Figure S1 – Application form for the Science Writing Program (SWP). The form was offered to applicants using software recommended by the university ethics committee (Qualtrics). Respondents were able to save their responses and return to their form at the later date. The information presented in Fig. S4 was obtained using this form. Questions were multiple choice or multiple select (if appropriate) or free-form text response. Maximum word limits for the free-form text responses, if present, are noted.

Application Form for the Science Writing Internship Program

Q1. Please provide your full name. *[Free-form text response]*

Q2. Please provide your mailing address. *[Free-form text response]*

Q3. Provide an email address we can use to contact you about your application. *[Free-form text response]*

Q4. Do you identify as a scientist or scientist in training (e.g., a trainee working in a scientific discipline)?

- Yes
- No
- Not sure *[Text box provided for clarifying details]*

Q5. What is your current career stage? STEM = science, technology, engineering, or mathematics

- Undergraduate in STEM
- Graduate student in STEM
- Postdoctoral fellow in STEM
- Technician or other staff member (excluding postdoctoral fellow) in STEM
- Early career researcher or faculty member (i.e., researcher who has held an independent academic position for five years or less) in STEM
- Established researcher or faculty member (i.e., researchers who has held an independent academic position for more than five years) in STEM
- I am not in a STEM discipline
- Not sure *[Text box provided for clarifying details]*

Q6. What region is your institution located in?

- B.C., Alberta, Saskatchewan, or Manitoba
- N.W.T., Yukon Territory, or Nunavut
- Northern Ontario
- Southern Ontario
- Quebec
- Nova Scotia, Newfoundland and Labrador, New Brunswick, or P.E.I.
- Outside of Canada

Q7. Which scientific discipline best describes your current research work?

- Biological sciences
- Physics and astronomy
- Chemistry
- Engineering
- Health sciences
- Mathematics
- Computer and information sciences
- Other *[Text box provided for clarifying details]*

Q8. Do you have any previous training in science communication or science outreach?

- Yes
- No
- Maybe/Not sure

Q9. If you selected "Yes" or "Maybe/Not sure" to the above question, please describe: *[Free-form text response]*

Q10. Do you have any specific experience in science writing, science journalism, or science blogging? If so, please describe. *[Free-form text response with 150 word limit]*

Q11. Are there any other professional highlights you would like to draw our attention to? *[Free-form text response with 150 word limit]*

Q12. What is science communication to you, and why are you interested in it? *[Free-form text response with 150 word limit]*

Q13. If selected to participate in this program, how would this internship benefit you and your future career goals/plans? *[Free-form text response with 150 word limit]*

Q14. If selected to participate in this program, what science communication skills are you most interested in developing? *[Free-form text response with 150 word limit]*

Q15. Optional: Describe any special circumstances that you would like the application committee to consider when reviewing your application to the internship program. *[Free-form text response]*

Q16. Optional: Provide social media handles/account names, so we can tag you in posts (if you are selected as an intern). *[Free-form text response]*

Figure S2 – Final text of the pre-program survey (Survey A) used in this study. Surveys were presented to applicants or participants using software recommended by the university ethics committee (Qualtrics). Respondents were able to save their responses and return to their form at the later date. Questions were multiple choice or multiple select (if appropriate), free-form text response, or included a rating scale that could be moved to the desired level (e.g., Q19-21, 28). Maximum word limits for the free-form text responses, if present, are noted. Q, question.

Science Writing Internship Program Pre-Internship Survey (Survey A)

Q1. Do you consent to the use of your quotations in reports and presentations of study findings?

- Yes
- No

Q2. Do you consent to the use of your quotations in reports and presentations of study findings?

- Yes
- No

Q3. Please confirm that you would like to participate in the internship program, and that you expect you will be able to meet the obligations associated with full participation in the program, including attending most and ideally all of the meetings, helping to create notes about the workshops for wider distribution on the website, contributing to the blog, and maintenance of a safe and respectful environment for all participants.

- Yes, I am participating
- No, I am not participating. Please give my spot to someone on the waitlist.

Q4. Do you require any accommodations for the internship program to be fully accessible to you? The program will be delivered over Zoom, and may include both synchronous and asynchronous sessions. Specific session formats and activities will vary between workshop facilitators.

- Yes
- No
- Maybe

Q5. If you answered “Yes” or “Maybe” to the above question, please describe your accommodation needs. *[Free-form text response]*

Q6. How would you rate your general expertise in science communication? Provide your experience level on a scale where 1=none/less than a beginner and 5=mastery.

