivity--as someone who has organized prof dev [in other settings], I especially appreciated the design and materials."*

*"Having the dedicated time in breakouts to work together was really helpful. So many of these conversations are pieced together at other conferences or between meetings. It was a really nice feature of the design."*

Building community in a virtual environment was one goal of the workshop leaders. Sessions were designed to be interactive and to give participants a chance to get to know each other, work closely with their team, and learn from other disciplines. The following strategies contributed to participant engagement and community building in a large virtual workshop.

- **Introduction slides:** Before the workshop, these introduction slides (using a template slide with example slides completed by leaders) gave participants an opportunity to learn more about each other and their expertise, experience, and interests. Participants were encouraged to use the comment function in these shared documents to begin communicating with one another.
- **Community norms:** The shared norms described on Day 1 set a tone of respect and clarified expectations for workshop participation and group dynamics.
- **Breakout group discussions:** Breakouts provide opportunities for participants to share ideas and learn from each other. For all breakouts (random, self-selected, team, and multidisciplinary), giving clear instructions, specifying the timing, and leaving time for questions led to productive sessions. The strategy of individual reflection, round-the-room sharing, then group discussion, was one way to promote equitable discussions.
- **Micro-presentations by participants followed by breakouts.** The workshop included two variations of very short (60-90 seconds) one-slide presentations followed by Q&A in breakouts. The lightning talks were followed by a virtual poster session, and the micro-presentations about disciplinary projects were followed by breakouts, both giving time for participants to learn and interact.
- **Reflection time.** At the end of each day, participants had an opportunity to reflect on the day's activities and then share ideas with two other participants in a randomly assigned breakout. This valuable time gave participants a chance to focus on takeaways from the day.
- **Daily roadchecks.** The daily roadcheck surveys, which included questions about their workshop experience, provided anonymous feedback for workshop leaders. The roadcheck responses, summarized in the plenary the following day, were valuable formative assessments of the workshop and enabled workshop leaders to make changes in real time to improve the workshop (e.g., reiterating group norms, making directions clearer for small group discussions, clarifying where group documents were posted, allowing even more time for disciplinary team discussions).

In addition to the above strategies, the following insights may be useful for others planning future virtual workshops or events.

- For interactive sessions to work smoothly in a virtual workshop, having one person who understands the program and is responsible for managing the technology is crucial.

- Balancing the time working in disciplinary teams as well as cross-disciplinary discussions, both of which were valued by participants, is important.
- Some participants found the four-hour Zoom meetings too long, even with the breaks.
- Some participants wrote on the end-of-workshop evaluation that a stipend would have been appropriate given the work commitment.
- Many participants were interested in external funding opportunities but were unfamiliar with them. Presenting a large volume of information about both federal funding opportunities and the process of submitting a grant proposal in a single session may have led to information overload. One solution for a do-over would be to introduce this information more gradually so we could address questions as they came up.
- Looking back, we wondered if adding more formal "consultation hours" during the workshop and in the summer would give participants or teams a chance to discuss their action plan development with a workshop leader.
- For future workshops that have spring and fall sessions, it might be useful to offer formative focus groups over the summer to provide workshop organizers with richer feedback about needs and impressions that could be used in refining plans for fall sessions. The focus groups could provide a deeper understanding of the change process.

Developing a sense of community in a virtual environment takes careful planning. The results are worth the effort as participants connected within and across disciplines, wanted to keep the momentum going, and were thinking about ways to collaborate in the future.

## 6: Moving Forward: Plans in Action

*"We had already started collaborations and this really catalyzed and moved forward action items."*

*"We have a plan, and it feels doable and tangible, and not just an idea."*

The workshop's interactive format and the action plan process provided structure, time, and support as the participants moved their ideas into actionable plans. The first two days of the workshop, nearly three-quarters of the time, was spent in discussions surrounding action plan development interspersed with brief (5-8 minute) presentations to guide them through the action plan process. These disciplinary and cross-disciplinary discussions gave participants the opportunity to exchange ideas and get valuable feedback. Participants reported that maximizing both the disciplinary and cross-disciplinary discussion time was key to their progress.

