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topics

What could dark matter be?

12/01/15 | By Laura Dattaro

Scientists don't yet know what dark matter is made of, but they are full of ideas.

The central graphic is a stylized illustration with a purple and pink color palette. It features a large circular cluster of small, black, bug-like particles representing dark matter. Lines radiate from this cluster to three smaller circular insets: one showing three blue figures, another showing a single blue figure with a headset, and a third showing a question mark. The background includes faint depictions of galaxies and question marks, suggesting a theme of scientific inquiry and discovery.

U.S. particle physics communication

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Fermilab

December 10, 2015

Communication goals

Support Ensure that the U.S. particle physics community has the resources necessary to conduct research and maintain a world leadership role.

Appreciation Ensure that the U.S. public appreciates the value and excitement of particle physics.

Reaching our audiences

Media

Proactive media outreach

Media interviews

Scientist-written articles, blogs, videos, op-eds...

Journal articles & conference presentations

Public

Public talks

Fairs, festivals & open houses

Social media & blogs

Symmetry & other institutional publications

Decision makers

Visits to policy makers

Washington events

Letter-writing campaigns

Targeted communication products

Branding & messaging & packaging

Learning from other fields: NASA

Where NASA excels

- Purposeful, compelling & consistent messaging
- Noble purpose supported by many programs
 - Next Giant Leap
 - Journey to Mars
 - Search for Life
- Stunning multimedia
- Great spokespeople
- Fun & innovative communications

How they do it

- Commitment to communication excellence at all levels
- Strong central public relations/outreach/design teams
- Far-in-advance planning & preparation
- Coaching and training for scientists and spokespeople
- \$\$\$\$

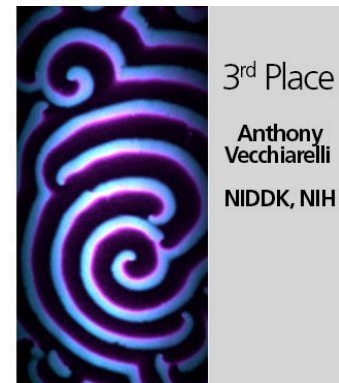
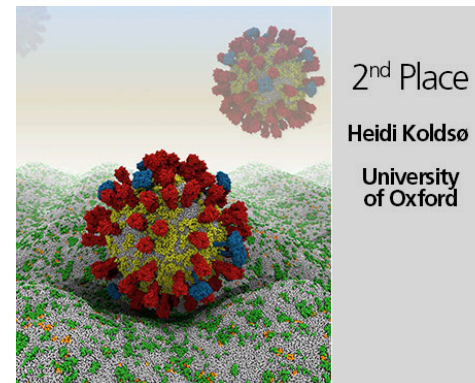
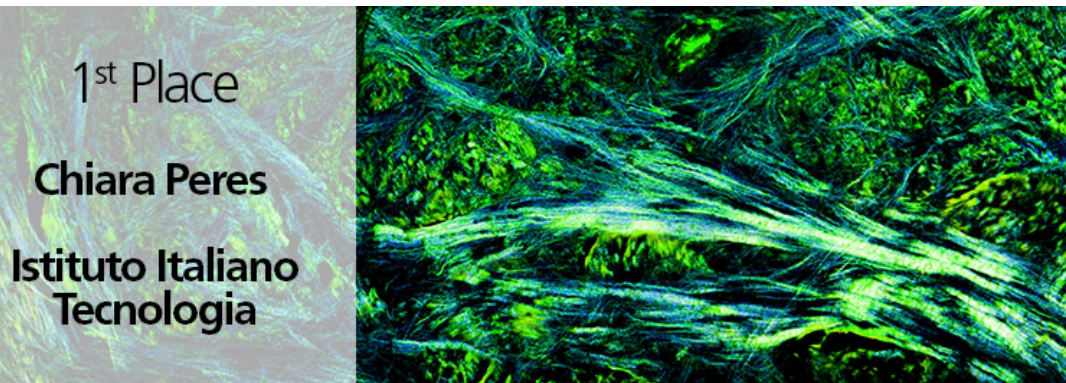
Learning from other fields: Biosciences

Where they excel

- Making an immediate connection to people's lives
- Personalizing their research
- Beautiful imagery

How they do it

- Willingness to talk about the ultimate goal rather than the immediate details
- Featuring people & their stories whenever possible
- Culture of great visualizations (& contests!)



Where would particle physics be if we...