- 1=None/less than beginner
- 2=Beginner
- 3=Intermediate
- 4=Expert
- 5=Mastery

Q7. How would you rate your general knowledge of research conducted in the field of science communication? Provide your interest level on a scale where 1=none/less than a beginner and 5=mastery

- 1=None/less than beginner
- 2=Beginner
- 3=Intermediate
- 4=Expert
- 5=Mastery

Q8. Are science communication related activities a component of your degree program or required for your job?

- Yes
- No
- Not sure *[Text box provided for clarifying details]*

Q9. How many hours per week do you typically spend doing science communication related activities that are not a component of your degree program or required for your job?

- 0 hours
- 1 to 4 hours
- 5 to 9 hours
- 10 to 20 hours
- 21 hours or more

Q10. Have you received any *formal* training in science communication? Formal training includes courses provided by an educational institution as part of a degree program or other certification, an internship, or training conducted by supervisors in your workplace.

- Yes
- No
- Not sure *[Text box provided for clarifying details]*

Q11. How likely are you to consider pursuing formal training in science communication in the future?

- Certain or very likely
- Likely
- Neutral
- Unlikely
- Never or very unlikely

Q12. Do you perceive any of the following as current or potential barriers in your ability to complete formal science communication training (should you choose to pursue it)? Check all that apply.

- Lack of resources, such as funding or time
- Lack of inclusivity or accessibility in training programs
- Lack of eligibility for training programs (e.g. training programs are for students only)
- Concern that supervisors (workplace, graduate advisors, etc.) or peers will react negatively to your interest in science communication work

Q13. If you identified any current or potential barriers in your ability to complete formal science communication training, or if there are additional barriers that you may have encountered, please describe them in more detail. *[Free-form text response]*

Q14. Which types of science communication do you have experience in?

- Countering science-related misinformation
- Science journalism, science blogging, or science writing for the public
- Presenting my research to the public
- Communicating my research to journalists
- Communicating with policymakers
- Outreach to youth
- Outreach to under-represented or disadvantaged groups
- Other *[Text box provided for clarifying details]*
- None of the above

Q15. Which types of science communication do you want to learn more about and/or become more proficient in?

- Countering science-related misinformation
- Science journalism, science blogging, or science writing for the public
- Presenting my research to the public
- Communicating my research to journalists
- Communicating with policymakers
- Outreach to youth
- Outreach to under-represented or disadvantaged groups
- Other *[Text box provided for clarifying details]*

Q16. What audiences have you interacted with in a science communication context?

- General or non-expert adult audience (friends, family, community members, social media followers, etc.)
- Children or youth
- Policymakers, elected officials, or other government representatives
- Industry members and representatives
- I have not interacted with audiences in a science communication context
- Other *[Text box provided for clarifying details]*

Q17. Does your current institution have any awards, scholarships, grants, or other funding for science communication projects that you are eligible to apply for?

- Yes, but I have not applied
- Yes, but I am not eligible to apply to them
- I applied and was successful
- I applied and was not successful
- No
- Not sure

Q18. Are there any other science communication funding opportunities offered by entities outside of your institution, such as by a scientific society, government (any level), or private business, that you are eligible to apply for?

- Yes, but I have not applied
- Yes, but I am not eligible to apply to them
- I applied and was successful
- I applied and was not successful
- No
- Not sure

Q19. How impactful are each of the following activities? Rate the following on a scale where 1=not at all impactful, and 5=very impactful.

- Countering science-related misinformation
- Science journalism, science blogging, or science writing for the public
- Presenting my research to the public
- Communicating my research to journalists
- Communicating with policymakers
- Outreach to youth
- Outreach to under-represented or disadvantaged groups

Q20. How often do you encounter the following types of science communication activities? Rate the following on a scale where 1=very rare/I can only think of a few examples, and 5=very common/I can think of many examples.

- Countering science-related misinformation
- Science journalism, science blogging, or science writing for the public
- Presenting my research to the public
- Communicating my research to journalists
- Communicating with policymakers
- Outreach to youth
- Outreach to under-represented or disadvantaged groups

Q21. Which types of science communication activities do you perceive as being the most difficult? Rate the following on a scale where 1=not at all difficult/very easy, and 5=very difficult.

- Countering science-related misinformation
- Science journalism, science blogging, or science writing for the public
- Presenting my research to the public
- Communicating my research to journalists
- Communicating with policymakers
- Outreach to youth
- Outreach to under-represented or disadvantaged groups

Q22. Which of the following factors do you consider when deciding to complete or not complete a science communication activity? Check all that apply.