The final versions of the action plan slides, presented on Day 3, revealed the goals and strategies teams were working on and their plans for the future. We asked each team to focus on one goal during the workshop; the sidebar box below lists these goals. The following list of goals and strategies illustrates the variety of concrete ways that teams plan to foster 2YC collaborations with disciplinary societies, which we have grouped into five main categories.

### 1. Increase 2YC participation in disciplinary societies

- Generate a contact list of 2YC faculty in the discipline



- Conduct a needs assessment: investigate what motivates 2YC faculty to engage with the disciplinary society and barriers to participation
  - Conduct a survey to learn what 2YC faculty value regarding programs, resources, meeting formats, and registration fees, and/or barriers to participation
  - Collect data on who is participating at disciplinary society meetings
  - Learn more from 2YC faculty about their perspectives on disciplinary societies (e.g. virtual listening session, roundtable at national meeting)
- Increase membership & engagement of 2YC faculty and students in disciplinary societies
  - Address perceptions of 2YCs about disciplinary societies
  - Elevate status of 2YC faculty in disciplinary societies emphasizing their teaching expertise. One approach might be to encourage 2YC faculty to author articles in disciplinary society publications.
  - Consider funding and cost: Offer tiered membership rates, reduce or fund registration for 2YC faculty, provide travel support to meetings
- Publicize opportunities: Market conferences and events to 2YC faculty, host an informational webinar, offer relevant panels and events at conferences, including virtual possibilities

#### **Disciplinary team goals**

- Create a contact list of 2YC faculty. [Chemistry]
- Increase 2YC membership, value of 2YC to disciplinary society and vice versa. [Biology]
- Increase 2YC faculty and student participation in disciplinary society meetings. [Geoscience]
- Improve 2YC participation at national meetings. [Physics]
- Increase engagement of 2YC faculty and students in disciplinary societies by 10% in the next two years; collaborate with other organizations with the discipline on CC relevant initiatives. [Psychology]
- Propose a “Community College Community” within the American Sociology Association. [Sociology]
- Identify/develop 2YC leaders for representation in the disciplinary society in the next year. [Economics]
- Within two years, create a dedicated council-level leadership position for a 2YC faculty member. [Geography]
- Create 2YC-4YC connections; increase faculty engagement/opportunities within AMS [Meteorology/Atmospheric Science]
- Collect data on math topics needed in different disciplines and industry. [Mathematics]
- Grant/funding opportunities for 2YC faculty; create new standing committee in the disciplinary society for 2YC faculty; make access to conferences easier for faculty and grad students; nominate 2YC faculty to serve on governing board/executive councils. [Political Science]

## **2. Include 2YC faculty in leadership positions within disciplinary societies and develop the next generation of leaders**

- Increase leadership positions in disciplinary society (e.g., dedicated 2YC position at the council level or on standing committees)
- Nominate 2YC faculty to serve on disciplinary society committees and governing boards
- Develop 2YC leader(s) for representation of 2YCs in disciplinary societies

## **3. Re-consider disciplinary society conferences and structures**

- Brainstorm different meeting structures
- Experiment with different regional workshop formats and content, both virtual and in person
- Offer a research/teaching symposium for 2YC faculty and students at regional meetings
- Establish new organizational structures (e.g., 2YC standing committees, official 2YC communities in disciplinary societies)

## **4. Offer professional development relevant to 2YCs**

- Engage 2YC faculty through workshops and other professional development opportunities at conferences or other times/venues
- Provide strategies for addressing diversity, teaching, and funding
- Promote use of existing resources

- Advocate for continued professional development with college administrators
- Support grad students in developing teaching and learning knowledge, skills, and attitudes so they are better prepared for careers at 2YCs

#### 5. Other plans for action

- Explore NSF funding
- Create undergraduate research opportunities
- Catalyze 2YC-4YC connections; establish an associated database of existing collaborations and connections
- Collaborate with other disciplinary societies on 2YC-relevant initiatives both within a single discipline and on cross-disciplinary initiatives
- Survey 2YC faculty and industry representatives on the mathematical topics and skills needed in different disciplines and industry

Below, as examples, are highlights from two teams' action plan goals and strategies.