- Fully committed to out-communicating NASA?
- Worked together as a field to deliver consistent, compelling messages to the right people at the right time?
- Were supported by a first-class, centrally coordinated communications, outreach and multimedia team?
- Recognized the critical importance of extraordinary images?
- Planned and tested our communications?
- Made outstanding communication as easy as possible?
- Rewarded and encouraged communication excellence?

Elements of this vision exist

We excel at capturing the imagination and inspiring the public

- Our science goals, project scales inspire, amaze and fascinate
- When particle physics has something (big) to say, the world sits up and listens
- This makes us the envy of many other fields!



Elements of this vision exist

Working together to deliver consistent messaging

- Unification of U.S. community around P5 report
 - Letter signed by 2,331 people tangible evidence of huge effort to build and demonstrate consensus
 - Particle physics held up as “best practice” for other fields to follow in their planning process
- Recognition that consistency must continue “post-P5”
 - Progress towards community-driven messaging described earlier by Jim Siegrist and tomorrow by Steve Ritz
- Annual spring D.C. visit by Fermilab/SLAC/US LHC users has long included consistent messaging, training and practice

Elements of this vision exist

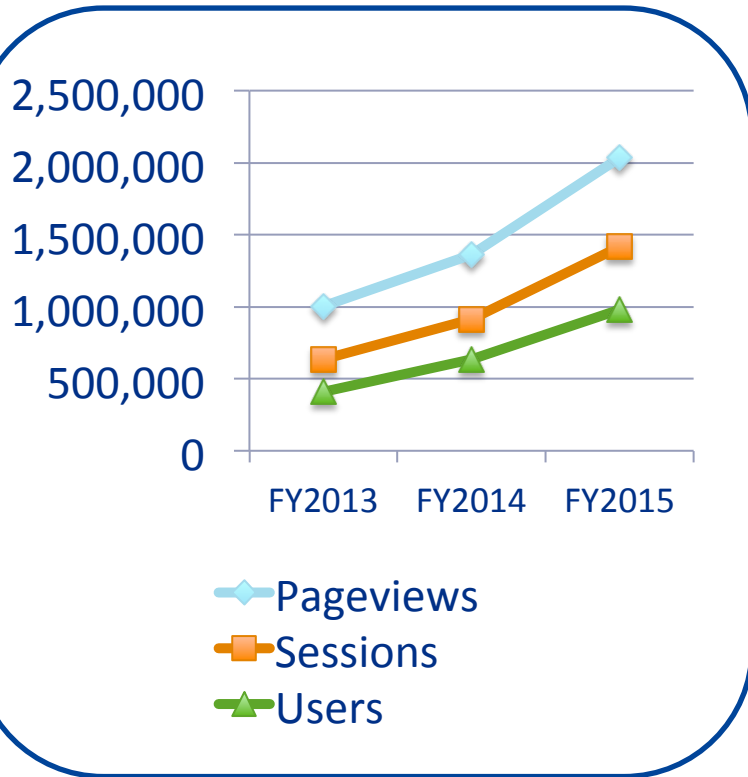
Centrally coordinated communications team

- Symmetry Magazine team based at Fermilab and SLAC working on behalf of the U.S. community since 2004
- US LHC communicator based at CERN since 2006; communicates on behalf of entire US LHC effort
- DOE HEP hire of program manager for strategic planning and communications
- Strong networks in place among international particle physics lab communicators (Interactions) and DOE national lab communicators (several groups)

Elements of this vision exist

Compelling messages and graphics delivered in a fun, innovative way: Symmetry Magazine leads the way

Fully online in 2013



Top pages of 2015

1. Homepage.....	125,954
2. Ten things you might not know about antimatter	82,872
3. Physics Valentines.....	44,268
4. How to build your own particle detector	40,661
5. Particle physics personality quiz.....	29,291
6. Ten things you might not know about particle accelerators.....	26,822
7. Standard Model (interactive).....	23,189
8. Our flat universe.....	19,496
9. Is this the only universe?.....	18,493
10. Something goes bump in the data.....	16,654

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Where must we improve? **Coordination & planning**

