Evaluation of the pilot program of SciComm STEP: Sparking Transitions for Experienced Professionals

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We developed and implemented the pilot of a science communication career development program centered on mindset and habit-building and featuring a facilitated community of practice. This program went beyond providing advice; we worked through the actual steps needed for participants to advance their own career goals and impacts.

This framework emerged from a request we have received for years from experienced science communicators: extended time in a deliberately facilitated community to plan for advanced career growth.

By all our measures, this pilot program was thoroughly successful. We look forward to welcoming more cohorts into this program in the future.

1. STEP goals

We built SciComm STEP (Sparking Transitions for Experienced Professionals) to guide experienced science communicators (SCs) to shift their approach to professional growth, by using practices they already apply to science communication *in service to themselves* to overcome career-advancement barriers. We intended for participants in this multi-month, cohort-based program to create individualized action plans that would keep them moving forward long beyond the program's end. We pursued funding[1] specifically to make intensive, product- and mindset-focused professional coaching available to a broad swath of SCs without requiring membership or paywalls.

In essence, STEP aimed to enable SCs to:
1. **Leverage skills for self-advancement:** Focus experienced SCs' attention on their existing, advanced scicomm skills, to leverage those skills in service *to their own careers*, not merely for editors, employers, clients, or mentees.

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2. **Articulate action plans:** Coach experienced SCs to develop tangible, multi-faceted action plans to help them overcome self-identified and field-identified career-advancement barriers.
3. **Access affordable, cohort-based career coaching:** Intensively coach experienced SCs in a peer-learning/support setting at little-to-no-cost to the SCs, to reduce access/participation barriers.

2. STEP design

2a. Structure + implementation

Financial support: We set the registration fee quite low ($35/person) compared to other, similar-caliber cohort and coaching programs. We did so to address inequity and issues of access associated with fee-based professional development and mentoring programs. We did not set the fee at $0 because we wanted participants to feel some concrete commitment to participating in the program. We were able to set the registration fee so low because the pilot program was funded by the National Association of Science Writers[1] (NASW).

Logistics: We designed the program to be an intensive, action- and application-focused course with regular, synchronous meetings in a cohort format (in Zoom). In-meeting work was complemented by prep/follow-up reflection in an asynchronous format (in Slack). We developed STEP this way, rather than alternatives such as a series of informational webinars or 1:1 meetings, because of feedback from formal and informal surveys and discussion sessions we have facilitated in the past 5-10 years. These sources revealed that potential participants preferred multi-meeting, community-based interventions. Professionals in our target applicant pool have also shared that they are most likely to commit to an interactive course that requires action from them during synchronous meetings and incorporates accountability structures for asynchronous work.

We worked with the selected participants to determine a time that best suited everyone's availability while also taking into consideration that we had participants from Brazil, Romania, and across time zones in the U.S. After consultation with the participants, we scheduled the program to run weekly, rather than every other week as we had originally intended.

Content: Each synchronous session dealt with a single, major topic that mid-career professionals experiencing career transitions need to have clarity and confidence around. These were:
1. **Articulate and refine your goals:** Employ evidence-based, goals-first scaffolding and a customized evaluation plan to structure your passion and prioritize your projects.
2. **Frame a slam-dunk professional identity:** (1) Use career experiences as affirmation; (2) wield your CV/resume as a motivational tool, not a document that asks for permission; and (3) craft a rockstar biography that succinctly and irresistibly articulates who you are and why what you do matters.

3. **Develop advanced social media strategies:** Understand and maximize your social media impact while staying grounded in your values.
4. **Hone your website to invite opportunity:** Grow your career with a website that sculpts you into the person you want to be.
5. **Master mid-career networking techniques:** Shift your habits in order to make the most of your earned experiences.
6. **Protect your time:** Identify which activities build you and your community up, and plan for how to gracefully say no to those that don't.

Facilitation: Each week, participants received a prompt via Slack to read and/or do an activity in preparation for the coming week's session. These prep tasks included things like:
● Writing 1 - 3 sentences summarizing relevant self-reflection
● Reading a short, relevant article

During synchronous sessions, we facilitated a progression from high-level reflection and discussion down to step-by-step prompts to stimulate participants to express their own goals, identify their own metrics, and establish actionable steps they can take. Each meeting also included time for impromptu, peer-led discussions sharing lessons learned and advice.

