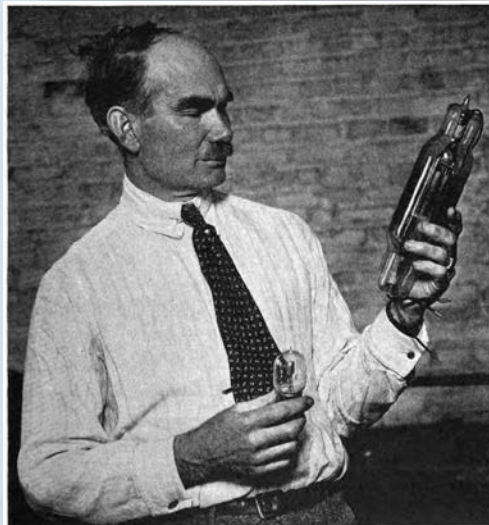**SciTech FUTURES**

Aaron Chan
aaron.m.chan2.civ@mail.mil

DESIGN • DEVELOP • DELIVER • DOMINATE
SOLDIERS AS THE DECISIVE EDGE

"Les avions sont des jouets intéressants mais n'ont aucune utilité militaire. *Airplanes are interesting toys, but of no military value*"

"While theoretically and technically television may be feasible, commercially and financially it is an impossibility."

"There is practically no chance communications space satellites will be used to provide better telephone, telegraph, television, or radio service inside the United States."

"Cutting all these cords and cables is exciting, but it isn't inevitable. The truth about wireless computing is that it's not going to pan out"

Survey Data on Innovation

AGENCY RANKINGS BY CATEGORY

View a Different Category ▾

Innovation

❓ Frequently Asked Questions ▾

▤ Data Analysis ▾

☰ List of Participating Agencies

The Innovation category measures employee perceptions of efforts to improve the way work is done, including their own personal motivation to promote change and the support and rewards they receive for promoting new ideas.

📋 Show Survey Questions

Large Agencies	Midsize Agencies	Small Agencies	Agency Subcomponents

Click on the links below to view an agency's full report. Click on the column headings to sort by rank, agency name, score or change.

SORT: RANK ↑

NASA ➡
Air Force ➡
Navy ➡
OSD ➡
Army ➡

Rank ↑	Agency	2016	2015	Change (2015-16)
1	National Aeronautics and Space Administration	79.6	78.2	1.4 ↑
2	Intelligence Community	70.2		30.6 ↑
3	Department of Health and Human Services	67.0	65.0	2.0 ↑
4	Department of State	65.9	66.1	-0.2 ↓
5	Department of the Air Force	63.7	64.2	-0.5 ↓
6	Department of Commerce	63.5	62.4	1.1 ↑
6	Department of the Navy	63.5	62.3	1.2 ↑
8	Department of the Interior	62.9	61.5	1.4 ↑
9	Department of Justice	62.6	62.2	0.4 ↑
10	Office of the Secretary of Defense, Joint Staff, Defense Agencies, and Department of Defense Field Activities	62.4	61.0	1.4 ↑
11	Department of Labor	62.1	59.3	2.8 ↑
12	Department of the Army	61.9	61.3	0.6 ↑
13	Department of Transportation	61.5	59.7	1.8 ↑
14	Department of Agriculture	61.2	59.7	1.5 ↑
15	Social Security Administration	60.0	61.0	-1.0 ↓
16	Department of the Treasury	59.2	58.5	0.7 ↑
16	Department of Veterans Affairs	59.2	57.9	1.3 ↑
18	Department of Homeland Security	51.1	48.8	2.3 ↑

SciTech FUTURES

Was H.G. Wells a visionary ahead of his time? Is Electronic Warfare an old idea from 1917 that just needed technology to catch up? Can you help us see what's next? Then the **U.S. Army science and technology community** needs your help to envision the role of robotics and artificial intelligence in the Future Operating Environment (FOE).

From 6-19 March 2017 we'll be running our latest futures game, sponsored by the Office of the Deputy Assistant Secretary of the Army (Research & Technology) in partnership with the U.S. Army Training and Doctrine Command's (TRADOC) Mad Scientist Initiative.

Through this game, you can join fellow thought leaders in exploring how advances in robotics, artificial intelligence, autonomous systems, and related technologies might transform the world and what that means for the Army. You will be able to share your ideas about the future, collaborate with (and challenge) other players, and bid on the most compelling concepts in an online marketplace.

