Confronting Institutional Barriers in Science Communication and Policy

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AAAS 2013, Boston, Special Session “The Beauty and Benefits of Escaping the Ivory Tower” - http://stanford.io/21XcZQg
Today’s discussion

- Origins of the Ivory Tower and the evolving University landscape
- Obstacles and opportunities in engaging: Experience from Leopold Fellows
- Overcome barriers: Discussion and advice to early-career scientists
What institutional barriers?

• Institutions often fail to value engagement in science and policy
• Pre-tenured faculty may face institutional barriers in making science relevant to society
• Culture is slowly changing within institutions
  – academic success is still largely measured by publications and grants
Origins of the ivory tower

• **Ivory** = noble but impractical building material
• **Tower** = intellectual isolation
• Academics are intentionally disconnected from practical application
• Specialists can't communicate to non-specialists
Escaping the ivory tower

• Historical cultural divide
  – Agencies vs. academia; profession vs. discipline
  – Land grant universities and extension programs

• Envisioning the modern University
  – Incentives and rewards
  – Solution-oriented research
Leopold fellows: Collective experience

• Leopold program trains academics to overcome barriers

• We surveyed fellows on experiences in science policy and outreach (n=42, ~175 fellows)
  – 97% respondents mid-career, tenured academics; 85% at large State Universities

• 100% are committed to making science relevant
What motivates us as scientists?

- Discovering cool new scientific truths
- Advancing society’s understanding of nature
- Education and mentoring
- Independence, travel, fun
- Improved decision-making, making the world a better place
But...

• On average, fellows spend only 1 hour/month outside the ivory tower
  – This includes interactions with journalists, NGO’s, decision makers, social media and the public

• 63% report that they would engage more if they could
So why not engage?

There is a big psychological “cost” of doing something outside the norm. I feel pretty comfortable engaging, but it takes effort. It forces me to watch my words carefully. I need to read up on the latest news, research, or place-specific data. I may need to straighten up my office, or set up a good photo of the lab. This planning and general departure from the daily norm can make even a short interview very disruptive.

-anonymous Leopold Fellow
What are our common barriers?

- Not enough time (92%)
- Lack institutional support (42%)
- Don’t get credit for it (45%)
- Don’t feel comfortable (23%)
- Don’t know how (16%)
Common Barriers

“Building a professional network takes a lot of time (and a good memory)”

“My actual employer and colleagues do not think that engaging has any value”
How do we (currently) deal with these barriers?

- Push comfort zone
- Skimp on sleep, research, teaching
- Prioritize and respond promptly
- Promote interaction between physical, biological and social sciences

➤ Overcoming these barriers is a tall order for scientists
Change must come from Universities

• Reinvent how beans are counted
  – Incentivize science outcomes such that they have equal footing with publications and grant money

• Recognize multiple tracks and incentives
  – Outreach evaluation metrics

• Establish boundary organizations
  – Maintain office of science journalists
  – Develop public and policy versions of papers

• Provide time and training
  – Integrate outreach into teaching and research
  – Provide time to cultivate relationships
  – Training in science communication, new media, leadership
Reinventing how beans are counted

• Recognize efforts to communicate to non-specialists

• Include qualitative narratives in faculty activity reports

• Support multiple tracks
  – outreach as a form of scholarship
Institutional structure and incentives

• Develop quantitative metric of outreach impact
  • Partner with social scientists
  • Apply methods to evaluate impact of outreach
• Training programs for faculty
  • Cultivate solution-oriented thinking
Training future generations

• Graduate training in science communication, confronting the media, engaging in policy, strategic thinking
• Provide incentives to engage in K-12 outreach, new media, blogging, etc.
A ray of hope

45% of Leopold fellows report a change in the University landscape vis-à-vis engaging in communication over last 10 years
Discussion

• What challenges do you face in engaging?
• How do we overcome these barriers?
• What are some mechanisms to cultivate institutional support?
• Relevant metrics of societal impact of our science?

Thank you to the Leopold Fellows for contributing to our survey!

2011 Aldo Leopold Leadership Fellows
PNAS introduces new magazine section

PNAS becomes the most widely read journal in the basic sciences around the world, and its online editions are read over 34 million times each year. This journal has played a leading role in the development of the field that crosses traditional disciplines and that others believe hasn’t been properly studied or documented. The new section of the journal will focus on these innovative research areas and contribute to the scientific enterprise by advancing the public’s understanding of important topics. Whether you are a scientist, policy maker, or simply curious, this new section will provide new insights into the world around us.
Understanding incentives to change

• Do funding agencies determine University priorities?
  – Faculty members make up review panels
  – Agencies vary and most require broader impacts

• The role of scientific societies and journals
  – E.g., “PNAS has a special role in fulfilling the mission of the National Academy of Sciences not only by contributing to the research enterprise, but also by informing the public about science” – PNAS 10(7):2427
  – Recognition that solutions to complex problems emerge from applied-basic research nexus

• Other insights?