Following each synchronous session, we asked participants to do the following in the Slack community:
● Post one takeaway from the day's session
● 24 hours later, post how the session's activities were influencing their thinking

We also encouraged participants to share their own preferred resources, relevant career dilemmas, and more in the Slack community throughout the program. And, while we will not actively prompt Slack discussions now that the pilot program has ended, we have invited participants to continue using the Slack space to engage with each other as long as they want. As of December 2022, there had been light use initiated by participants. However, we're delighted to note that spring and summer 2023 have seen considerable use, particularly with posts/interactions celebrating progress toward goals and action plans defined during STEP, professional advice sharing, etc.

2b. Recruitment

We actively recruited applicants using a wide range of platforms and networks, including NASW national and regional groups, our personal social media platforms, and numerous professional networks with which we interact (e.g., Science Communication Trainers Network, Institutional SciComm Slack, the extensive science writers and science communicators networks on Twitter). We knew we reached beyond our own networks because most applicants were not previously known to us, and because we had applicants from nearly every continent.

We also had more than a dozen people complete our form to register interest while not applying for the Fall 2022 Cohort. These people had two main constraints: they self-identified as early-career or they did not have time for participation that fall. A subset of these interested people were based in time zones that were not conducive to participating in the early evening of U.S. time zones. That said, we did accept people from numerous

continents and time zones, and at least one participant was active in the entire program despite synchronous meetings occurring at roughly 2:00 am in their local time zone.

Our only requirements for program acceptance were that STEP participants *must* be science communicators that were:
1. beyond entry-level,
2. seeking more than just skill-building or help with specific tasks/objectives, and
3. committed to career discernment in a peer-learning environment focused on career transitions.

Adhering to our pre-defined selection criteria meant all participants had goals that participating in the program could help them meet.

2c. Axes of diversity reported by applicants + participants

Clarifications
1. We hid identifying information and responses to demographic/identity questions during the selection process. We only reviewed demographic/identity responses after we issued acceptance offers to selected applicants. We recognize this had the potential to support individuals with more axes of privilege, but we also note that research and field scoping reports indicate that: (1) hiding identifying information can help reduce reviewer bias and (2) a marked number of SCs are from minoritized demographics. Ultimately, our pilot program's participants reflected a wide range of diverse identities.
2. The figures below depict self-reported data collected during the application process.

Figure 1. Employment type ranged across several major sectors in both the applicant pool and the accepted pool. Likewise, applicants and participants' foci within science communication ranged widely. We considered these indicators of success for our goals of recruiting and accepting diverse participants, and reaching beyond our known networks. Another indicator of success was that ratios of diverse employment type and product types were retained through the program.
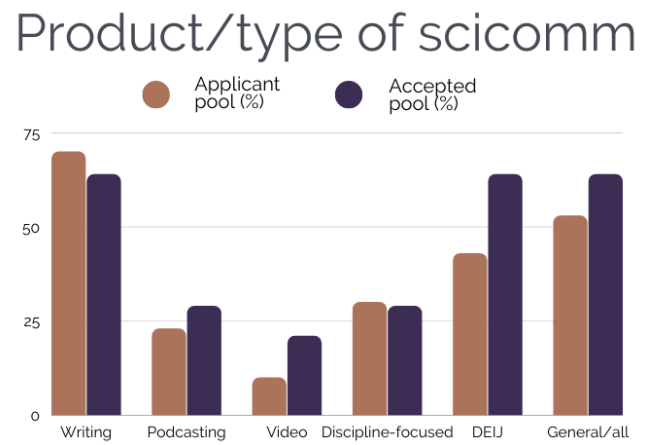
Figure 1a.

Figure 1b.

Employment type

Applicant pool (%)   Accepted pool (%)

60

40

20

0

TT faculty · NonTT faculty · Academic staff · Student · Not academic · Freelance

Product/type of scicomm

Applicant pool (%)   Accepted pool (%)

75

50

25

0

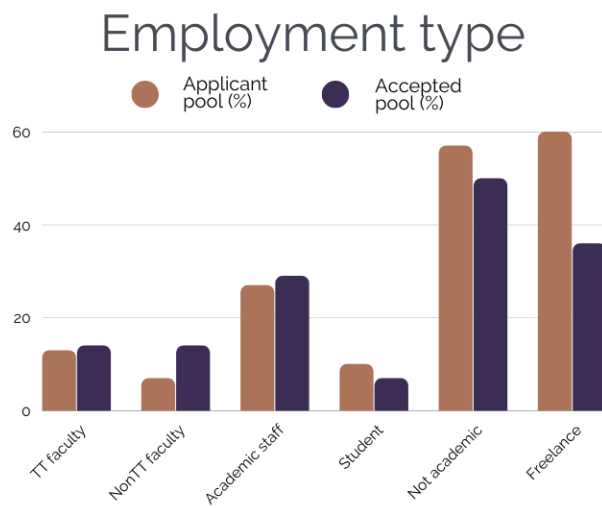Writing · Podcasting · Video · Discipline-focused · DEIJ · General/all

Figure 2. A fairly high number of applicants and participants had completed previous skills training (in career and science communication skills arenas) and had previously held professional leadership positions. However, both applicants and participants felt those trainings failed to address the career advancement needs they hoped STEP would address.

