Incentives to Encourage Scientific Web Contribution

(or)

Engaging the Public... While Keeping Your Job

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The Problem:

Agencies want to accomplish better outreach and engagement with no funding.

Scientists sacrifice their personal time to contribute to web and social media sites.

Today's Intent: Tie 'engaging scientists to web communities' with the pragmatics of research and funding?

What is 'Outreach and Engagement'?:

* Science blogging * contributions to FAQs * Wikipedia editing * participating in science forums * podcasts * being a guest at a museum * participating in technical web communities * ... *

Any science web participation outside of your institution's direct EPO channels.

Premise 1:

Science outreach = science funding & next-gen STEM

Premise 2:

Science on the web: it's there, are we?

Premise 3:

Citations are the primary currency of the research world.

Perspectives:

Each 100 words of newspaper coverage = +1 citation over following 4 years (Kiernan, Sci Comm, 2003)

"It is absolutely the duty of any scientist who does their research with public funds" (Squyres, NASA Mars Rover, 2005)

The most active popularizers are also the most productive. (Jensen, Sci Pub Pol, 2008)

"You can privately ridicule scientists who do more successful self-promotion but they will set the agenda for the public if you do not." (Campbell, CAPJournal, 2008)
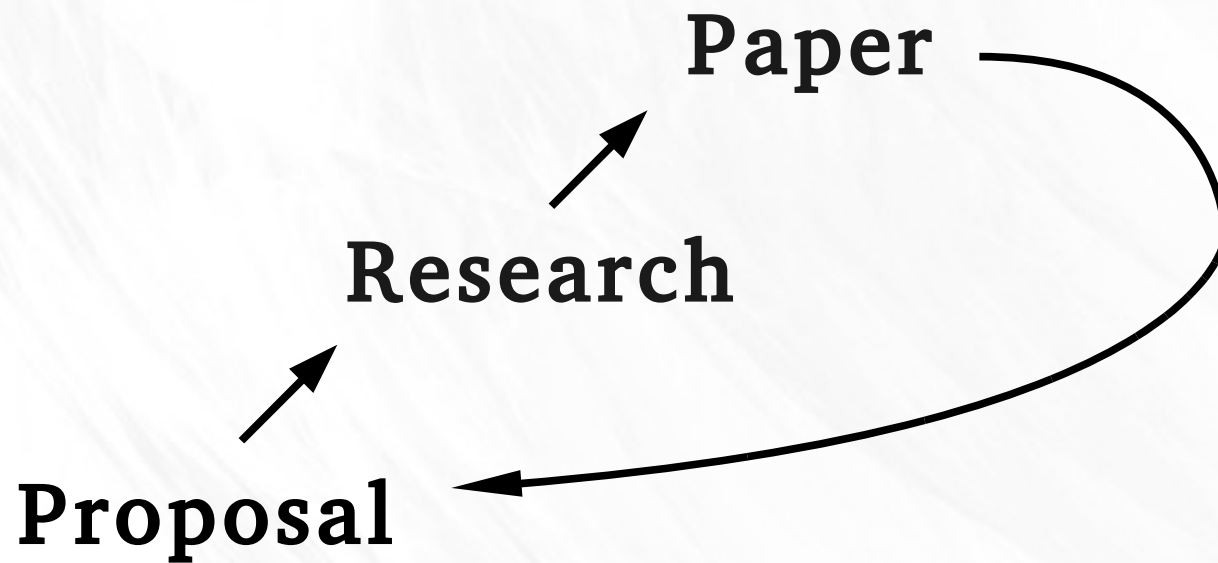
'Professors could rescue newspapers' (CSM, op ed, 2009)