At the end of the game, we'll evaluate your ideas to identify the most thought-provoking, challenging, and inspiring submissions. From this foundation, our team of analysts, concept artists, and authors will do further exploration that will be used to inform Army leaders, guide wargames examining future capabilities, and help shape over \$2 billion a year in S&T investments. Success depends on having a talented, diverse group of players who are eager to think differently about thorny issues at the intersection of science, technology, and defense. That's why your involvement is so important.

What's in it for you? Well, apart from the opportunity to challenge conventional thinking and influence how the Army thinks about the future, all players will receive access to a digital library of concept art inspired by the ideas generated during the game. Top players will be recognized through our online leaderboards and recaps. Those players will also receive a high-quality print piece that brings their best submissions to life through full-color graphics. How do you become a top player, you ask? By getting inspired by someone else's thoughts, sharing your own ideas, and working collaboratively to inject your expertise!

You can learn more and register for the game at any time by visiting http://futures.armyscitech.com.
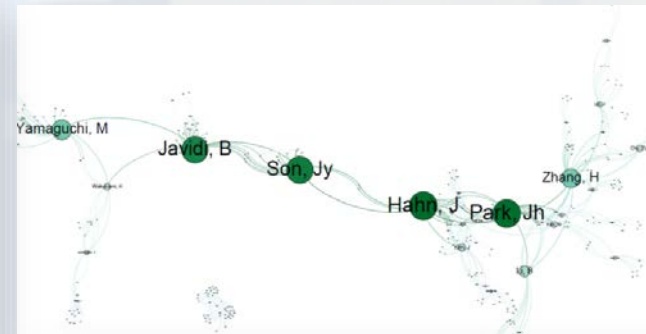
We hope to see you in-game starting on 6 March, and look forward to your contributions! Feel free to share this invitation with fellow creatives, technologists, and futurists who might be interested in playing.

Thank you,
-The SciTech Futures Team
http://futures.armyscitech.com
http://ict.usc.edu

SciTech Futures is a partnership between the Deputy Assistant Secretary of the Army (Research & Technology) and the USC Institute for Creative Technologies

USC Institute for Creative Technologies

Top Funding Organizations in WoS Publication

(Organizations listed, top to bottom: Natural Science Foundation – China; NSF; Japan Society for Progress of Science; NIH; Beijing Nova Program; National Science Council – Taiwan; National Basic Research Program – China; Ministry of Education – South Korea; Ministry of Education – Czech Republic; Engineering and Physical Sciences Research. Axis: 0%, 5%, 10%, 15%, 20%)
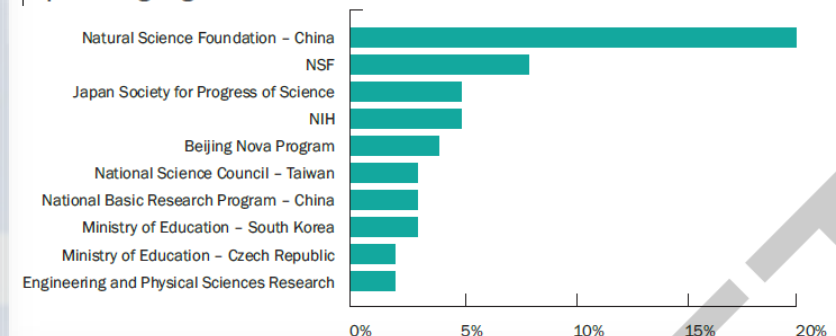
Table 2. Top U.S. UD Researchers by Citations

Researcher	Citations	Organization	Background
Javidi, Bahram	368	University of Connecticut	3D Imaging/Visualization/Display
Banks, Martin S.	338	University of California, Berkeley	Vision Science/Human Factors
Hoffman, David[19]	241	University of California, Berkeley	Human Vision/3D Imaging/Graphics
Bove, V Michael	92	MIT, Media Lab	Visual Display/Optics
Barabas, James[20]	91	MIT, Media Lab	Visual Perception/Display Technology