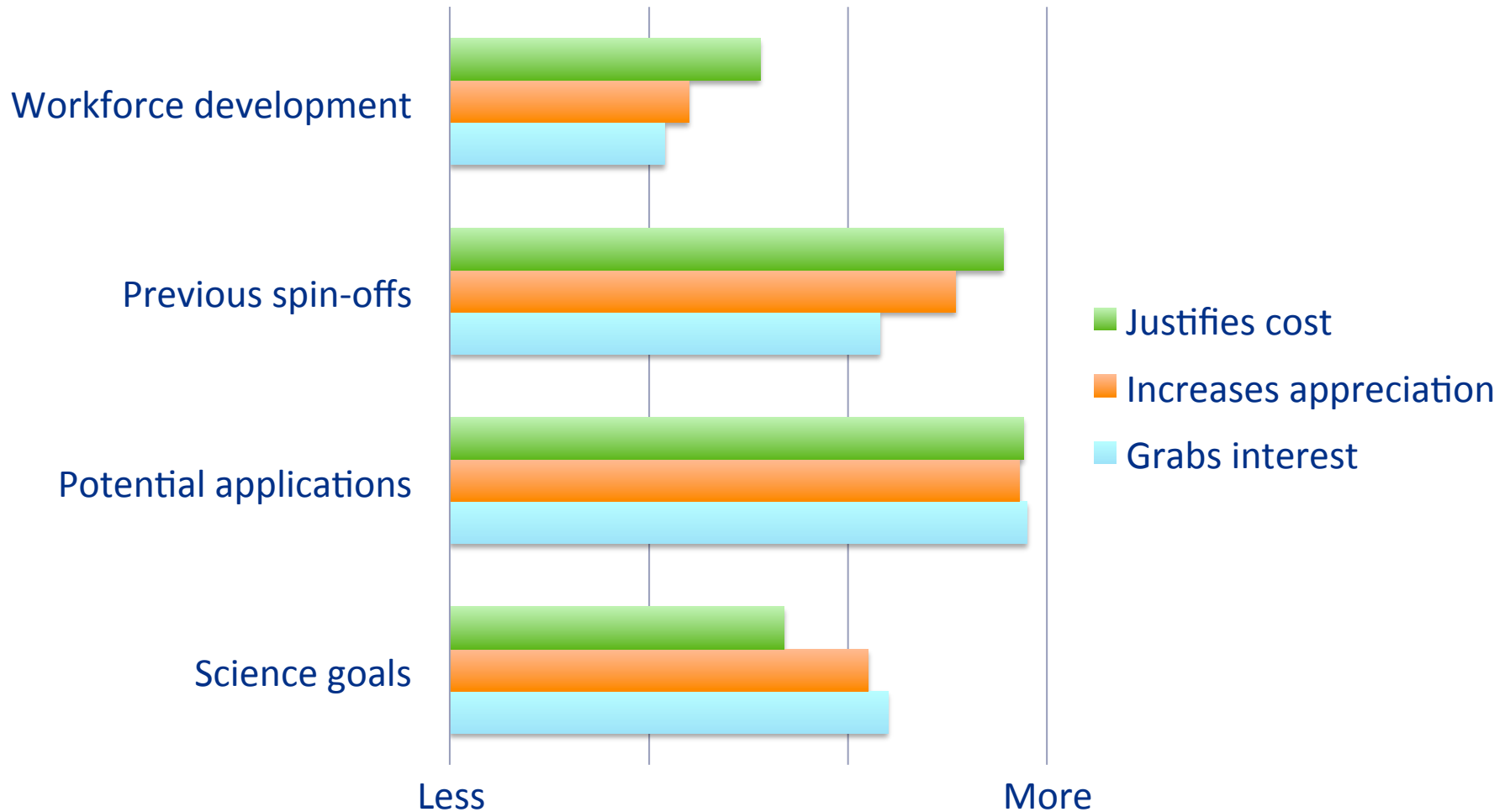
- Developing a compelling noble purpose and showing how pieces support
- Planning ahead for project/experiment communication
- Working together in an atmosphere of mutual trust

Where must we improve? Lowering barriers

- Overcome the #1 barrier – time – by making it as easy as possible for people to communicate
- Communication resources that are easy to access
- Trainings online and in person in places scientists already go
- Easy-to-find opportunities for communication/outreach

