



Designing Tools for Serendipity

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Designing Tools for Serendipity

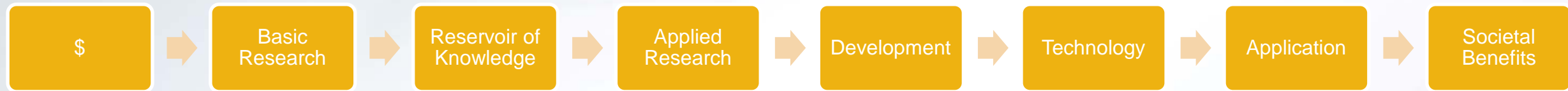
1. Brief professional autobiography
2. Peer review as a tool for accountability & autonomy
3. Designing tools for serendipity

Brief professional autobiography

- Professional training in the history of philosophy
- 100% teaching positions at GSU and Emory
- 100% research position at UNT
- Assistant Director, CSID (50/50 research/admin)
- Visiting Assistant Professor, Georgia Tech

The science-society relation

Linear Model



Peer Review

Pielke & Byerly (1998) “Beyond Basic and Applied”

Accountability in the science-society relation



Peer review – a tool designed for what?

NSF Merit Review Criteria (1997-2012)

- What is the intellectual merit of the proposed activity?
- What are the broader impacts of the proposed activity?



ELSEVIER

Technology in Society 27 (2005) 437–451

Technology
In Society

www.elsevier.com/locate/techsoc

Assessing the science–society relation: The case of the US National Science Foundation’s second merit review criterion

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MAKING SENSE OF THE “BROADER IMPACTS” OF SCIENCE AND TECHNOLOGY



General Research Lab, Rm 201
Colorado School of Mines
Golden, CO

August 5th - 7th

2007

UNIVERSITY OF
NORTH TEXAS



NEW DIRECTIONS



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PRELIMINARY REPORT

[CLICK HERE](#) FOR A PRELIMINARY REPORT FROM THE WORKSHOP (PDF OPENS in a new window).

WORKSHOP THEMES

THE NATIONAL SCIENCE FOUNDATION MERIT REVIEW PROCESS REQUIRES scientists to address the broader impacts as well as the intellectual merit of the research being proposed. The aim of this research workshop is to reflect on *why* (rather than *how*) scientists and engineers ought to address the broader impacts of their research.

- Why did NSF change its merit review criteria in the first place?
- How much freedom should the scientific and engineering community be granted to set the terms of its research?
- Why is "the integration of research and education" an important value scientists and engineers ought to uphold? What would such integration actually entail?
- Why should scientists and engineers seek to expand the participation of underrepresented groups?
- What are the links between science and politics?
- Why should scientists and engineers worry about the broader impacts of their research? Do scientists and engineers have a responsibility to pursue research directed toward pressing societal needs when their research is publicly funded?
- Is basic research in science and engineering value-neutral?

Volume 23 Numbers 3-4 July-December 2009

SOCIAL EPISTEMOLOGY

A Journal of Knowledge,
Culture and Policy

Volume 23 Numbers 3-4 July-December 2009

Special Issue: US National Science Foundation's Broader Impacts Criterion
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A Journal of Knowledge,
Culture and Policy

Special Issue

*US National Science Foundation's Broader
Impacts Criterion*

Guest Editor: J. Britt Holbrook

The **Comparative Assessment of Peer Review (CAPR)** was a four year project (2008 - 2012) that examined the peer review process at six science agencies worldwide: NSF, NIH, and NOAA in the United States, the Natural Sciences and Engineering Research Council of Canada (NSERC), the European Commission 7th Framework Programme, and the Dutch Technology Foundation (STW). Funded by the NSF [SciSIP](#) program, CAPR was a project of the Center for the Study of Interdisciplinarity at the University of North Texas.

- For our work on NSF's broader impact criterion, click [here](#).

Our research focuses on how different agencies integrate broader societal impacts issues into the peer review of grant proposals.