- Potential impact of activity
- Difficulty of completing activity
- Existence of similar initiatives/activities/examples
- Payment/financial gain for completing activity
- Prestige for completing activity
- Perceived responsibility to complete the activity
- Potential enjoyment value of completing the activity

Q23. How comfortable would you be approaching a popular media outlet to pitch an article or op-ed for publication in the popular press?

- Extremely comfortable
- Very comfortable
- Neutral
- Uncomfortable
- Very uncomfortable

Q24. Have you ever pitched an article or op-ed to the popular press?

- Yes, 5+ times
- Yes, 2 to 4 times
- Yes, once
- No
- Not sure *[Text box provided for clarifying details]*

Q25. If "Yes," what was the outcome of the pitch(es)? Check all that apply.

- Accepted and published an article
- Rejected by editor
- No response
- Other *[Text box provided for clarifying details]*

Q26. Have you ever written or contributed to a science blog?

- Yes, 5+ times
- Yes, 2 to 4 times
- Yes, once
- No
- Not sure *[Text box provided for clarifying details]*

Q27. Do regularly read a science blog or blogs?

- Yes, at least once a week
- Yes, a few times a month
- Yes, but only a few times a year
- No
- Not sure *[Text box provided for clarifying details]*

Q28. How interesting do you find each of the following topics for science communication modules? Rate on a scale where 1=not at all interesting and 5= extremely interesting.

- Equity, diversity, and inclusion in science communication
- Basic science communication skills ("SciComm 101")
- Introduction to science blogging
- Misinformation and science communication in the Post-Truth Era
- Pitching, journalism, and publishing in the popular press
- Careers in science communication

Q29. Beyond the topics listed above, what else would you like to learn about science communication and/or what skills do you want to develop? *[Free-form text response]*

Q30. Is there anything else you would like us to know about your views on science communication in Canada? *[Free-form text response].*

Figure S3 – Final text of the post-program survey (Survey B) used in this study. Surveys were presented to participants using software recommended by the university ethics committee (Qualtrics). Respondents were able to save their responses and return to their form at the later date. Questions were multiple choice or multiple select (if appropriate), free-form text response, or included a rating scale that could be moved to the desired level (e.g., Q18, Q19). Maximum word limits for the free-form text responses, if present, are noted. Q, question.

Science Writing Internship Program Post-Internship Survey (Survey B)

Q1. How did completing the Science Writing Internship program impact your overall expertise in science communication?

- It had little or negligible effect on my expertise
- It slightly increased my expertise
- It moderately increased by expertise
- It greatly increased my expertise

Q2. How did completing the Science Writing Internship program impact your overall knowledge of science communication?

- It had little or negligible effect on my knowledge
- It slightly increased my knowledge
- It moderately increased by knowledge
- It greatly increased my knowledge

Q3. How did completing the Science Writing Internship program impact your knowledge of research conducted in the field of science communication?

- It had little or negligible effect on my knowledge
- It slightly increased my knowledge
- It moderately increased by knowledge
- It greatly increased my knowledge

Q4. How did completing the Science Writing Internship program impact your practical science communication skills?

- It had little or negligible effect on my skills
- It slightly increased my skills
- It moderately increased by skills
- It greatly increased my skills

Q5. Did completing the program affect how likely you are to pursue formal training in science communication in the future?

- Yes – I am now more likely to pursue training
- Yes – I am now less likely to pursue training
- No

Q6. After completing the Science Writing Internship, do you feel more knowledgeable about any of the following science communication activities? Check all that apply.

- Countering science-related misinformation
- Science journalism, science blogging, or science writing for the public
- Presenting my research to the public
- Communicating my research to journalists
- Communicating with policymakers
- Outreach to youth
- Outreach to under-represented or disadvantaged groups

Q7. After completing the Science Writing Internship, do you feel more confident in any of the following science communication activities? Check all that apply.

- Countering science-related misinformation
- Science journalism, science blogging, or science writing for the public
- Presenting my research to the public
- Communicating my research to journalists
- Communicating with policymakers
- Outreach to youth
- Outreach to under-represented or disadvantaged groups

Q8. After completing the Science Writing Internship, have you gained or improved skills that you would use in any of the following science communication activities? Check all that apply.

- Countering science-related misinformation
- Science journalism, science blogging, or science writing for the public
- Presenting my research to the public
- Communicating my research to journalists
- Communicating with policymakers
- Outreach to youth
- Outreach to under-represented or disadvantaged groups

Q9. Since completing the Science Writing Internship, have you engaged in any of the following science communication activities? Check all that apply.