Where must we improve? Compelling messages

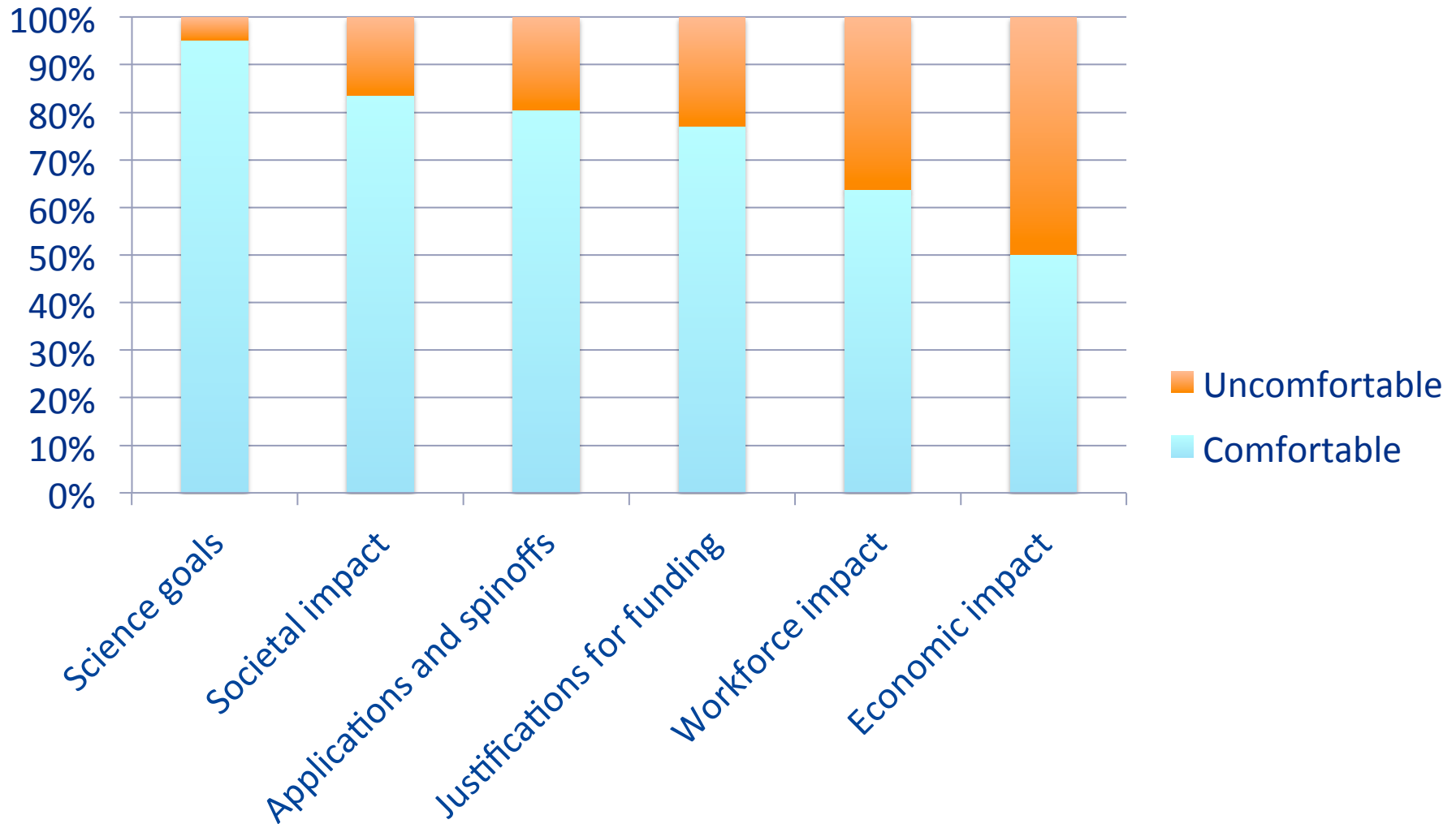
Particularly about our value to society



2013 Snowmass Communication, Education and Outreach Survey. 641 total respondents.



