

# Addressing the Broader Impacts of your Research Project

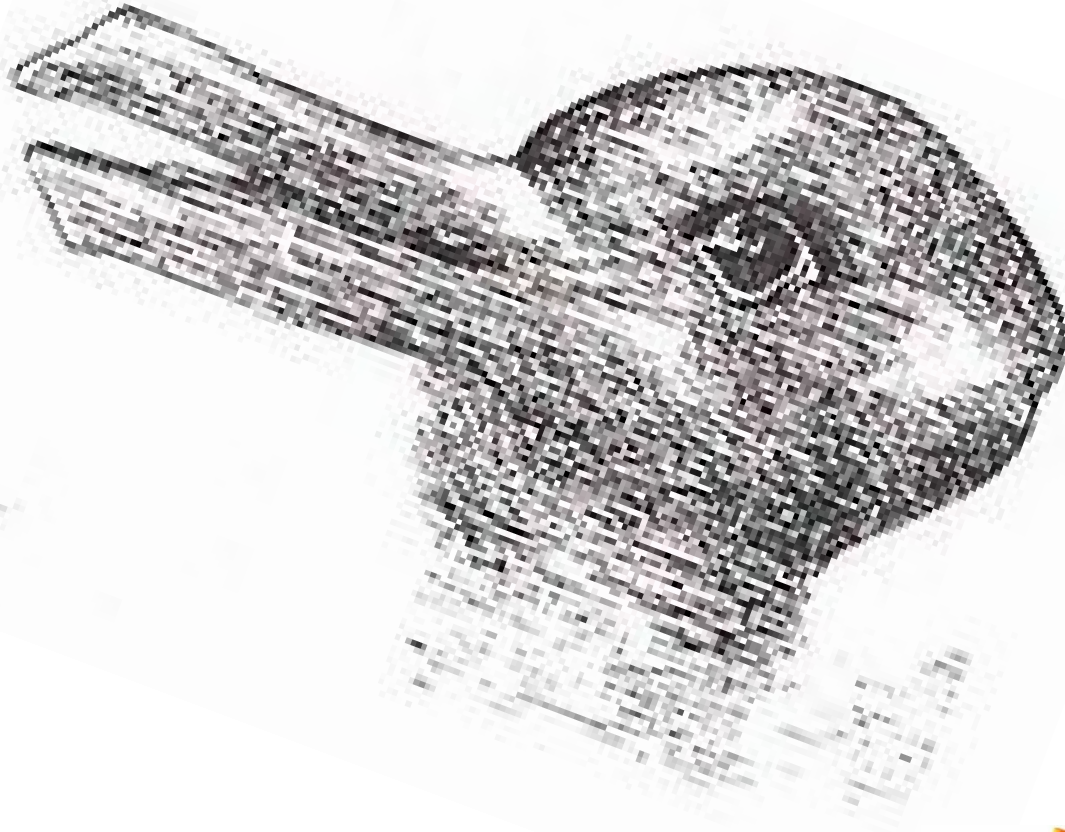
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Graduate Research Grant Assistance Workshop  
19 May, 2011  
University of North Texas  
Denton, TX, USA





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## What do we mean by “broader impacts” of research?

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## US National Science Foundation

### What are the broader impacts of the proposed activity?

- Integrating research and education (advancing discovery while promoting teaching, training, and learning)
- Broadening participation of underrepresented groups
- Enhancing infrastructure for research and education
- Disseminating results broadly
- Benefitting society



## America COMPETES Reauthorization Act of 2010

### SEC. 526. BROADER IMPACTS REVIEW CRITERION.

- (a) Goals- The Foundation shall apply a Broader Impacts Review Criterion to achieve the following goals:
- (1) Increased economic competitiveness of the United States.
  - (2) Development of a globally competitive STEM workforce.
  - (3) Increased participation of women and underrepresented minorities in STEM.
  - (4) Increased partnerships between academia and industry.
  - (5) Improved pre-K-12 STEM education and teacher development.
  - (6) Improved undergraduate STEM education.
  - (7) Increased public scientific literacy.
  - (8) Increased national security.