- Countering science-related misinformation
- Science journalism, science blogging, or science writing for the public
- Presenting my research to the public
- Communicating my research to journalists
- Communicating with policymakers
- Outreach to youth
- Outreach to under-represented or disadvantaged groups

Q10. Has completing the Science Writing Internship impacted how comfortable you are in approaching a popular media outlet to pitch an article or op-ed for publication in the popular press?

- Yes – I am now more comfortable
- Yes – I am now less comfortable
- No

Q11. Since you've completed the Science Writing Internship, have you written for or approached a popular media outlet to pitch an article or op-ed for publication in the popular press?

- Yes
- No
- Not sure *[Text box provided for clarifying details]*

Q12. If you answered "No," in the above question, did completion of the Science Writing Internship impact how likely you are to approach a popular media outlet to pitch an article or op-ed for publication in the popular press?

- Yes – I am now more likely to approach an outlet
- Yes – I am now less likely to approach an outlet
- No

Q13. Has completing the Science Writing Internship impacted your knowledge of how to approach a popular media outlet to pitch an article or op-ed for publication in the popular press?

- Yes – I am now more knowledgeable
- Yes – I am now less knowledgeable
- No

Q14. Has completing the Science Writing Internship impacted your skills related to approaching a popular media outlet to pitch an article or op-ed for publication in the popular press?

- Yes – it greatly increased my skills
- Yes – it moderately increased my skills
- No

Q15. Since the completion of the Science Writing Internship, have you had any science writing work published? If so, provide links! *[Free-form text response]*

Q16. Since the completion of the Science Writing Internship, have you completed any science communication activities that would not be considered science writing? If so, provide details! *[Free-form text response]*

Q17. Since the completion of the Science Writing Internship, do you read more articles on science-related blogs, columns, or other science writing outlets?

- Yes, I read slightly more
- Yes, I read substantially more
- No, I read less
- No, my reading habits have not changed

Q18. How interesting did you find each of the modules? Rate each module on a scale where 1=not at all interesting and 5= extremely interesting.

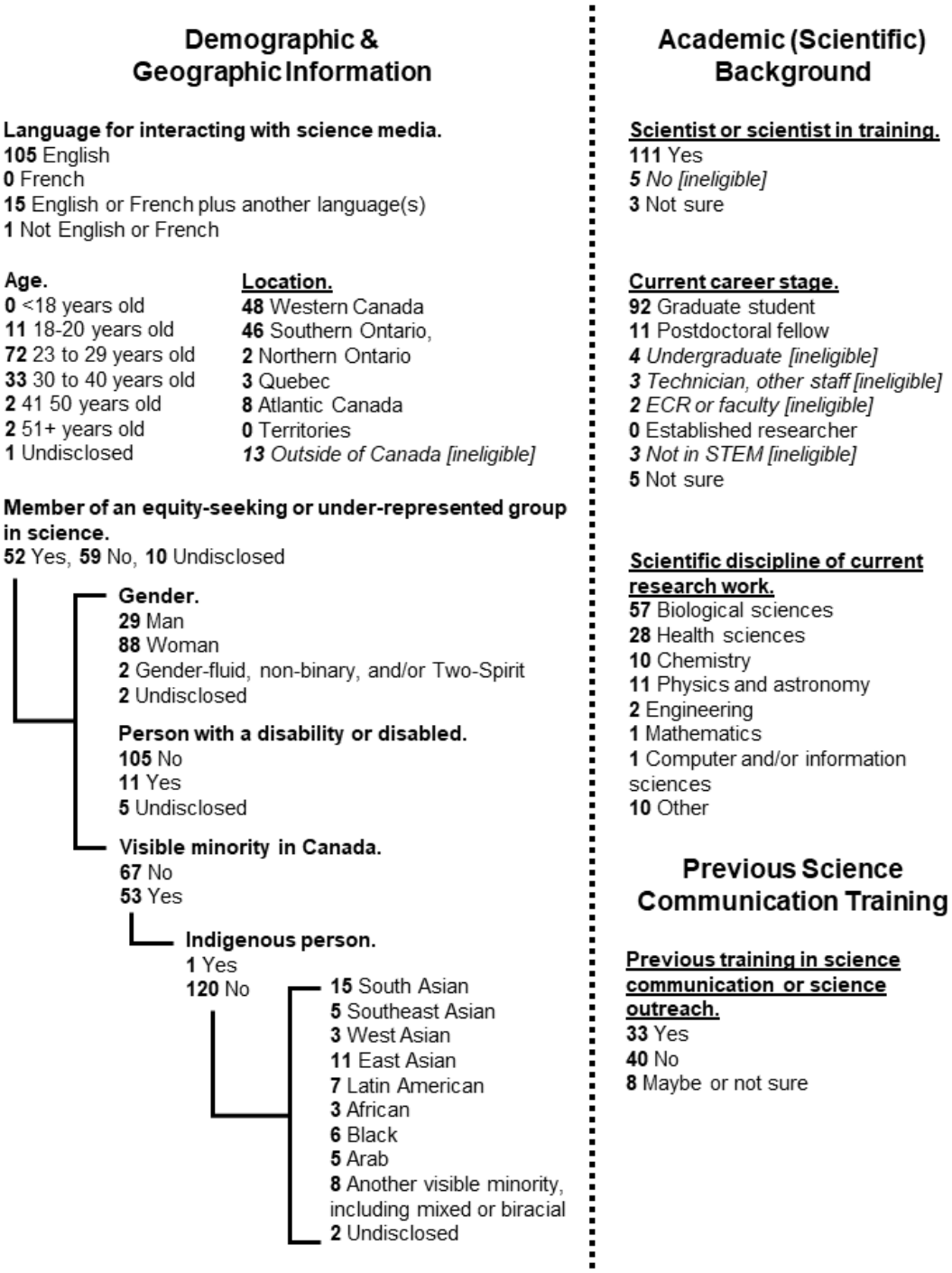
- Basic science communication skills ("Scicomm 101")
- Introduction to science blogging
- Equity, diversity, and inclusion in science communication
- Misinformation and science communication in the Post-Truth Era
- Pitching, journalism, and publishing in the popular press
- Careers in science communication