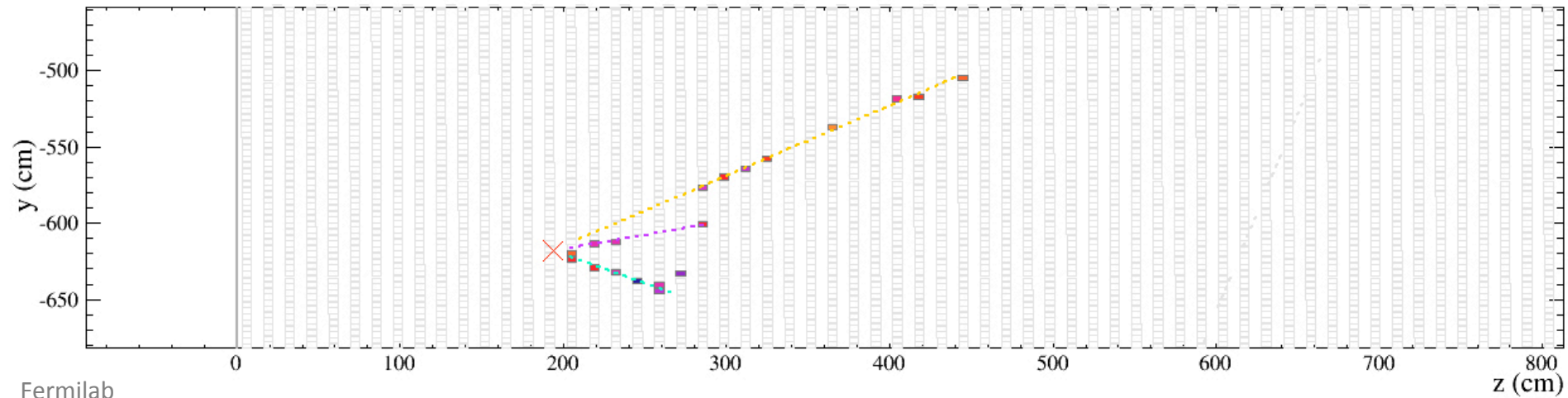
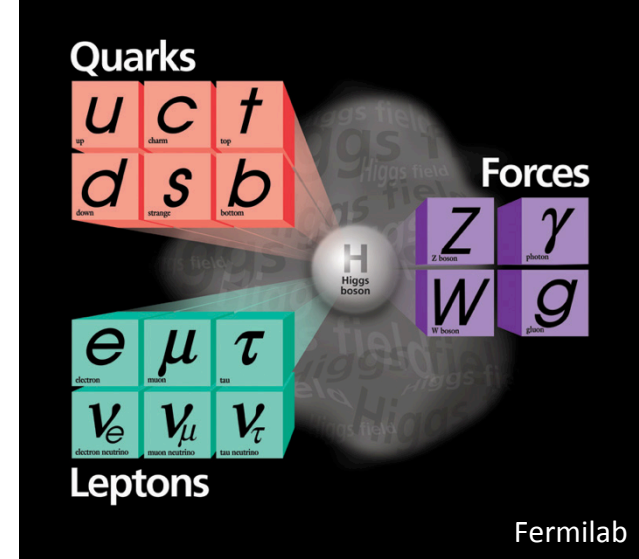
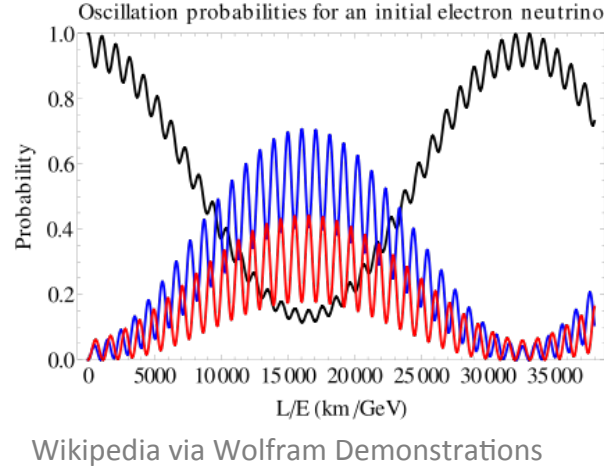
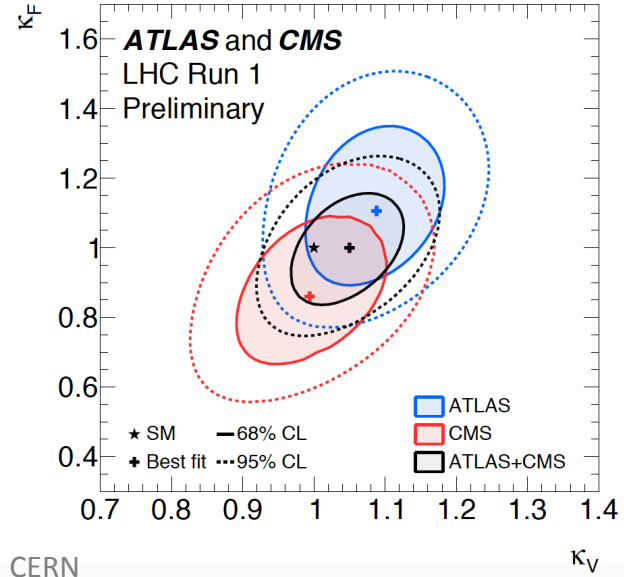
Value to society: Our communication comfort level