CAPR's products...[Read More](#)

What's New in Peer Review?

A Transformative Research Workshop was organized at NSF headquarters in Washington, DC, on March 08 & 09, 2012, by CSID. This...[Read More](#)

CSID co-organized a workshop for NSF-China at Dalian University. This workshop brought together leading researchers and science agency...[Read More](#)

CSID Director Robert Frodeman & Assistant Director J. Britt Holbrook will visit colleagues at the UK Research Council & the European...[Read More](#)

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 Center for the Study of
Interdisciplinarity



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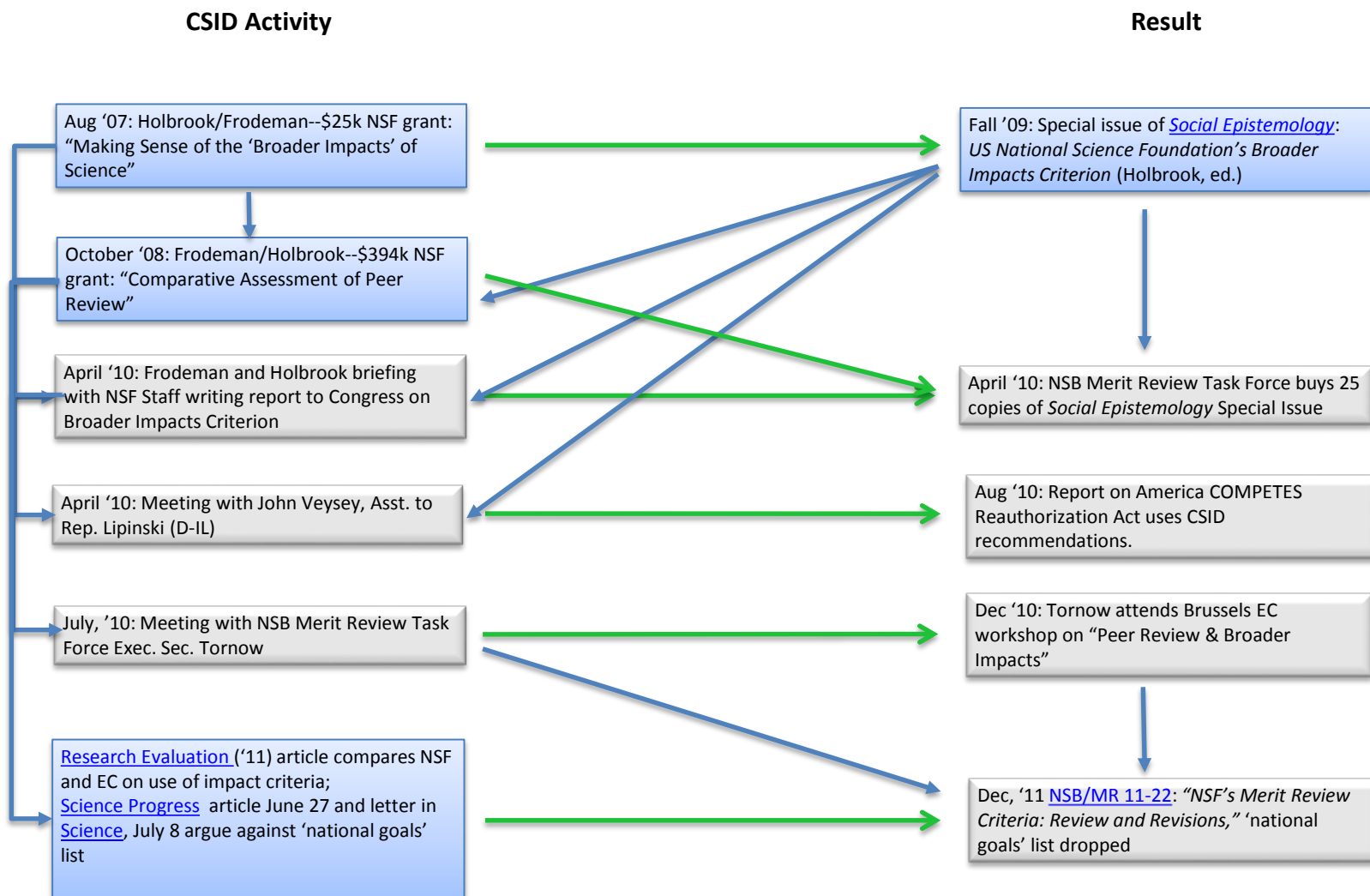
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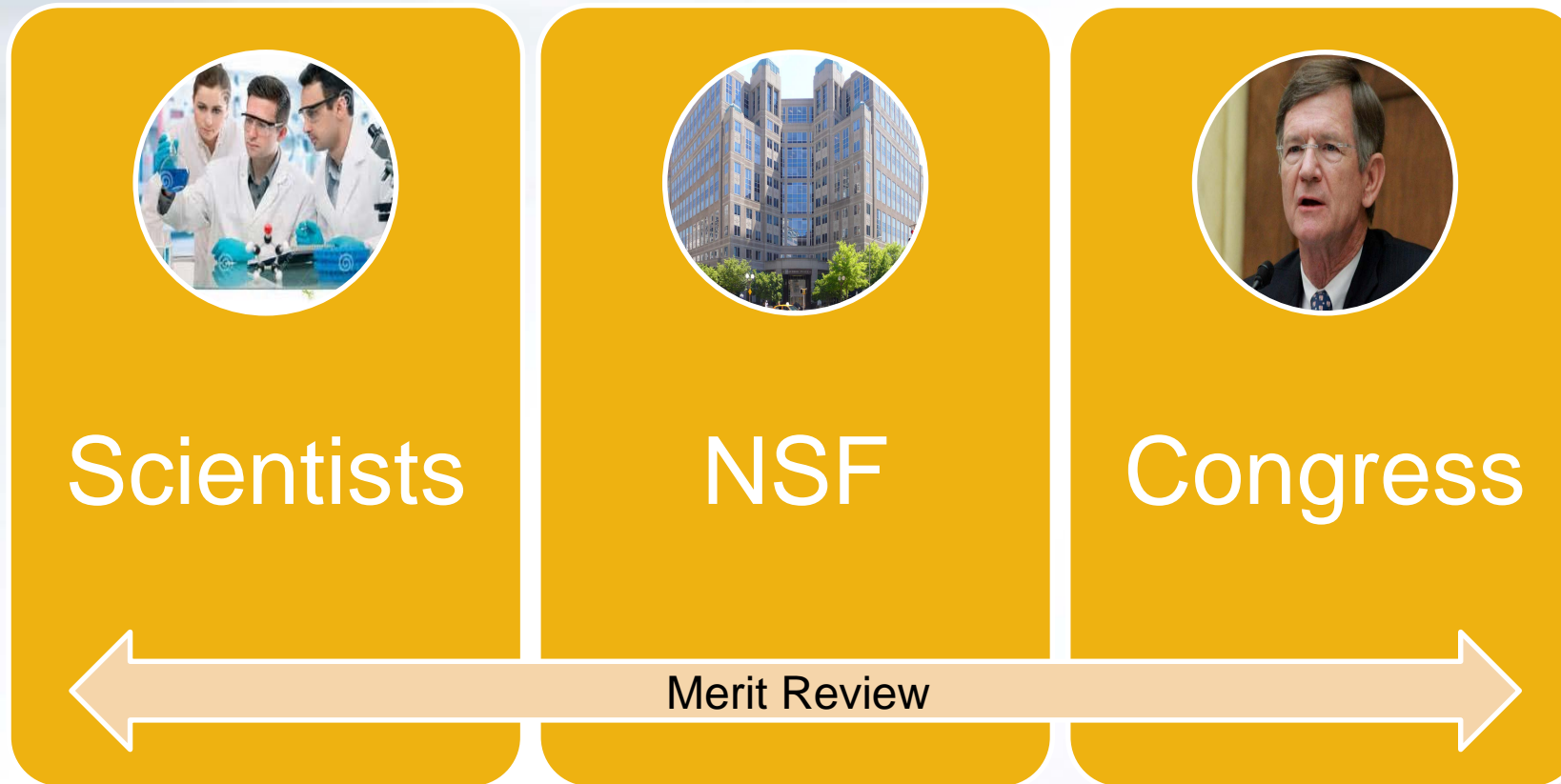
UNT System:

CSID Impacts, 2008-2011

Activities and Results



Autonomy & Accountability





J Britt Holbrook

Edit

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Google Scholar

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Citation indices	All	Since 2010
Citations	250	214
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Add co-authors

Michael O'Rourke	+	x
Christopher B. Anderson	+	x
Warren W. Burggren	+	x

Co-authors Edit...

Robert Frodeman

Adam Briggie

Kelli R. Barr

Carl Mitcham

Altmetrics





Score in context

Puts article in the top 5% of all articles ranked by attention

Good compared to other articles of same age & journal (73rd percentile)

Very good compared to articles of the same age (98th percentile)

Mentioned by

- 1 news outlet
- 6 blogs
- 81 tweeters
- 6 Facebook users
- 1 Wikipedia page
- 2 Google+ users

Readers on

- 39 Mendeley
- 7 CiteULike

Track this article

- Get email updates when this article is shared

Research impact: We need negative metrics too

News Blogs Twitter Facebook Wikipedia Google+ **Score** Demographics Help

The Altmetric score is one measure of the quality and quantity of online attention that this article has received. You can read about [how Altmetric scores are calculated](#) here.

This article scored **99.87**

The context below was calculated when this article was last mentioned on **1st May 2014**

Compared to all articles in Nature

So far Altmetric has tracked 33,837 articles from this journal. They typically receive a lot more attention than average, with a mean score of 40.1 vs the global average of 4.9. This article **has done particularly well**, scoring higher than 90% of its peers.

In the
90%ile

All articles of a similar age

Older articles will score higher simply because they've had more time to accumulate mentions. To account for age we can compare this score to the 84,736 tracked articles that were published within six weeks on either side of this one in any journal. This article has done particularly well, scoring **higher than 98% of its contemporaries**.

In the
98%ile

Ranks
913th

Other articles of a similar age in Nature

We're also able to compare this article to 981 articles from the same journal and published within six weeks on either side of this one. This article **has gotten more attention than average**, scoring higher than 73% of its contemporaries.

In the
73%ile

Ranks
259th

All articles

More generally, Altmetric has tracked 3,423,012 articles across all journals so far. Compared to these this article has done particularly well and is in the 99th percentile: it's **in the top 5% of all articles ever tracked** by Altmetric.

In the
99%ile



Score in context

Puts article in the top 5% of all articles ranked by attention

[show more...](#)

Mentioned by

- 1 news outlet
- 6 blogs
- 81 tweeters
- 6 Facebook users
- 1 Wikipedia page
- 2 Google+ users

Readers on

- 39 Mendeley
- 7 CiteULike

Track this article

- [Get email updates when this article is shared](#)

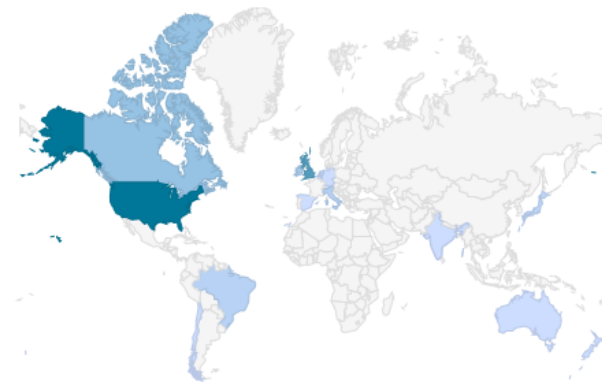
Research impact: We need negative metrics too

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Twitter attention

The data shown below were collected from the profiles of tweeters who shared this article. Click [here](#) to find out more about how the information was compiled.