Q19. How useful or applicable did you find each module to the science communication activities you've engaged or plan to engage in since the completion of the program? Rate each module on a scale where 1=not at all useful or applicable and 5= extremely useful or applicable.

- Basic science communication skills ("Scicomm 101")
- Introduction to science blogging
- Equity, diversity, and inclusion in science communication
- Misinformation and science communication in the Post-Truth Era
- Pitching, journalism, and publishing in the popular press
- Careers in science communication

Q20. Were there any gaps or areas you recommend should be emphasised in a future iteration of the Science Writing Internship? *[Free-form text response]*

Figure S4 – Summary of demographics and other characteristics of program applicants who consented to participate in research. 177 of 195 total applicants consented to participate in research. Answers that deemed an applicant ineligible for admission to the program are noted ("ineligible"). Aside from answers to the free-form text responses questions (see Q10 to Q14 on Fig. S1), only information originating from the program application form (distinguished <u>underlined text</u>) was used in the assessment of applicants for entry into the program. ECR, early career researcher.



UNABRIDGED METHODS

Program Goals and Design

The goals of the Science Writing Program (SWP, referred to as "Science Writing Internship Program" in the surveys and program materials) were to (i) educate STEM trainees on how to effectively communicate with non-expert audiences, focusing on developing participants' knowledge, practical skills, and confidence in science writing and science journalism, (ii) create a free online resource of good science communication practices, and (iii) build an online community (network) for graduate and postdoctoral fellows. In completing these goals, we also sought to (iv) create a program that was equitable, diverse, inclusive, and accessible based upon the principles of universal design for learning (CAST, 2024; Meyer et al., 2014). As program facilitators, we (the authors) decided to focus on science writing in this program as it fell within our specific expertise, to narrow the scope of the skills being addressed, and because science writing is arguably one of the more accessible types of science communication for academics. We focused on trainees as they are often highly engaged in science communication, are eager to develop new skills and invest time in training, and are often early in their careers, so training is more likely to pay dividends over the long term.

The SWP was designed so that participants with diverse experiences in science communication would benefit from its completion (a choice that synergized well with the diversity of previous experience in our final cohort, see below). We approached the SWP like a condensed, remote undergraduate course with 2-3 hours of direct instruction and interaction per week ("workshop sessions") supplemented by occasional "homework" such as writing and editing blog posts or correcting transcriptions. SWP was offered at no cost to the participants, and participants were not compensated for their participation.