2013 Snowmass Communication, Education and Outreach Survey. 641 total respondents.



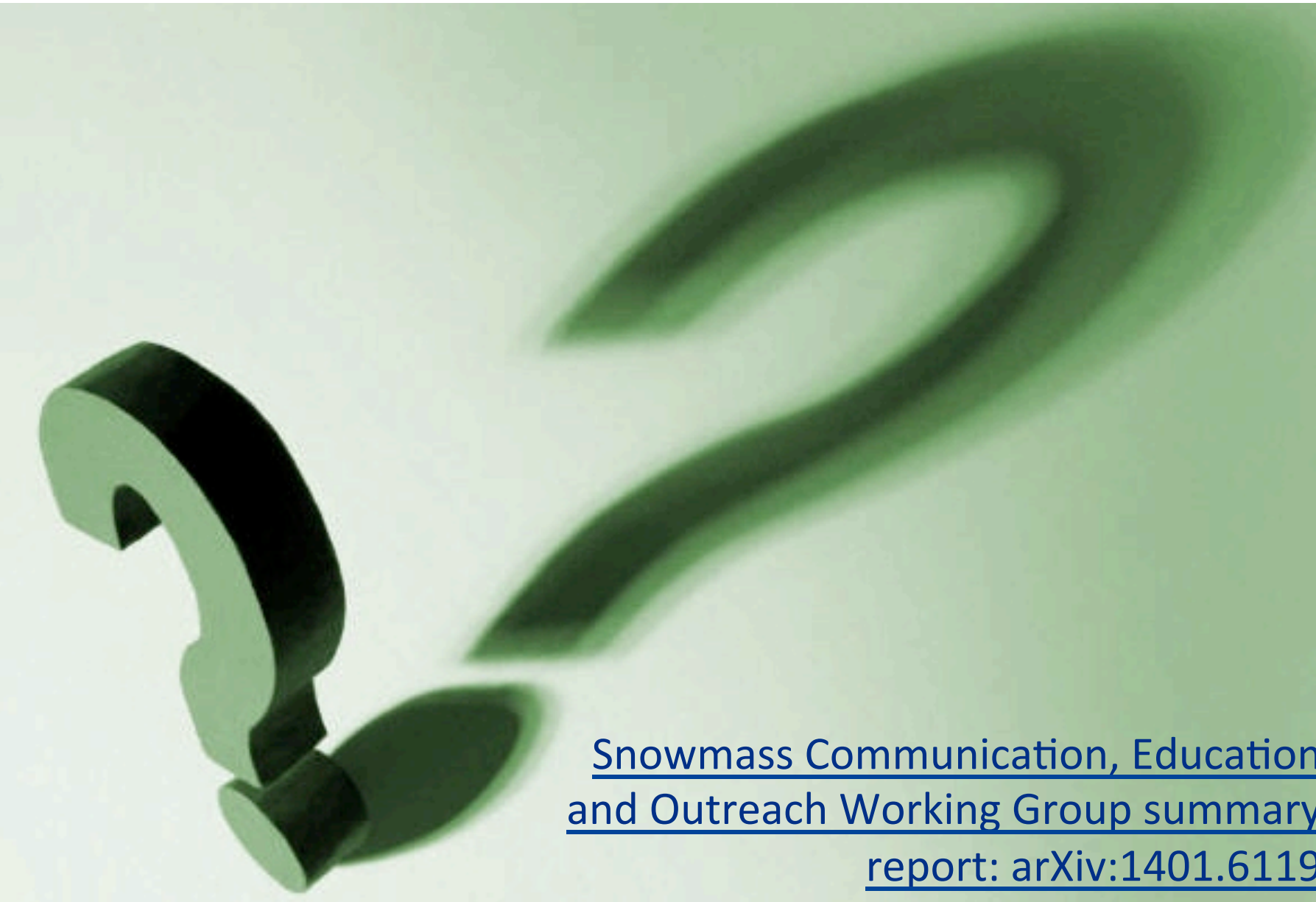
Where must we improve? Outstanding graphics



