

Facilitating Science Communication in the College of the Environment
- Report from the College of the Environment Science Communication Task Force

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Executive Summary

Increasing the transparency and collaborative potential of the process and the results of science –science communication– is a core objective of the College of the Environment’s Strategic Direction. The *Science Communication Task Force* (SCTF) was charged with advising the Dean’s Office about pathways to support CoEnv scientists – students, staff and faculty – in strategically and effectively sharing their work with other scientists, policy-makers, tribes, education organizations, supporters and donors, resource managers, the media, and the public.

There is a strong consensus among SCTF members that the support, promotion and advancement of science communication in CoEnv are critical for the success of the College, and for a sustainable future. While the SCTF realizes that there are myriad demands on faculty time and that funding for new initiatives is limited, investments in science communication will present a return on investments in both the career success of individual scientists and finding solutions to pressing environmental challenges. The SCTF therefore recommends substantial investment be made in both effort and funding to promote science communication at the College level.

The SCTF strongly recommends the following actions:

- Develop a web portal and network for researchers within UW to advance and share science communication efforts, expertise, tools and technologies, so to increase researchers’ capacity for science communication
- Work with faculty and departmental leadership to change promotion and tenure criteria to incentivize science communication
- Provide science communication training for faculty and students

Other recommendations include:

- Develop standards to quantify and evaluate science communication outputs and outcomes.
- Provide opportunities, resources, and rewards for autonomous science communication efforts

This report provides details about how the SCTF arrived at their recommendations, further ideas to help advance science communication in CoEnv, and an examination of the feasibility of the recommendations.

Background

Science informs solutions to pressing issues that we face as individuals, communities, and as a planet. As a result, making scientific data and concepts accessible through effective science communication is increasingly important. As a public institution, the College of the Environment (CoEnv) has the responsibility to share research with society, in order to fuel discovery, inform management practices, promote the role of science in public discourse, decision-making and environmental stewardship, and accelerate solutions to some of our most pressing environmental issues (Lubchenco, 1998; Groffman et al., 2010). In particular, there is an increasing call for more collaborative production (co-production) of both scientific results and research questions, rather than just one-way dissemination of science from academic institutions. The opportunity for CoEnv to increase the transparency and collaborative potential of the process and the results of science – termed science communication in this report – is a strategic step in fulfilling its vision as a leader in both science and academia.

CoEnv is committed to promoting and facilitating science communication. Our Strategic Direction highlights this objective, and outlines the following associated priorities:

- Establish the College's reputation as a reliable and relevant resource for environmental decision-making
- Engage with diverse communities to gain insight into societal constraints, traditional knowledge, and perspectives that inform our understanding of environmental issues.
- Deepen partnerships with government, industry, non-profit organizations, and media
- Use strategies that work across the communication spectrum, via contemporary and traditional media

The *Science Communication Task Force* (SCTF) was charged with advising the Dean's Office about pathways to support CoEnv scientists – students, staff and faculty – in accomplishing these goals, through strategically and effectively sharing their work with other scientists, policy-makers, tribes, education organizations, supporters and donors, resource managers, the media, and the public.

Assessment Methodology

Initiated in February 2012, the SCTF met throughout the spring, summer and fall in a series of workshops. The SCTF took a broad view of the ways in which people choose to engage in science communication throughout CoEnv, and brainstormed ways in which the Dean's Office can encourage, catalyze, support, improve and reward science communication efforts. The SCTF then identified and prioritized concrete and feasible steps the Dean's Office can take to support, facilitate and reward science communication across CoEnv, in line with its strategic direction. These steps considered the following *guiding principles*:

- 1) There are varied and diverse modes of communication, and varied motivations and values around these efforts; seek to encompass the greatest diversity of motivations and deliverables that exists at UW.
- 2) The most effective science communication involves two-way interaction—listening to and incorporating the needs and interests of partners and the public into our research as well as sharing its process and results.
- 3) Integration of science communication into the culture of CoEnv will be more effective in the long-term than tacking it onto research and education efforts.

- 4) Key resources include existing science communication efforts, which can be leveraged, valued and amplified, including through new or existing social networks.
- 5) Given the cultural ramifications of integrating science communication into CoEnv, careful consideration of incentives will help effect change.
- 6) Metrics need to be developed and considered to measure output and outcomes and success of science communication efforts.
- 7) Costs and benefits should be considered for each recommendation; prioritization given current and future constraints will maximize effectiveness.

The SCTF saw the achievement of CoEnv's science communication goals as dependent on addressing three related objectives:

(A) Provide strategic opportunities for science communication

Effective scientists must be able to connect with others, both within different scientific disciplines and outside of academia altogether, who are working on or interested in similar issues but may be looking through a different lens. Researchers need strategic opportunities to engage with other scientists, university units, business leaders, government officials and policy-makers, the media, NGOs, the public, and other partners.

(B) Enhance access to training and toolsets

Scientists rarely receive formal training in how to make one's science transparent and accessible, nor to work outside of a narrow discipline within academia. More scientists are expressing a desire to do this, but they need skills and tools to effectively engage with others in the concentric circles of audiences that surround their field of work.

(C) Firmly embed scientific communication as a characteristic of CoEnv

The CoEnv Dean's Office can provide opportunities and tools for researchers to engage in science communication, yet there have to be incentives for scientists to participate in this non-traditional academic realm. Some will engage in science communication regardless, and some will never engage – but there are those in the middle who will do so provided the career benefits outweigh the costs.