The SWP was organized into six weekly modules (**Fig. 1**), each highlighting a different fundamental or advanced science communication topic ("Science Communication 101",

"Introduction to Science Blogging, "Equity, Diversity, and Inclusion in Science Communication," "Misinformation in the Post-Truth Era," "Pitching, Journalism, and Publishing in the Popular Press," and "Careers in Science Communication"). Therefore, one third of program content specifically targeted science writing, science blogging, and science journalism related topics. The range and order of topics were selected based upon a combination of (i) providing a broad base of instruction for participants, who ranged considerably in their science communication experience (e.g., "Science Communication 101"), (ii) facilitator and potential workshop leader strengths in specific subareas of science communication (e.g., "Introduction to Science Blogging," "Pitching, Journalism, and Publishing in the Popular Press"), (iii) logistics (e.g., participants completed "Introduction to Science Blogging" before they completed their first blog post, which was evaluated by facilitators), and (iv) inclusion of topics that facilitators felt were especially timely and relevant to STEM trainees (e.g., "Misinformation in the Post-Truth Era," "Careers in Science Communication," "EDI in Science Communication").

Workshop Leader Recruitment

Each module was led by one workshop leader and/or up to three panelists, who were recruited based upon prior interactions with the program facilitators (the authors), workshop leaders, or their presence in science communication spaces (e.g., social media). In some cases, potential speakers were identified based on pre-selected module topics whereas in other cases the module of the workshop was tailored to what a particular speaker had to offer. In the case of the "EDI in Science Communication" session, the workshop leader was responsible for identifying and recruiting the panelists for that module.

Potential leaders were informally ranked based upon expertise in the general topic area as well as their availability. We also considered the workshop leader roster such that it adequately reflected the diversity of identities, careers, and experiences in the science communication field. The top-ranked leader for each session was invited to participate with a tailored email including information about the program goals, focus on EDI in the program, session format and

logistics, compensation, and intellectual property. Workshop leaders were asked to provide a short biography but were otherwise left to design their session and materials as they saw fit within the parameters provided by the program facilitators.

Participant Recruitment

Eligible participants

Any graduate student or postdoctoral fellow (referred to collectively as "trainees") based in Canada and currently working in a STEM discipline was eligible to apply to the program. For the purposes of this program, we extended the definition of STEM to include health and nutrition sciences and the social sciences in addition to the traditional science, technology, engineering, and mathematics fields, as we felt that these trainees were equally likely to seek out and benefit from science communication training.

Advertisement

As participants could be based at any institution in Canada that supported graduate-level research, the facilitators recruited widely through a combination of social media posts, direct emails to entities in contact with potential participants (scientific societies, academic departments, colleagues, etc.), and raising awareness during invited talks, conference presentations, and interactions with colleagues during the application period. Recruitment efforts directed potential participants to an online application form (see **Fig. S1** for the application form) hosted on Qualtrics software through Wilfrid Laurier University.

Application Evaluation

A total of 195 applications were received for the program, which had a pre-determined maximum enrollment of 30 participants based upon facilitator availability and resources. As

part of the application process, applicants were asked if they consented to participate in two research studies, including the one described in this publication to evaluate the effectiveness of the SWP. Consent to participation in the studies was not required for admission into or participation in the program, and an individual applicant's consent status was unknown to program facilitators until the end of the program. A total of 177 applicants agreed to participate in the study, of which 121 applications were deemed complete on or before the submission deadline of May 25th, 2021.

The 121 complete applications were collaboratively assessed by the two workshop facilitators, during which the facilitators were blinded to applicant names, email addresses, and social media handles (as an equity measure to exclude any potential familiarity bias) to determine if the applicants were eligible to participate in the program. Initial assessment focused upon whether the applicant met the minimum criteria for participation: graduate student or postdoctoral fellow, based at an institution in Canada (but not necessarily a citizen or permanent resident of Canada), and working in STEM or a related discipline (see **Fig. S4** for a breakdown of applicant pool characteristics).

As the number of eligible applications far exceeded the number of available positions in the program, it was necessary to complete a secondary assessment of all applicants deemed eligible for entry into the program. Secondary assessment focused on the applicants' description of their interest in science communication, how participation in the program would benefit them, and what skills they were most interested in developing (**Fig. S1**, questions 12 to 14). Applicants displaying a high level of general interest, enthusiasm, and consideration about science communication, and especially those with plans to incorporate science communication into their future training, career, or research activities, were informally rated higher than those who did not. Applicants specifically interested in popular science writing and related subfields were also rated highly. After independently reviewing the applications, the facilitators choose the final cohort based upon consensus reached after an informal, collaborative discussion. Applicants who identified their main interest as improving their *scientific* writing skills (e.g.,

manuscript and grant writing, crafting journal cover letters) were excluded from consideration as they would not be served adequately by the program.