Recommendation to achieve the vision

Assemble a centrally coordinated communications, outreach and multimedia team tasked with lowering barriers to excellent communication nationwide, including:

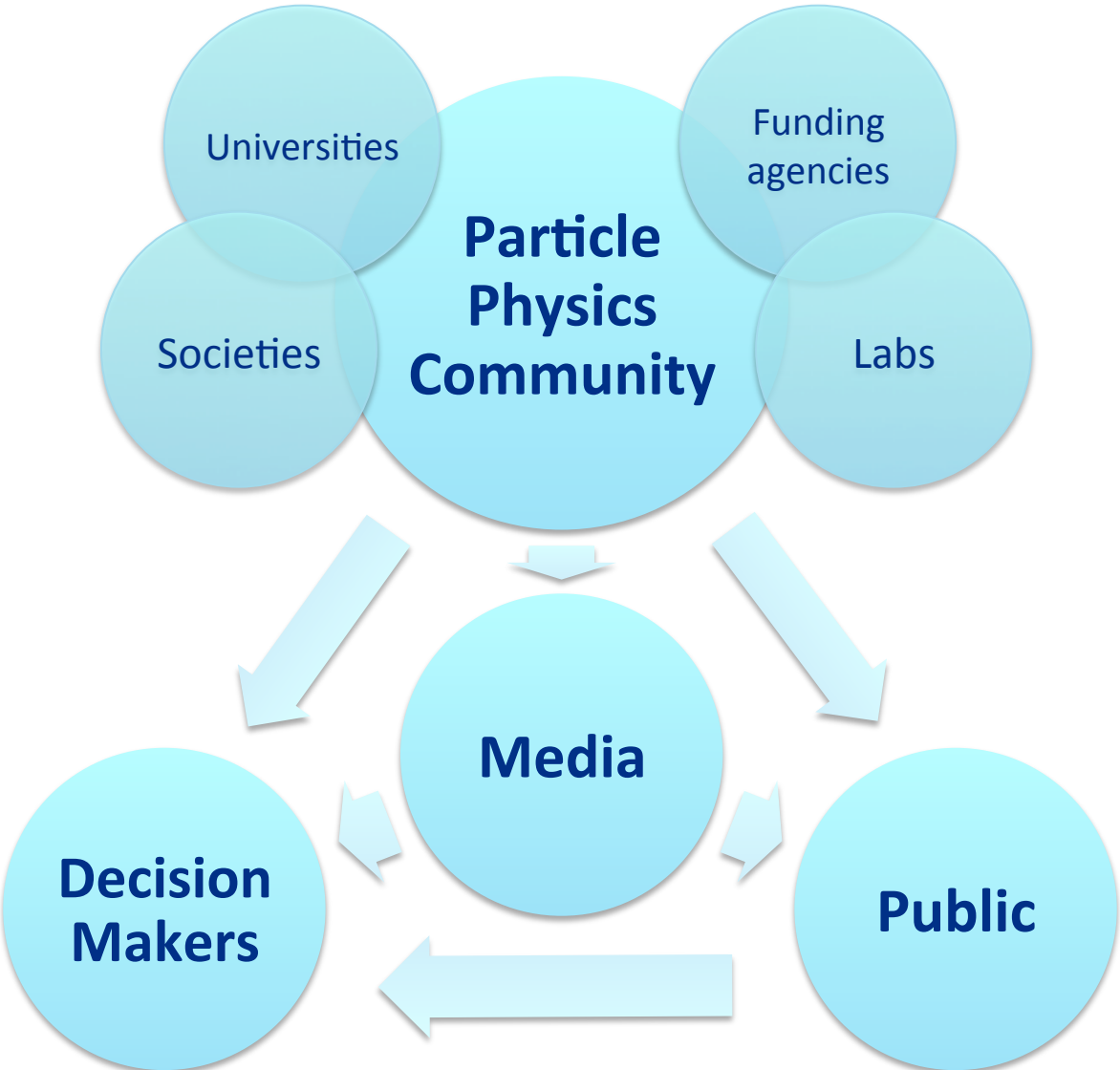
- Nationwide coordination of and support for communications activities, including strategy development and messaging
- Developing a comprehensive central communication and outreach website for physicists
- Communication training for the U.S. particle physics community (at conferences, meetings...)
- Helping the community develop first-class multimedia
- Increasing frequency of communication activities aimed at decision makers
- **Augmenting, not replacing** existing efforts