Table 3. Dr. Bahram Javidi Top Three Cited Papers

Year	Title	Topic
2003	3D object watermarking by a 3D hidden object	Presenting a method to watermark a 3D object with another hidden 3D object using digital holography
2006	Methods for displaying three-dimensional images	Overview of essential components to generate 3D images: image acquisition, multiplexing processing, and display mechanisms.
2013	Advances in three-dimensional integral imaging: sensing, display, and applications	Physical principles and applications of integral imaging.
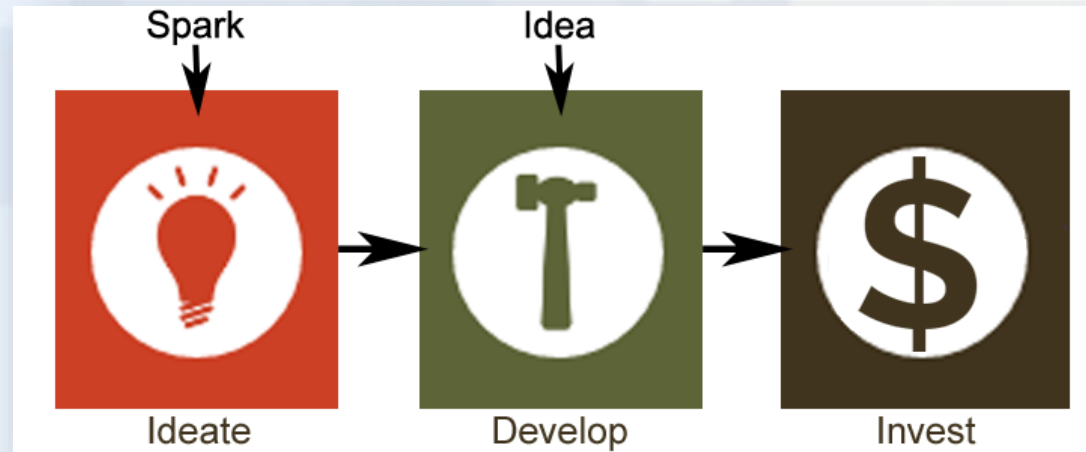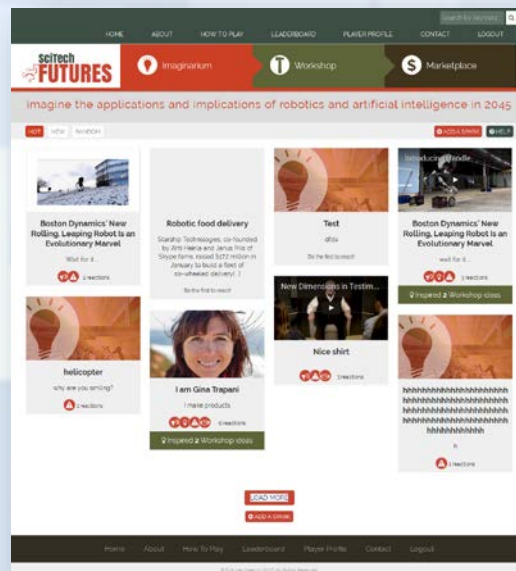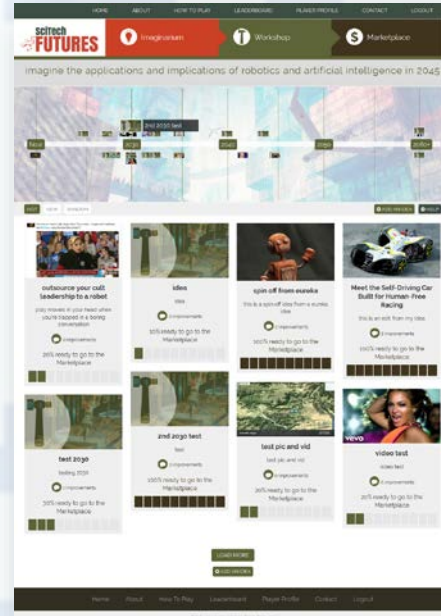
Imaginarium   Workshop   Marketplace
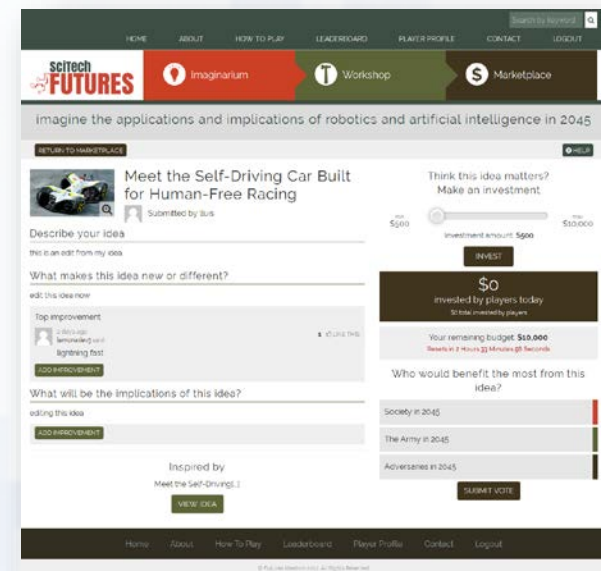
Boston Dynamics' New Rolling, Leaping Robot Is an Evolutionary Marvel