## European Commission FP7

From the Science in Society Work Programme (Part 5 of Capacities):

**Expected impact** : Research outcomes will contribute to a better insight on how to use ethical expertise in the policy-making process at the European and national levels and in particular how public policy should address the issue of human enhancement.



## European Commission FP7

From the Science in Society Work Programme (Part 5 of Capacities):

**Expected impact** : Research outcomes will contribute to a better insight on how to use ethical expertise in the policy-making process at the European and national levels and in particular how public policy should address the issue of human enhancement.

From the Nanosciences, Nanotechnologies, Materials and New Production Technologies –NMP Work Programme (Theme 4 of Cooperation):

**Expected impact:** (i) Solutions going well beyond the state-of-the-art in terms of cost (target of far below 1 €/Wp) and efficiency; (ii) Stimulation and acceleration of the industrial take-up of promising results beyond laboratory scale; (iii) New competitive industrial processes .



## Research Councils UK

### ***Academic impact***

The demonstrable contribution that excellent research makes to academic advances, across and within disciplines, including significant advances in understanding, methods, theory and application.

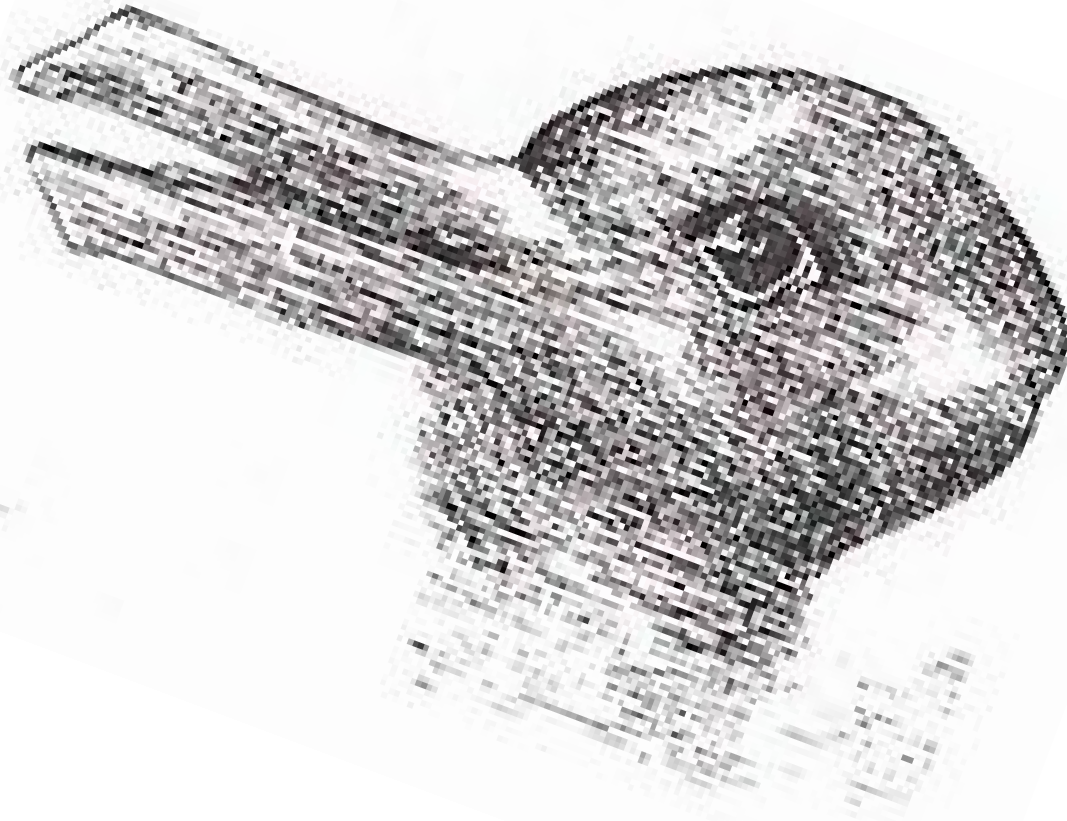
### ***Economic and societal impacts***

The demonstrable contribution that excellent research makes to society and the economy. Economic and societal impacts embrace all the extremely diverse ways in which research-related knowledge and skills benefit individuals, organisations and nations by:

- fostering global economic performance, and specifically the economic competitiveness of the United Kingdom,
- increasing the effectiveness of public services and policy,
- enhancing quality of life, health and creative output.