Speaking to the media can advance one's career (Russo, Nature, 2010)
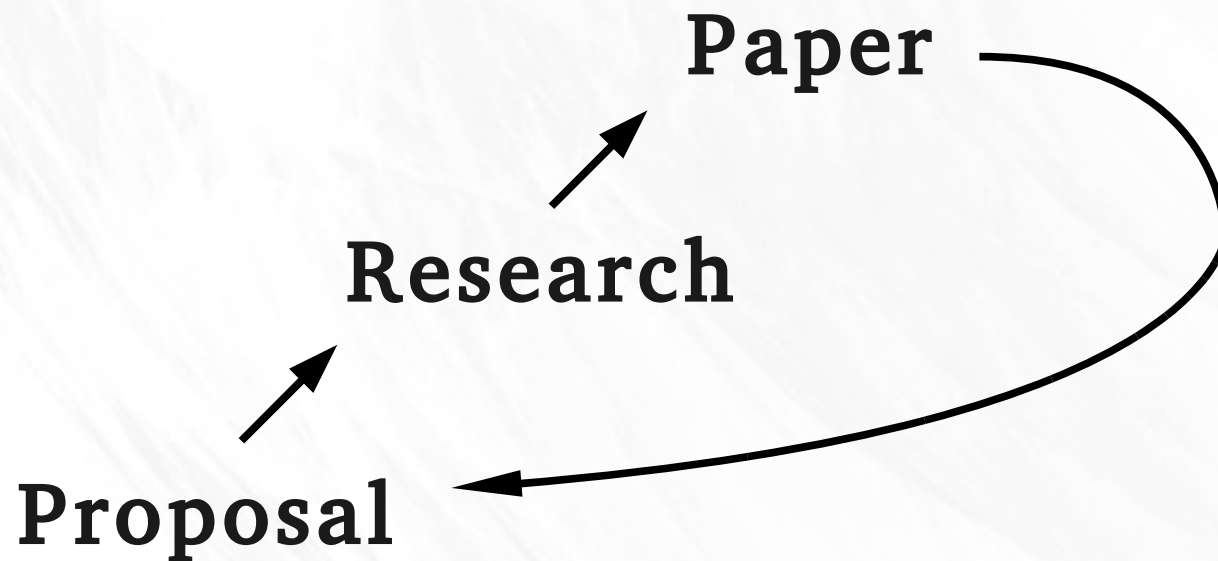
For a career scientist, which skills do you need?

Channel	Consume?	Create?
journal	√	√
email	√	√
web	√	
open science	√	
social media		
media/public		?

The Problem:

Paper

Research

Proposal

The Carnot Cycle of Research Work

If the public doesn't get their information from scientists, we're not part of the conversation that sets the agenda... so how do we fit that in?

Paper

Research

Proposal

The Carnot Cycle of Research Work

3 Paths

I) Wait until current generation dies and outreach is simply expected.

II) Game the system.

III) Bring about institutional change.

Path I) Patience
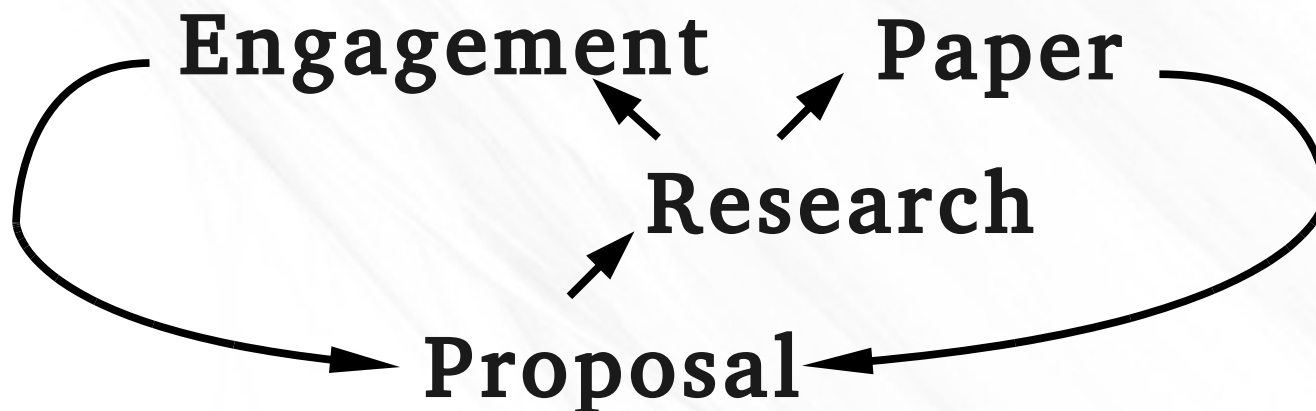
Historically sound: wait until the current generation of blogging post-docs become lab heads.