Introducing Handle

wait for it....

https://www.wired.com/2017/03/boston-dynamics-new-rolling-leaping-robot-evolutionary-marvel/
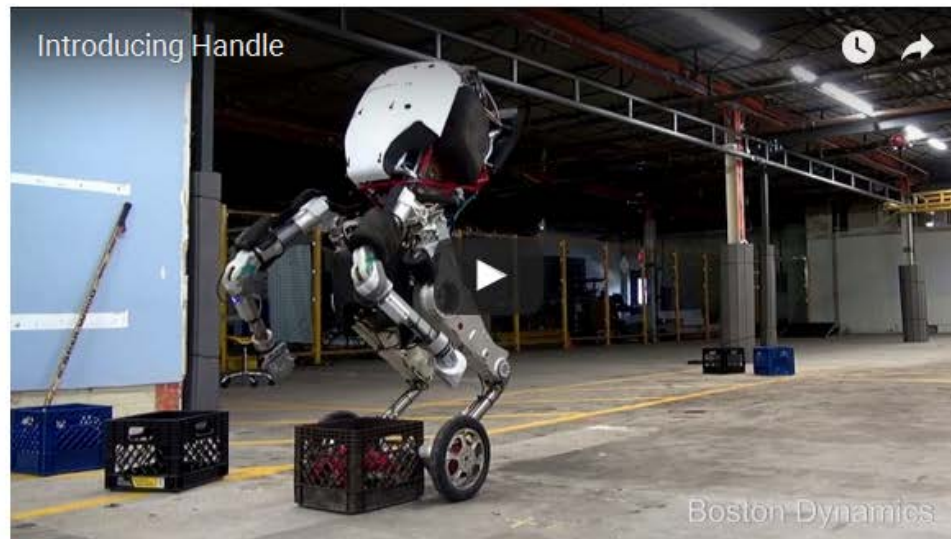
Added by lluis

Reactions

Challenges conventional wisdom

I never thought of that

Potential risk

Potential opportunity

SUBMIT REACTION

Does this give you an idea about Robotics and Artificial Intelligence in 2045?
Click the button below to create an idea in the Workshop.

EUREKA!

Workshop

imagine the applications and implications of robotics and artificial intelligence in 2045

RETURN TO WORKSHOP

❓ HELP

The future of sports

Submitted by lluis

Available for investment in the Marketplace.

INVEST IN THIS IDEA

4 👍

Describe your idea

The future of sports entertainment will be ruled by robot athletes

ADD IMPROVEMENT

What makes this idea new or different?

with robots

ADD IMPROVEMENT

What will be the implications of this idea?

the robots may not be as interesting as real athletes

Top improvement

3 days ago
skenny said

1 👍 LIKE THIS

robots are not fun

ADD IMPROVEMENT

Has this given you an idea?

CREATE SPIN OFF

When will this idea make a difference?

| Your vote | Average vote | Total votes |

| Now | 2030 | 2040 | 2050 | 2060+ |
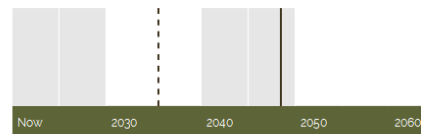
You can change your vote in 2 Hours 10 Minutes 57 Seconds

Help make this idea better.

Explore suggestions from other players and add your own.