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## Research Councils UK

### “Pathways to Impact”

- Who might benefit from this research?
- How might they benefit from this research?
- What will be done to ensure that potential beneficiaries have the opportunity to engage with this research?



## “Integrating Broader Impacts into your Research Proposal”

Kristyn S. Masters

Delta Program in Research, Teaching, and  
Learning, University of Wisconsin

A good broader impact plan will have:

- Explicit objectives
- Stated relationship to scientific research
- Understanding of intended audience
- Specific and feasible implementation plans
- Connectivity to existing networks
- Evaluation plan- did you accomplish objectives



## Advice on QUALITY

You should develop a **BIC** statement that includes a description of:

- the intended **AUDIENCE** you are targeting
- the **NEEDS** of that audience
- your **PLAN** to meet those needs, including:
  - **PERSONNEL** (show relevant expertise)
  - **FUNDS** (demonstrate feasibility)
- your **ASSESSMENT & EVALUATION** plan.

J. Britt Holbrook and Sharon Franks  
COSEE-NOW Broaden Your Impact Webinar  
19 May, 2010



## Advice on RELEVANCE

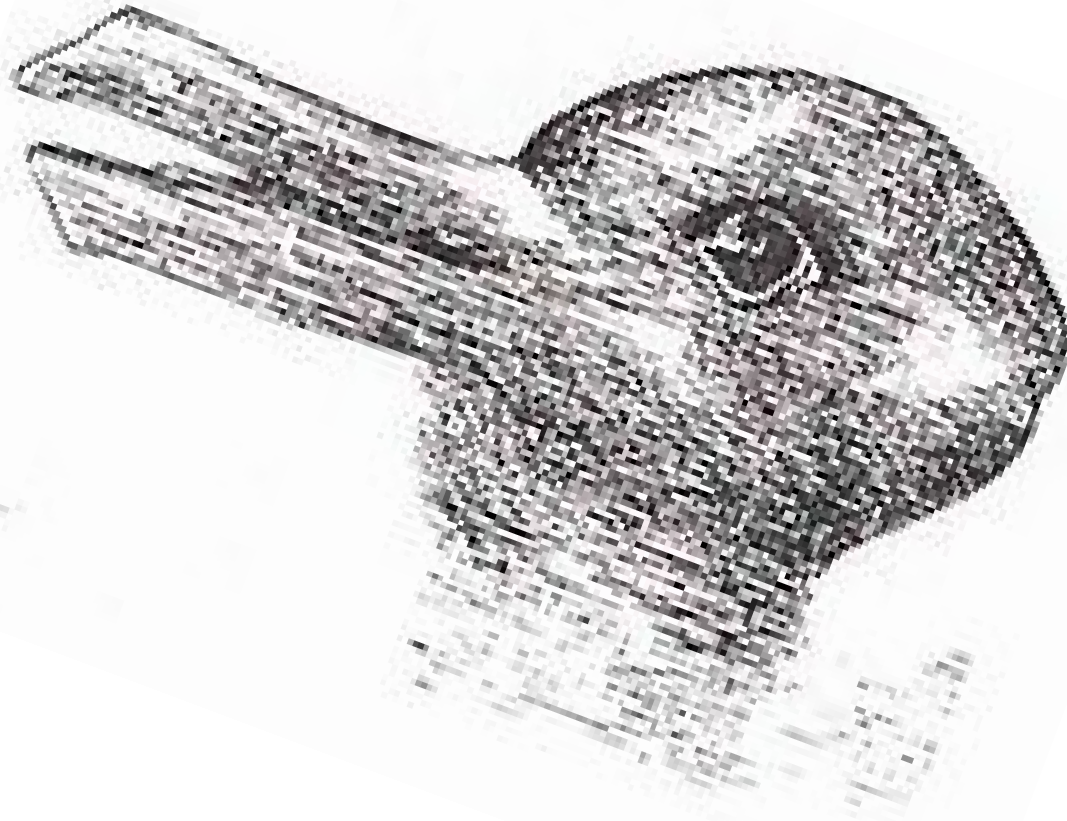
You should develop a BIC goal that:

- Revolves around something about which **YOU CARE**
- Is obviously **RELATED TO YOUR RESEARCH**
- Builds upon **SOMETHING YOU ALREADY DO**

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## Logistics

Resources – UNT Research Development Team, CSID

Partnerships – UNT organizations already involved in outreach, policy, etc.

Users of the research – co-production of research?

Relevant expertise

Assessment of impacts

Funding for impacts activities?

Capacities?

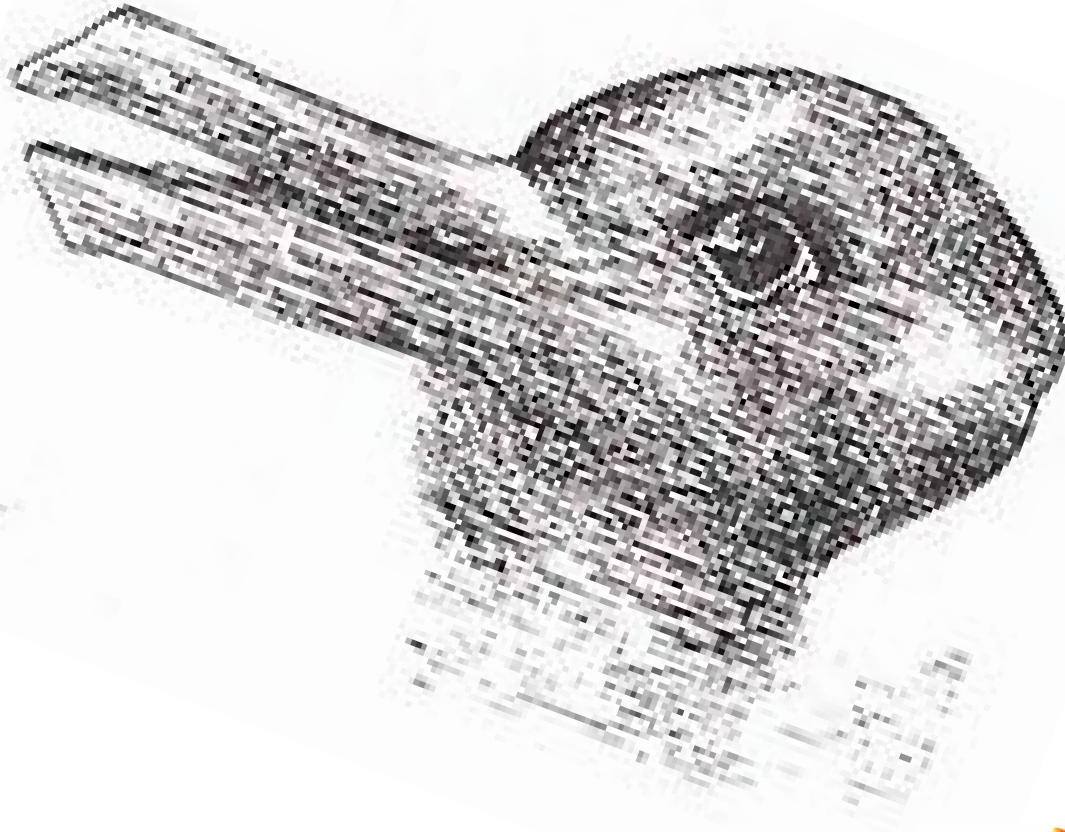




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## “The Will to Believe”

Let us give the name of *hypothesis* to anything that may be proposed to our belief; and just as the electricians speak of live and dead wires, let us speak of any hypothesis as either *live* or *dead*.