Geographical breakdown



#	Country	As %
1	US	24%
2	GB	14%
3	CA	7%
4	IE	4%
5	IT	3%
5	BR	3%
7	NL	2%
7	JP	2%
7	BE	2%
–	Other	8%
–	Unknown	24%

Tweeter demographics

Type	Count	As %
Members of the public	40	49%
Scientists	30	37%
Science communicators (journalists, bloggers, editors)	9	11%
Practitioners (doctors, other healthcare professionals)	2	2%

Mendeley readership

The data shown below were compiled from readership statistics for 39 Mendeley readers of this article. Click [here](#) to see the article's page on the Mendeley website.

Geographical breakdown

Overview

Map

Fans

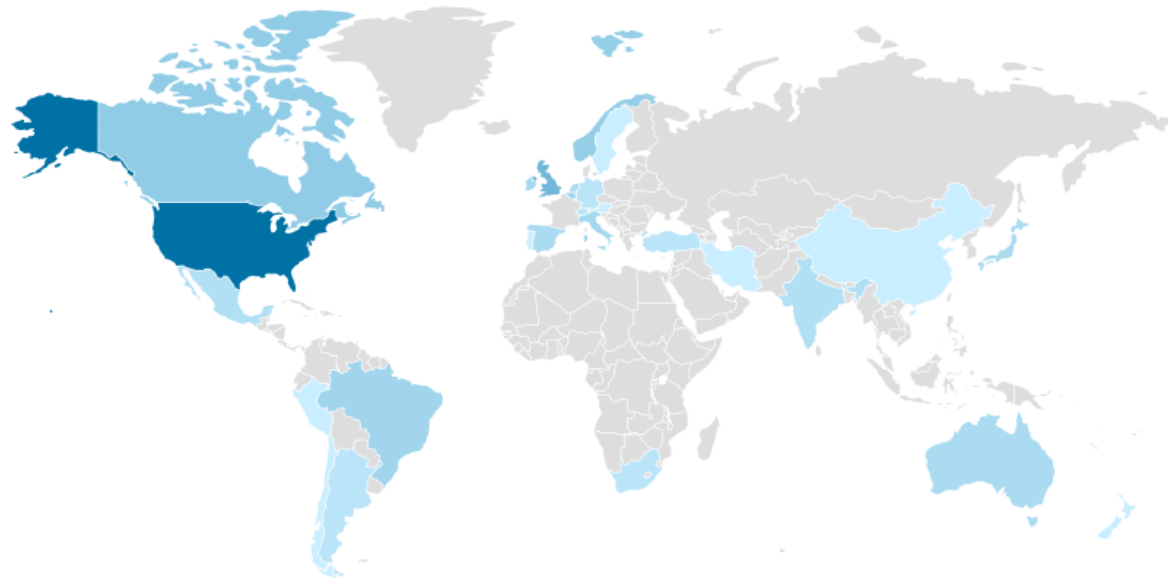
articles (58)

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Impact map



413 geotagged events from

29 countries



107



65



241

Country ▾	Impact events ⬆	Population impact ⬆
Argentina	2	0.1
Australia	4	0.2
Austria	1	0.1
Belgium	6	0.6
Brazil	6	0.1
Canada	10	0.7
Chile	1	0.1
China	1	0.1*

Designing tools for serendipity

- Illich (1973) *Tools for Conviviality*
- Basic vs. applied research – intrinsic vs. instrumental value
- Peer review vs. metrics – academic vs. societal impact
- Autonomy vs. accountability
- Serendipity – sagacity regarding opportunity
- Thanks!