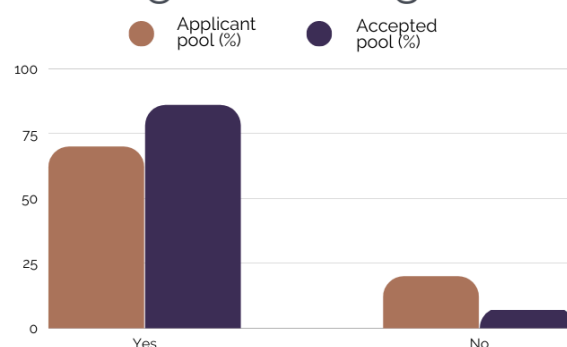Figure 2a.   Figure 2b.
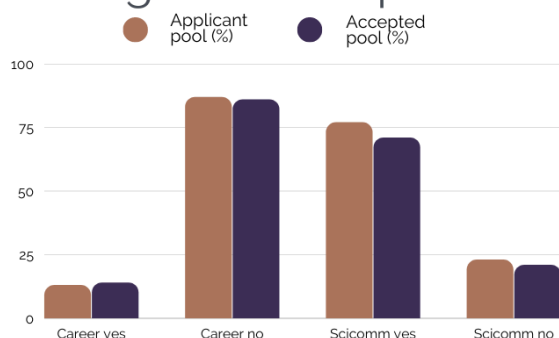
Figure 3[2]. Our applicant pool appears to reflect the predominant known identities in science communication. Our applicant and accepted pools also align with existing research about who is most likely (or expected) to prioritize science communication within their careers. As such, we clearly reached the likely pool of applicants for STEP. However, in future iterations of the program, we would like to work to expand the range of applicant identities (particularly with regards to gender and cultural identity).
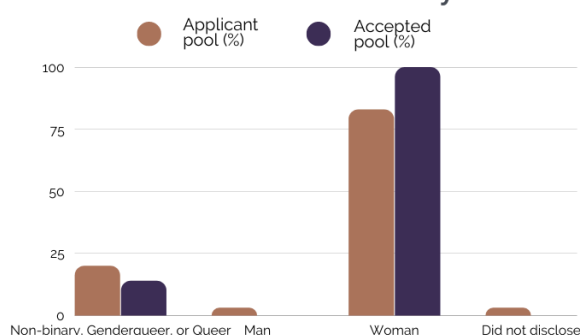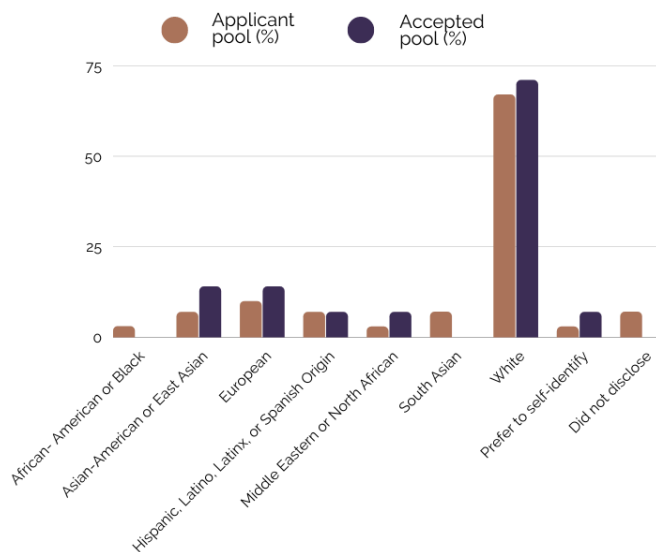

Figure 3a.