1. What part of this idea do you want to build on?

Description   New / Different   Implications

2. What would you build on this idea?
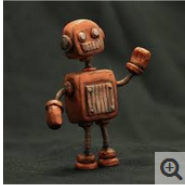
0/1000 characters

ADD IMPROVEMENT

What other players said

RETURN TO MARKETPLACE

@HELP

spin off from eureka

Submitted by lemonade

Describe your idea

this is a spin off idea from a eureka idea

What makes this idea new or different?

with tiny robots

Top improvement

1 hour ago
lemonade said

0 LIKE THIS

this is new

ADD IMPROVEMENT

What will be the implications of this idea?

will this work properly?

Top improvement

23 hours ago
icet said

1 LIKE THIS

boop

ADD IMPROVEMENT

Inspired by

Boston Dynamics' New[...]   spin off from eureka

VIEW SPARK   VIEW IDEA

Think this idea matters?
Make an investment

min
$500

max
$9,500

Investment amount: **$500**

INVEST

$1,000
invested by players today
$1,000 total invested by players

Your remaining budget: **$9,500**
Resets in 2 Hours 2 Minutes 6 Seconds

Who would benefit the most from this idea?

Society in 2045

The Army in 2045

Adversaries in 2045

SUBMIT VOTE

Why should others invest in this idea?

Let other players know what made you invest in this idea

0/1000 characters
Please enter a comment.

SUBMIT COMMENT

Join us at

https://futures.armyscitech.com

Intelligent Machines

AI Software Learns to Make AI Software

Google and others think software that learns to learn could take over some work done by AI experts.

by Tom Simonite   January 18, 2017

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Progress in artificial intelligence causes some people to worry that software will take jobs such as driving trucks away from humans. Now

ARTIFICIAL INTELLIGENCE

Bill Gates Says Robots Should Be Taxed Like Workers

David Z. Morris
Feb 18, 2017

In a new interview with Quartz, Microsoft founder Bill Gates makes a rather stunning argument—that robots who replace human workers should incur taxes equivalent to that worker's income taxes.

"Right now, the human worker who does, say, $50,000 worth of work in a factory, that...
think that we...

Get Data Sh...

Gates argues...
to help fund...
would be tra...
workers will...
"slow down t...
time to mana...

"…those were simple computers, of course, this being before the time of the rational use of computers to design more advanced computers had been established."

"…the new law said that companies were free to fire any employee, but a worker replaced by a nubot that "appears or pretends to be human" had to be compensated."

http://futures.armyscitech.com

Why Crowdsourcing

"The superior human strategies stem from the mind's ability to capture the essence of a problem. Quantum concepts may seem less bizarre to people in a game than they do in other contexts, because it is an environment in which they expect rules to be broken,

How to Be Less Terrible at Predicting the Future

January 14, 2016 @ 10:07am
by Stephen J. Dubner
Produced by: Arwa Gunja

LISTEN NOW: Future 46:52

How did typical Americans with no foreign-policy expertise come to make remarkably accurate predictions for U.S. intelligence officials? Not with Magic 8 balls. (photo: frankieleon)

Our latest Freakonomics Radio episode is called "How to Be Less Terrible at Predicting the Future." (You can subscribe to the podcast at iTunes or elsewhere, get the RSS feed, or listen via the media player above.)

Experts and pundits are notoriously bad at forecasting, in part because they aren't punished for bad predictions. Also, they tend to be deeply unscientific. The psychologist Philip Tetlock is finally turning prediction into a science — and now even you could become a superforecaster.

Below is a transcript of the episode, modified for your reading pleasure. For more information on the people and ideas in the episode, see the links at the bottom of this post. And you'll find credits for the music in the episode noted within the transcript.