<p><b>Sociology Action Plan</b> The sociology team's goal was to propose a "Community College Community" within the American Sociology Association (ASA). ASA Communities are member-generated groups approved by the Council. After ASA approves the Community, the team plans to promote the community to existing CC (community college) lists, outreach to regional associations, and work with the Section on Teaching/Learning. The team identified their biggest challenge as overcoming perceptions CC faculty may have about ASA noting that increasing CC participation will require providing value and a sense of belonging in the discipline. A team member attended CC coffee hours at the ASA Annual meeting and collected information from other CC faculty about their needs, which included funding, spaces on the program, listserv, and professional development opportunities. The team plans to circulate information about results of a previous CC Taskforce and identify and market conference sessions of interest for CC faculty. The team's question as they move forward is "how can we create a robust and sustainable community where people can make connections for sharing experiences, teaching strategies as well as for collaboration?"</p>	<p><b>Geoscience Action Plan</b> The geoscience team's goal was to increase 2YC faculty and student participation in disciplinary society meetings. Their strategies include making sure the 2YC voice is heard in disciplinary societies, collecting data on participation of 2YC faculty and students at disciplinary society meetings, surveying 2YC faculty to determine barriers to participation, and working with disciplinary societies to explore the possibility of a tiered membership and reduced registration for 2YC faculty. The team reported that a new 2YC representative position on the American Geophysical Union's Education Committee has been established (and filled!), which ensures that 2YC perspectives are shared. The team was interested in feedback about how other disciplines have advocated for membership and registration categories for 2YC students and faculty in their disciplinary societies. Their next steps include collecting data on 2YC participation at meetings, exploring a possibility of funding faculty participation at disciplinary society meetings, and establishing a new working group on this topic at the next Earth Educators' Rendezvous, a five-day conference drawing from work in geoscience, environmental, and sustainability education.</p>
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These examples of action plan goals and strategies reveal a range of concrete plans to strengthen engagement between 2YCs and disciplinary societies. By mapping out ways to increase 2YC membership, participation, and engagement within disciplinary societies, these plans suggest changes in organizational practices and structures that could enable more collaboration between disciplinary societies and 2YC faculty and students. The plans lay a foundation for a future that includes more 2YC faculty in leadership positions and conferences (topics, location, cost), professional development, and resources designed with 2YCs in mind. Exciting possibilities for exploring NSF and other funding, undergraduate research opportunities for 2YCs, 2YC-4YC connections, cross-disciplinary collaborations, and workforce and career pathways are on the horizon.



## 7: Conclusion

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*"I gained possibility. What I mean by this is that I saw what others have done or are doing and it gave me ideas of what I could possibly do in the future."*

This workshop brought 2YC faculty and disciplinary society representatives together to explore mutual benefits and possibilities of working together. Disciplines are dealing with similar challenges in fostering such collaborations. Building understanding and trust takes time, and the workshop created time and space for 2YC faculty and disciplinary society representatives to discuss ways to address issues critical to both and learn from each other as well as other disciplines. This interactive workshop provided opportunities for deepening relationships and sharing ideas. It also laid the foundation for ongoing, future work, including ways to get funding in an environment of resource constraints. Key to the success of the workshop was the dedication of participants who, without stipends and by working over the summer, moved their visions of increasing engagement between 2YCs and disciplinary societies into actionable plans. One participant affirmed that *"Being part of a strong, thoughtful, and collaborative working group that I know will continue based on the work already done and our enthusiasm for future initiatives [was valuable]."* The work of building strong engagement between community colleges and disciplinary societies must be ongoing.

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