To arrive at recommendations, the SCTF undertook the following actions:

- Considered the range of possible activities each objective might comprise (Appendix 1).
- Offered insights about how the Dean's Office could provide, support or reward such activities in order to achieve the objective (Appendix 2).
- Made note of the existing efforts currently taking place in CoEnv (Appendix 3).

Each of the three objectives was considered with respect to both support of existing initiatives and development of new efforts, and with respect to the identified guiding principles.

Recommendations for Advancing Science Communication in CoEnv

There is a strong consensus among SCTF members that the support, promotion and advancement of science communication in CoEnv are critical for the success of the College, and for a sustainable future. While the SCTF realizes that there are numerous demands on faculty time and that funding for new initiatives is limited, investments in science communication will present a return on investments in the career success of individual scientists and finding solutions to pressing environmental challenges. The SCTF therefore recommends substantial investment be made in both effort and funding to promote science communications at the College level.

The SCTF recommends the following actions for advancing science communication and outreach, and open science more broadly, across the College of the Environment. Each of these recommendations is strongly encouraged; a further analysis on feasibility is included in Appendix 4. The most highly prioritized recommendations involved creating a culture promoting science communication within CoEnv (see Appendix 4 for more details). Each recommendation is also assigned a relative feasibility and an estimated start year. The SCTF envisions that, given resource allocation, most of the recommendations could be undertaken and successfully completed within 3-5 years.

(A) Opportunities

1. Network and guides for coaching / expertise / tools / technologies

- FEASIBILITY: EASY/MODERATE, START YEAR: 2013
This recommendation is exemplified by the following:
 - Facilitate integration with “bridge” entities (e.g., Sea Grant)
 - Examples and tips for NSF broader impacts statements
 - Capitalize on mobile technologies for science communication, outreach and engagement, e.g. smartphone apps for citizen science projects
 - List of local media and CoEnv-relevant Internet contacts for press releases
 - Invite submissions to blog, newsletter, etc.

2. Online portal exemplifying, amplifying, connecting, & catalyzing efforts

- FEASIBILITY: EASY/MODERATE, START YEAR: 2013
This recommendation is exemplified by the following:
 - Collect and connect existing projects and opportunities, within and beyond CoEnv
 - Popular science writing, videos, citizen science, crowdfunding projects, text books, offline events and efforts
 - Press releases
 - Showcase effective examples of science communication
 - Amplify & add value to unit-level outreach and communication efforts, and track best practices
 - Searchable archive of open-access publications
 - Create space(s) where the public can approach and interact with researchers, for scientific or topic-specific dialogue

(B) Tools and Training

3. Provide faculty science communication training

- FEASIBILITY: DIFFICULT, START YEAR: 2014-2015
This recommendation is exemplified by the following:

- Provide a summer institute on science communication training
- Provide communication workshop add-on at locally held professional meetings
- Provide one-on-one writing or editing support
- One-on-one coaching or consulting for skilled needs like video editing or web-design

4. Provide science communication training for students

- FEASIBILITY: DIFFICULT, START YEAR: 2014-2015
This recommendation is exemplified by the following:
 - Science communication seminar, classes, or curriculum for students
 - CoEnv graduate fellowship for science communication
 - Provide communication workshop add-on at locally held professional meetings
 - Provide one-on-one writing or editing support
 - One-on-one coaching or consulting for skilled needs like video editing or web-design

(C) Cultural Embedment

5. Provide top-down incentives

- FEASIBILITY: DIFFICULT, START YEAR: 2013-2015
This recommendation is exemplified by the following:
 - Change promotion and tenure requirements to include science communication and outreach
 - Develop ways to quantify science communication impacts
 - Output
 - Outcomes
 - Endorse open data, open research processes, open access publication

6. Provide resources, rewards, or incentives for autonomous efforts

- FEASIBILITY: MODERATE, START YEAR: 2014
This recommendation is exemplified by the following:
 - Specific short-term/smaller-scale science communication goals requiring measurement of impact
 - Best photograph, video, visualization or explanation; award of a “cool science thing”
 - Solutions-based prize, with communication, interdisciplinarity requirements
 - Financial support for new or ongoing science communication projects, including programming or design work
 - Add CoEnv funding or other resources to already landed fellowships
 - CoEnv funding to match or “top up” projects seeking crowdfunding

The SCTF also considered the process by which these recommendations, and the overall goals, will be achieved. Members suggest the following guidelines as the Dean’s Office moves forward:

- During the rollout of recommendations to broader audiences, a qualitative explanation of the ways in which science communication *can promote success*, for both faculty and students, should be provided.
- A *network map* of science communicators across CoEnv and across campus will help clarify and connect communication efforts.

- A rollout of recommendations might include “*key informant interviews*”, across CoEnv and then across UW, which would bring additional perspectives from people identified to be interested or engaged in similar efforts.

Literature Cited

- Groffman, P.M., Stylinski, C., Nisbet, M.C., Duarte, C.M., Jordan, R., Burgin, A., Previtali, M.A., Coloso, J. 2010. Restarting the conversation: Challenges at the interface between ecology and society. *Frontiers in Ecology and the Environment* 8, 284-291.
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