Following secondary assessment, the facilitators confirmed that the selected cohort of participants had a level of geographical, institutional, and disciplinarily diversity that was reasonably reflective of the applicant pool (**Fig. S4**), and that any special circumstances shared by applicants had received appropriate consideration, especially for applicants near the informal "cut off" for program admission. Based upon applicant responses (**Fig. S1**, questions 8 to 11), we also confirmed that the cohort contained a mix of beginner and intermediate levels of science communication experience, which we hoped would benefit the peer-to-peer learning and peer editing aspects of the SWP.

Participants onboarding

The final cohort of 30 participants included 25 graduate students and 5 postdoctoral fellows, of which 28 had consented to participate in the study evaluating the success of the program. Applicants accepted into the program were informed of their status by email approximately one week before the first workshop session, and all successful applicants formally confirmed their participation in the program. As part of the onboarding process, applicants were asked to flag any potential accessibility needs or technological issues for program facilitators so that these issues could be proactively resolved.

Science Writing Program

Program Format

Due to the ongoing disruption of the COVID-19 pandemic, as well as the expected geographical diversity of the final cohort, the program was designed for and delivered in a remote format using synchronous video communication and messaging software (Zoom Video

Communications, Inc., San Jose, California). Communication between participants and the facilitators was through a combination of email, a cloud-based Slack group (Slack Technologies, Vancouver, British Columbia), and a combination of verbal dialogue and text chat during workshop sessions.

Workshop sessions (synchronous)

Typically, workshop leaders used a combination of prepared slides and facilitated discussion sessions, though some incorporated small group exercises using online tools such as breakout rooms. Two sessions, “Equity, Diversity, and Inclusion in Science Communication” and “Careers in Science Communication” were structured as multi-expert panels and extended to three hours in length to allow for more time for discussion and interaction between panelists and participants. On a case-by-case basis and with the consent of the workshop leader, a portion of some workshop sessions (typically a ~1 hour seminar) were open to the public and advertised on social media. General public attendance to workshop sessions was generally low and had little to no impact on the sessions. Following the conclusion of each workshop session, several materials were made available to participants for future reference behind a password-protected section of the program website, including copies of slides (if provided by the workshop leader), a recording of the session (accessed via an unlisted *YouTube* video), and notes plus corrected transcripts contributed by volunteer participants.

Blog posts (asynchronous)

As a way of developing participants’ practical science communication skills, participants wrote and revised two blog posts, each with slightly different instructions and criteria, at key points in the program. They also peer-edited two additional blog posts written by other participants. For Blog Post #1, submitted after the “Introduction to Science Blogging” session, participants were instructed to write a ~750-word post for a Canadian high school student with a grade 9 education about their research or a recent peer-reviewed scientific paper. Participants were

provided with extensive feedback by the program facilitators within ~1 week of submission and asked to submit revised versions that incorporated this feedback for publication on the Science Writing Program website. Common feedback included altering the order of paragraphs to follow a more popular science/science news type structure, using a more casual and approachable authorial voice, and limiting the use of technical jargon. Revised blog posts underwent a round of production editing by a program facilitator (writing a headline, securing an open access header image, formatting, typo correction, etc.) before being posted on the public section of the program website. Blog posts were publicized on social media by program facilitators, and participants were encouraged to share their posts widely.

The criteria for Blog Post #2, submitted ~2.5 weeks after the final synchronous workshop session, were more flexible and only specified that participants target a "general public" audience. Unlike the first blog post, participants engaged in peer-editing with each participant providing feedback for two others in the cohort. In a small minority of cases (i.e., due to delayed completion of their first draft or lack of response from the peer-editor), one of the facilitators stepped in as a peer editor to ensure all participants received prompt feedback from two sources. Revised blog posts were published on the program website as described above.

Blog posts were maintained on the program website until April 2023 (except for one case of early removal as requested by a participant), and their performance was monitored using analytics built into the website hosting platform. After this period, the science writing program website was removed from public access to avoid identifying the participants during the publication of survey results.

Transcripts and notetaking (asynchronous)

Finally, all participants were assigned notetaking and transcript correction duties for at least one workshop session each to (i) practice these skills, which are important in science journalism, (ii) ensure all participants could fully benefit from synchronous sessions, including

participants who were unable to attend due to other commitments, (iii) add to the online resource base associated with the program. Participants signed up for their session of choice and were free to delegate tasks within their group as they saw fit, with the general expectation that these tasks would be completed within one week of the session. These materials were uploaded to the password-protected area of the program website by program facilitators for future reference.