"Be the change you want"
"Take the hit for the team"
"Remember your ideals once you're a manager."
"[insert favorite cliche here]

Engagement   **Paper**

Research

Proposal

Path II: Game the System

Good news: outreach increases citation. Is it enough? No...

Solution: Create meta-content-- publish progress, notes, post-mortems to buff your authorship list.

Solution negated: CAPJournal != ApJ

Path III: Institutional Change

All about the metrics.

1) Citations
2) Audience size (hits, visits)
3) Institutional Media Value-- ability to get lab (not just you) into TV/radio/print

Engagement   Paper

Research

Proposal
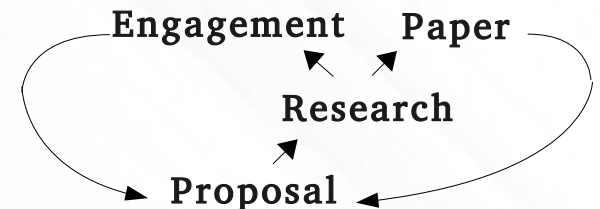
Timescale Case Study:
Rise of Open Access Journals

Pioneers like arXiv.org pre-print archive (1991) take **a decade** to set the concept, then...

Early adoption: 4-10 years of building
>   1998/1999: many open journals appear
>   2001: 'An Open Letter to Scientific Publishers' in Europe
>   2001: Nature surveyed 120K comp sci papers, free online = 1.5x citations
>   2002: famous case: Pointcare Conjecture published only as arXiv preprint
>   2003: efforts in US to mandate open access
>   2003: analysis of arXiv effect on ApJ: 2.5x citations

Acceptance: 2-4 years for local adoption
>   2006-2009: PLoS ONE goes from launch to largest open access journal
>   now: open citation equiv closed; quality of journal, not method is primary

Which stage are We now?

Engagement   Paper

Research

Proposal

Steps:

1) Need an accepted citation standard to encourage citation.
2) Give pro-outreach manager something to latch onto.
3) Reinforce with in-house metrics.
4) *Buy-in from a federal lab, fed agency, or large university.

Engagement   Paper

Research

Proposal
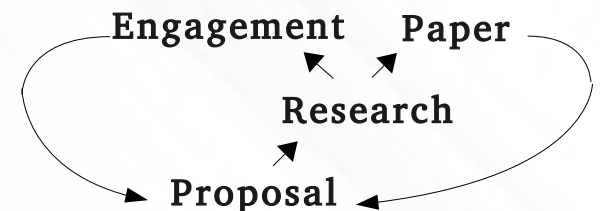
Citation (the easy part):

Example:

A. Antunes and K. Mukai, authors, "Bats on the Shuttle", *Imagine the Universe: Ask an Astrophysicist*, 24 Oct 1997,
http://imagine.gsfc.nasa.gov/docs/ask_astro/answers_971024a.html

- URL not needed in 'search' era? If you can't find it by search, it's not notable?

- Needs Bootstrapping: for outreach citations to become valuable, valuable people must use them.

If "*Researcher A* is seen as valuable" (by in-house metrics) and "*Researcher A* has much cited outreach", then "citable outreach will be seen as valid."

Engagement   Paper

Research

Proposal

Conclusions:

- Public engagement is necessary in a "big picture" sense.

- Careers are built on *Proposal->Research->Paper* cycle

- As a leader, support engagement.

- As an individual:

    1. get top cover from boss

    2. engage the public

    3. cite it, even if (for now) it's low impact.

- In 2-10 years, engagement will be part of the career cycle.

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