[2] Gender and geographic/cultural identities are not the only or necessarily the most important measures of applicant and cohort diversity. They are certainly not the only aspects of identity we aimed to include and support with STEP. However, we found that applicants and participants were most accustomed to shoehorning their identities into these categories. For example, we invited applicants to indicate any other elements of identity or lived experience that they felt relevant. People indicated perspectives/experiences including additional cultural identities, living with chronic health issues, having a disability, being first-generation, neurodivergence, being an orphan, running a small business, and being a parent. Most of those perspectives were only voluntarily reported by one participant each, despite evidence (from application essays, for example) that numerous applicants could have also identified as such.

Figure 3b.

Geographic + cultural identity

Legend: ● Applicant pool (%) ● Accepted pool (%)

Categories (x-axis): African-American or Black, Asian-American or East Asian, European, Hispanic, Latino, Latinx, or Spanish Origin, Middle Eastern or North African, South Asian, White, Prefer to self-identify, Did not disclose

3. STEP outcomes

3a. Evidence of success

We were extremely pleased with the feedback from the pilot cohort. Here are three quotes that exemplify the unanimous theme of the participants' post-program feedback.

> "I deeply appreciate the connection of applying what we know about doing meaningful scicomm to ourselves and our own work. One of the things that served me most was hearing language and articulation about things I had gut feelings about, which makes me have some useful direction in thinking through it more."

> "I thought this was a well-thought-out program from start to finish. I especially liked how it made me think about tying my professional and social media identity/ presence to my overall goals and where I want to end up. I have a clear pathway forward of the things that I need to do towards my professional goal. Before this program, I was unable to perceive a starting point or how important the small details are (e.g. having a website). It's much clearer to me now and I'm grateful for this supportive group of kickass scicommers!"

> "I am really impressed with the quality and excellent content in the sessions. I learned new things (normally MANY new things) in each session and the overall program has really given me a working framework to assess where I am and what I want to do."

3b. Indicators of success

As we designed STEP, we identified the following indicators of success for program participants:

1. Participants (a) articulate action plans that (b) demonstrate awareness of how advanced scicomm skills can be leveraged for personal career planning, transitions, and advancement.
2. Participants articulate at least one concrete, positive change they perceive for their career, as a result of the experience of participating in STEP.
3. Participants' candid feedback about STEP reflects self-awareness about tangible benefits of participating in the program.
4. Participants are candid about what they appreciated about STEP program design and what program elements best supported them at their current career stage.
5. At least 75% of participants would recommend STEP to someone they know.

3c. Mapping success indicators to outcomes

During and after STEP, we observed and documented evidence that STEP met and even exceeded our initial indicators of success. Below, we map out (in Table 1) how STEP outcomes relate to the success indicators we defined and clarify our sources of evidence.

Table 1. Mapping success indicators to program outcomes

SUCCESS INDICATOR	OUTCOMES	SOURCES OF EVIDENCE
1. Participants (a) articulate action plans that (b) demonstrate awareness of how advanced scicomm skills can be leveraged for personal career planning, transitions, and advancement.	Several participants indicated they are considering changing jobs; one applied for a new job during STEP as a result of the program; several participants built websites during the program (who did not previously have their own websites). One participant indicated the program helped them perceive a career-long "lone-wolf" attitude as detrimental to their goals regarding leadership in their country's nascent scicomm field. Following the planning and reflection they did in the networking session, they started using the principles of the program to actively counteract an instinct to isolate and be wary of sharing resources or collaborative work. As of the beginning of December 2022, they were deep into planning a third nationwide, digital, scicomm get-together for practitioners in their country.	Post-program survey; Slack dialogue throughout the program; takeaways at the end of each session, shared in the Zoom chat; unsolicited post-program emails from participants Relevant survey questions were: (a) "Have you experienced any changes in mindset or mental habits/approaches that you credit to SciComm STEP?"; (b) "Do you anticipate making additional changes in your professional workflow or behavior(s) based on participating in SciComm STEP?"; and (c) "Has SciComm STEP prompted you to take any actions or make any products that you wouldn't have (or wouldn't have made as soon or as high quality) if you hadn't joined the program?" These responses were supplemented by feedback in Slack and unsolicited post-program emails and Twitter posts from participants.