Program Evaluation

Participants who consented to participation in the evaluation of the program for research purposes were asked to complete two surveys (**Fig. 1, Fig. S1-S3**). The pre-program survey (Survey A) (**Fig. S2**) was attached to the application form and assessed participant's pre-program (baseline) experience in science communication, including science writing and journalism, as well as their general knowledge of and skills in science communication as well as their confidence in conducting science communication activities. The post-program survey (Survey B) (**Fig. S3**), focused on participants' self-assessment of the effect of participation in the program on these topics.

Survey response rates were 96.7% for the pre-program survey (N=29) and 93.3% (N=28) for the post-program survey. Some individual questions (all questions were optional) had as few as N=14 responses, particularly in the post-program survey, which we accounted for in reporting the percent of participants who selected answers to individual questions. To preserve subject anonymity given the small sample size of participants (N=30 participants in the program), we report the survey data only in aggregate. Data are presented and analyzed during standard functions in GraphPad Prism (La Jolla, CA).

Table S1: Science Writing Program blog post analytics. Shares, cross-posting on the blog post on social media sites such as Facebook, Twitter, etc., using a built-in function (widget) from the website hosting service. Date, publication date of the blog post. Pub., Publication.

No.	Title	Pub. Date	Word count	Post views	Unique Visitors	Shares
1	Speedy calcium to the rescue for plants	Jul 20	600	118	80	3
2	Researchers make honeycomb-shaped bubbles	Jul 21	533	45	31	5
3	Basic science is far from basic	Jul 22	852	53	45	0
4	How does radiation therapy work?	Jul 23	654	13	11	0
5	The stem cells inside your esophagus	Jul 26	559	52	37	0
6	When there is a gap in the eye	Jul 27	809	23	20	1
7	Are small plastic particles a big problem for zebrafish?	Jul 28	577	33	19	0
8	Microbes gone wild	Jul 29	697	10	8	2
9	MDMA: From controlled substance to potential PTSD treatment	Jul 30	675	37	26	1
10	What happens when you mess with your body's internal clock	Aug 02	721	28	19	2
11	Making good bacteria for food	Aug 03	584	93	63	1
12	When the going gets tough eels get going...backwards	Aug 04	701	24	22	1
13	Should pregnant women use Tylenol? It's complicated	Aug 05	438	11	10	1
14	How studying fish blood may save lives at high altitude	Aug 06	745	25	23	1
15	What we can learn about sleep disorders from worms	Aug 09	600	15	11	1
16	Can bidirectional contact tracing catch more COVID-19 cases?	Aug 10	646	17	13	1
17	The pandemic lockdown got us salty	Aug 11	650	52	42	3
18	Studying phosphate-starved plants to improve crops	Aug 12	710	50	36	1
19	Why we need more dead trees	Aug 13	605	24	17	2
20	Science is political and we need to acknowledge it	Aug 16	885	43	28	1
21	Understanding spinal cord injury using advanced MRI scans	Aug 17	794	1	13	1
22	Tricky ways viruses become more dangerous	Aug 18	634	80	27	1
23	Could the powerhouse of the cell be a fountain of youth?	Aug 20	667	24	17	1
24	Can a new fishway save imperiled sockeye salmon migrating up the Fraser River?	Aug 23	509	5	4	1
25	Microbes that clean statues and eat plastic	Aug 24	387	14	13	1
26	Recognizing the importance of traditional ecological knowledge	Aug 25	739	17	14	1
27	Sex testing of elite woman athletes is flawed and arbitrary	Aug 26	1049	32	25	1
28	Face masks may be the new plastic straws for our oceans	Aug 27	607	13	10	1
29	COVID-19 terminology 101 [Infographic]	Aug 30	N/a	101	87	1

30	The flourishing effects of houseplants on our health during the pandemic	Aug 31	814	42	30	2
31	Over 200 years of research and we're still not sure if viruses are alive	Sep 01	626	24	15	3
32	Online groceries make healthier eating just a click away	Sep 02	674	8	6	1
33	Increasing diversity in the biotech graduate program of Poznan University of Life Sciences	Sep 03	953	58	43	2
34	A call for the Indigenization of higher education in Canada	Sep 06	434	23	22	1
35	Vaccine shedding doesn't cause infertility	Sep 07	420	33	32	0
36	How to talk with the public about animal research	Sep 08	916	15	9	1
37	The portable mini MRIs on wheels widening access to MRI	Sep 08	682	32	28	1
38	Amazing ways insects survive without water	Sep 09	662	35	22	1
39	Cruelty-free Peace silk from an incredible aquatic insect	Sep 10	851	38	25	1
	Average of all blog posts +/- sem	**-----**	**675 ± 24**	**47 ± 9**	**34 ± 7**	**1.2 ± 0.2**