– William James



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Deadness and liveness in an hypothesis are not intrinsic properties, but relations to the individual thinker. They are measured by his [*sic*] willingness to act.

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## “The Will to Believe” in Broader Impacts

For many PIs and potential PIs, the idea that they ought to address broader impacts is a wholly dead hypothesis.



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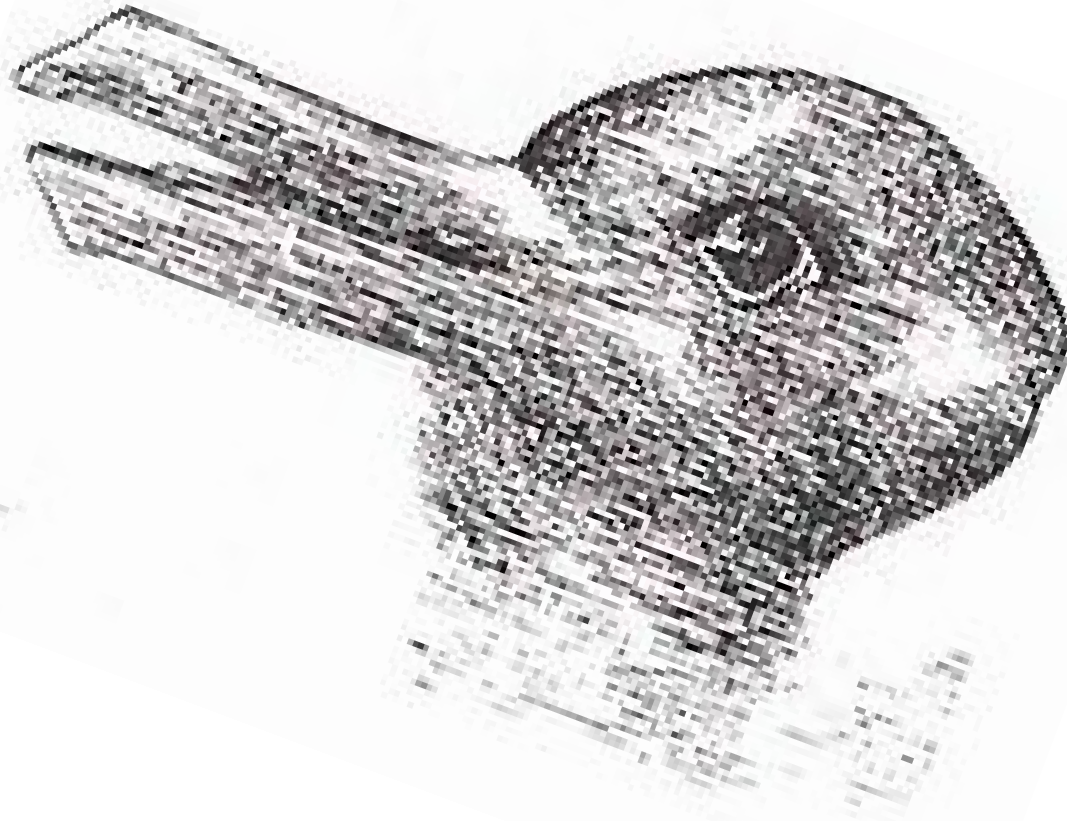
## “The Will to Believe” in Broader Impacts

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It’s as if we’ve trained academics to see only ducks.





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Your job is to train yourself, your colleagues, your students, your mentors, to see ducks and rabbits.



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How?



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How?

Ask not what you can do for broader impacts; ask what broader impacts can do for you.



Your job is to train your colleagues, your students, your future students, to see ducks and rabbits.

How?

Ask not what you can do for broader impacts; ask what broader impacts can do for you.

The point is to learn (and to teach others) to see as opportunities what others see as obstacles.