* * *

"A bad forecaster: I think an unwillingness to change one's mind in a reasonably timely way in response to new evidence. A tendency, when asked to explain one's predictions, to generate only reasons that favor your preferred prediction and not to generate reasons opposed to it."
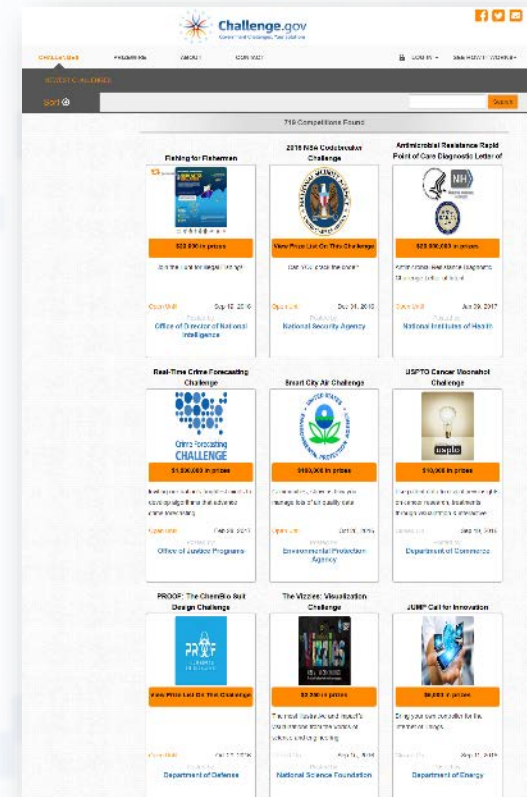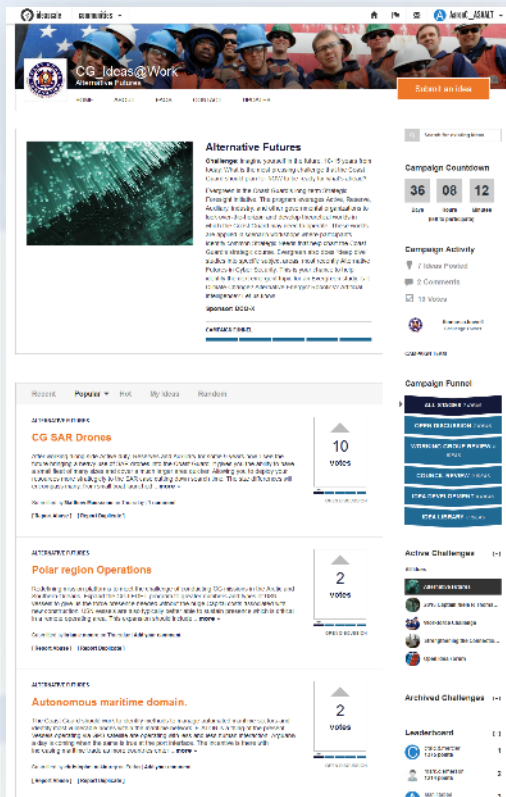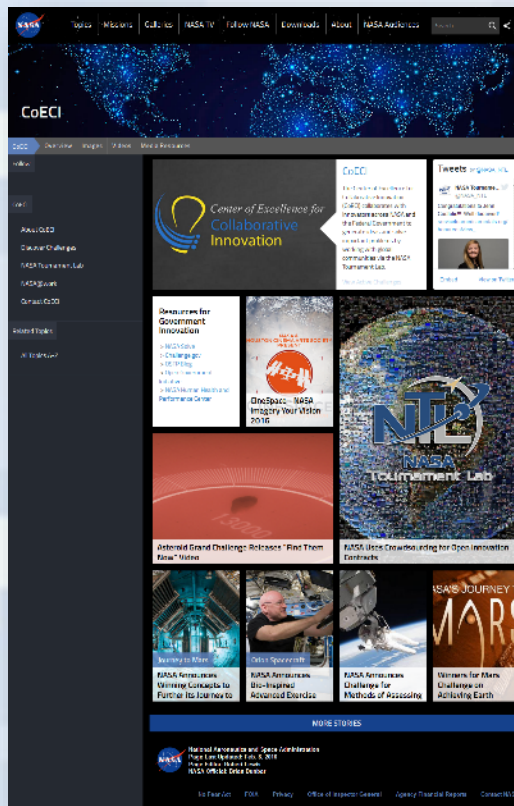
Crowdsourcing Efforts Across USG

NASA Center of Excellence for Collaborative Innovation

USCG CG_Ideas@Work

Challenge.gov

Alignment to Policy

- Aligned with overarching USG/DOD Guidance
  - Implementation Directive BBP 3.0 "…increase access to innovation within the national security environment through engaging non-traditional suppliers, entrepreneurs, and inventors."
  - OSTP Memo 30 SEP 2015 "build capacity for citizen science and crowdsourcing."
  - OMB Memo M-15-16 "encourages Federal agencies to consider incorporating citizen science and crowdsourcing into their programs."