2. Participants articulate at least one concrete, positive change they perceive for their career as a result of STEP.	100% of participants reported: (a) specific mindset changes they credit to STEP; (b) that they anticipate making additional changes to professional workflow/behavior based on STEP; and (c) they have taken specific steps/made products directly because of STEP. A major example was that 50% of participants either made or overhauled a website during or immediately after the program.	See evidence sources from line 1, above.
3. Participants' candid feedback about STEP reflects self-awareness about tangible benefits of participating in the program.	100% of participants indicated that each of the six sessions positively changed how they think and/or how they will do things. 100% of participants indicated their intention to stay connected to members of their cohort. 33% of participants indicated planning to do so with 25-50% of the cohort, and 67% indicated aiming to stay connected with the entire cohort.	Follow-up emails from participants; post program survey. Survey question was: "Please indicate how you felt about each live session: Goals, Professional ID, Social media, Website, Networking, Time." Response options were Positively changed how I'll do things, Positively changed how I think about things, Neutral, Wanted different content on this topic, Not a helpful topic.
SUCCESS INDICATOR (cont.)	**OUTCOMES (cont.)**	**SOURCES OF EVIDENCE (cont.)**
4. Participants are candid about what they appreciated about STEP program design and what program elements best supported them at their current career stage.	1. All but one participant would have liked the program to last more than 6 weeks. The remaining person thought the program length was "just right." 2. All but one participant thought the 90-minute sessions were "just right."(The remaining participant was dealing with other issues that constrained their participation.) 3. 100% of participants appreciated the asynchronous, Slack component of the program. 4. 100% of participants said the STEP program spaces felt safe, and they were welcome to be themself. 5. Nearly 50% of participants indicated they wished the program ran longer, so they could engage more with their cohort, dedicate even more time to the work/topics of the program, etc. One participant indicated wishing for a	Post-program survey. 1-2. Question was: "What did you think of these elements of the SciComm STEP format? Length of program (6 weeks), Length of weekly, synchronous sessions (90 minutes)." Response options were too little, just right, too much. 3. Question was: "What did you think of the asynchronous aspects of SciComm STEP?" Response was open-ended. Participants indicated things like: "I've LOVED having the Slack community. Even though it's been a pretty short program, it's helped this group feel like a community" and "Useful, I was able to engage when/if I had time." 4. Question was: "Did you feel as if you were always welcome to be your full self in program spaces?" 5. Question was: "What could have

	version of STEP that also had individualized or one-on-one coaching built in. Two participants would have liked some more (than already was built-in) focus on group work. 6. Participants said things like: "I don't really know how to do that [e.g., add more program content] as I felt like every minute of the sessions were so packed with good stuff."	helped increase your engagement/involvement in SciComm STEP?" 6. Question was: "Now that you've completed the program, what else do you think should be covered in SciComm STEP?"
5. At least 75% of participants would recommend STEP to someone they know.	1. 100% of participants said they would recommend STEP to someone else, and 1 participant has already done so. 2. 100% of participants are unaware of any other programs that offer aspects of the STEP curriculum. Several cohort members indicated that they had participated in other programs that did not meet their beyond-beginner needs, but STEP did.	Post-program survey. 1. Question was: "Would you recommend SciComm STEP to someone you know?" Response options were yes, no, and other/fill-in-the-blank. 2. Question was: "15. Have you participated in or are you aware of other programs that provide aspects of what you experienced in SciComm STEP? We're tapping in to the STEP hive mind with this one. It's enormously helpful to understand if/how STEP addresses a niche and/or if we can refine it to be more complementary to other programs."

3d. The future of STEP

Bolstered by the overwhelmingly positive feedback we received from cohort 1 members and our own insights from running this pilot, we plan to seek sustained funding for future STEP cohorts. Our goal is to run the program annually.

Based on participant recommendations and our own insights from running this pilot, future STEP programs will keep a cohort-based learning environment (facilitated via Slack and Zoom). We would consider lengthening the program to run for up to twice as many synchronous sessions and to include facilitated peer feedback and co-working sessions. These changes would address the top recommendation received from nearly half of the cohort post-program (who wished for more time together and with us as facilitators). A longer program would be contingent on funding sufficient to extend the program duration.

Appendix 1. Tip sheet

Participants from the STEP program contributed to a tip sheet for other mid-career science communicators looking to navigate career transitions. We have posted a downloadable PDF version of this tip sheet on the Meteor website (meteorscicomm.org/scicomm-step).

Collectively, the facilitators and members of the fall 2022 SciComm STEP cohort identified several signs that habits or attitudes might be making mid-career transitions more difficult than they have to be. Because these detrimental habits or mindsets may seem familiar to others, we also propose some ways to shift focus and mindset to enhance confidence and efficacy for mid-career stages and beyond. The tip sheet uses the following frame: "Are you getting in your own way?" "These mindset shifts may help!"

Madalina Cocea and Marley Jarvis, both members of SciComm STEP cohort 1, especially contributed to these tips.