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# grant proposal

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Planning, Managing, and Funding the Research Project  
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# broader impacts

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# CV or biographical sketch

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# data management plan

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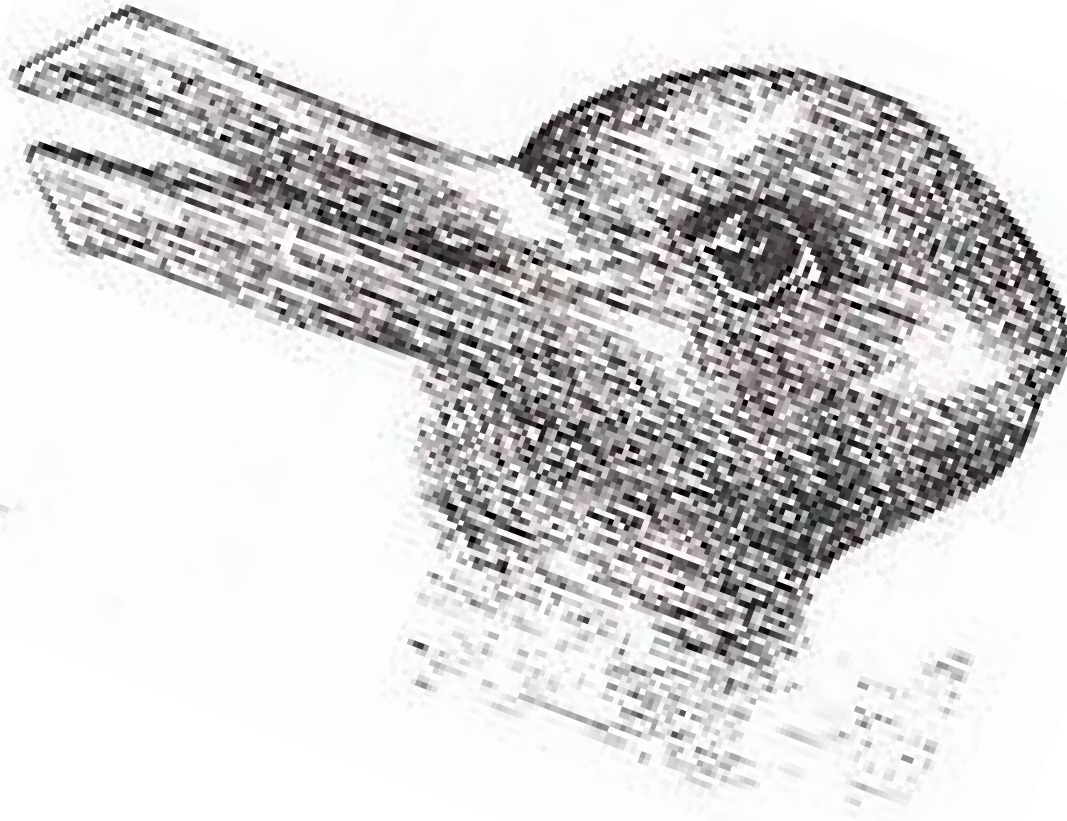
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# intrinsic and instrumental value of your research

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thank you

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## Recommended Reading/Viewing

Holbrook, J. Britt. "Accountable Science," in *Science Progress*, September 16, 2010:  
<http://www.scienceprogress.org/2010/09/accountable-science/>.

Holbrook, J. Britt. "Peer Review," in *The Oxford Handbook of Interdisciplinarity*, Robert Frodeman, Julie Thompson Klein, Carl Mitcham, eds. Oxford: Oxford University Press, 2010, 321-32.

Holbrook, J. Britt. Guest editor, *Special Issue of Social Epistemology on US National Science Foundation's Broader Impacts Criterion*, Vol. 23, Nos. 3-4, July-December 2010.

Holbrook, J. Britt. "Assessing the Science – Society Relation: The Case of the U.S. National Science Foundation's Second Merit Review Criterion," in *Technology in Society*, Vol. 27, Issue 4, November 2005, p.p., 437-451.

James, William. "The Will to Believe."

Other resources: <http://www.csid.unt.edu/topics/NSF-broader-impacts-criterion.html>

COSEE-NOW Broaden Your Impact Webinar Series: <http://coseenow.net/blog/broaden-your-impact/>