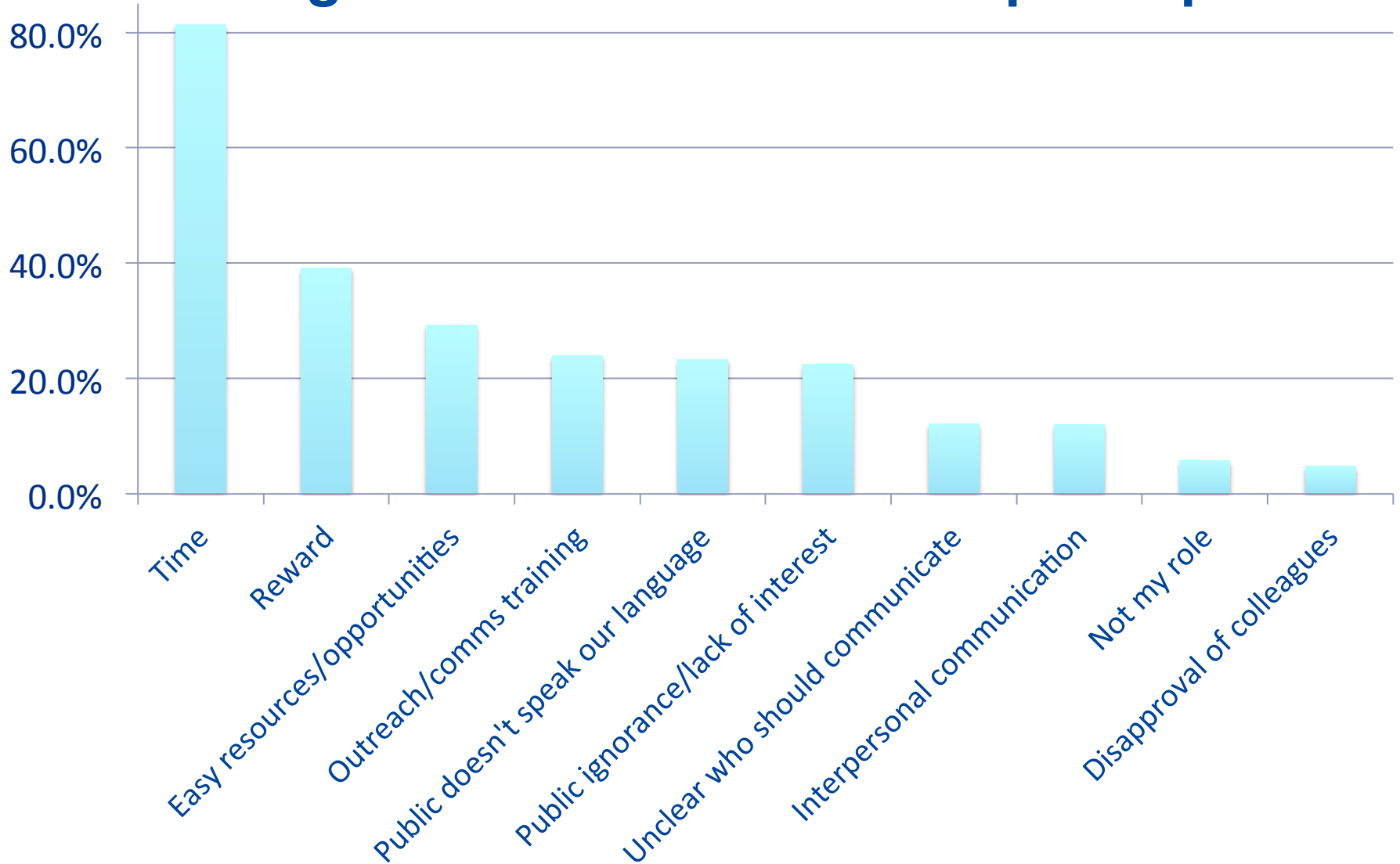
Snowmass Communication, Education
and Outreach Working Group summary
report: [arXiv:1401.6119](https://arxiv.org/abs/1401.6119)

BACKUP

Communication landscape



Barriers to greater comms/outreach participation



2013 Snowmass Communication, Education and Outreach Survey. 641 total respondents.



NASA and DOE public affairs funding

FY14 Funding	DOE	NASA
Agency total	\$27	\$17.6
Science total	\$5	\$5.1
Headquarters Public Affairs	\$3.6	\$14.4
Public Affairs total		\$47.3