

# The Thriving Earth Exchange: Using Earth and Space Science to make a Difference

ESIP Rant and Rave  
13 October 2015

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# Call For Solutions

- For Earth and Space science data that advances community priorities
- Projects done with community partners
- Winners receive **\$15,000 in Amazon Web Service Credits** to move their solution to the cloud
- Winners featured at an “unhackathon” to share codesign strategies
- **Deadline:** 16 October (+2 weeks)
- **[www.thrivingearthexchange.org/sharing-solutions](http://www.thrivingearthexchange.org/sharing-solutions)**

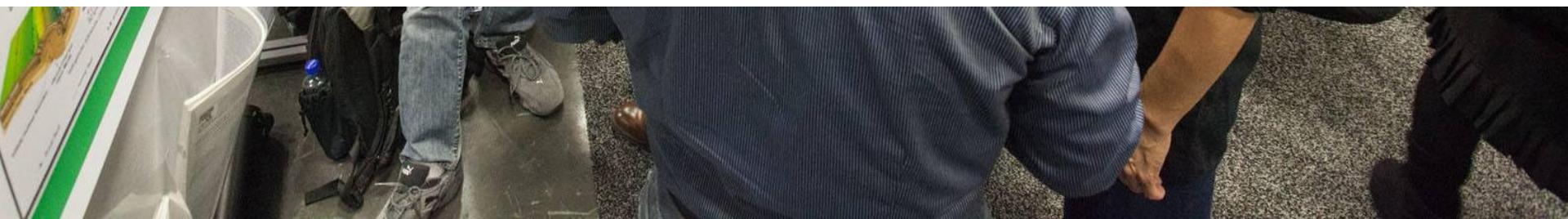
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We promote discovery in the the  
Earth and Space Sciences







for the benefit of humanity







Community Science

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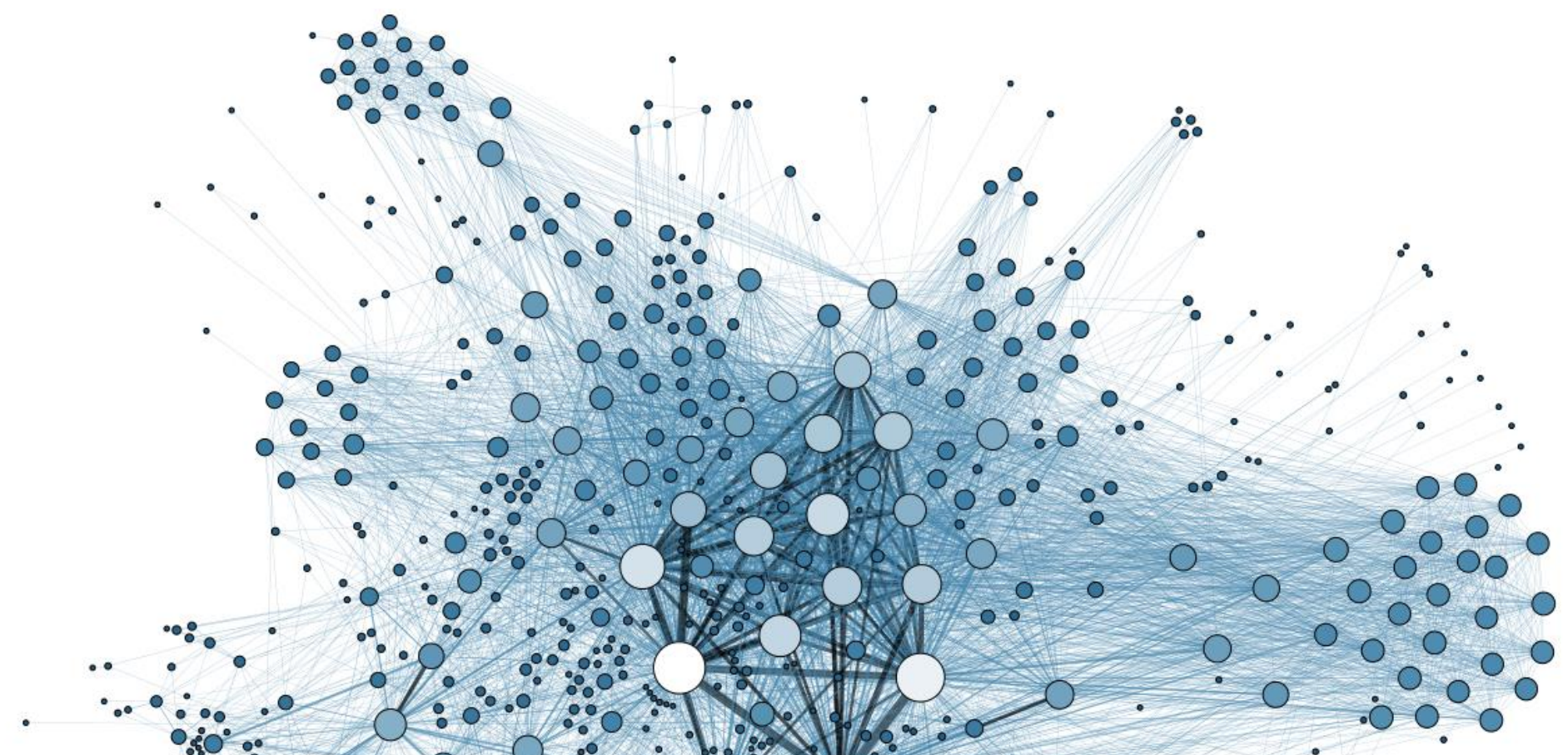


Last Mile

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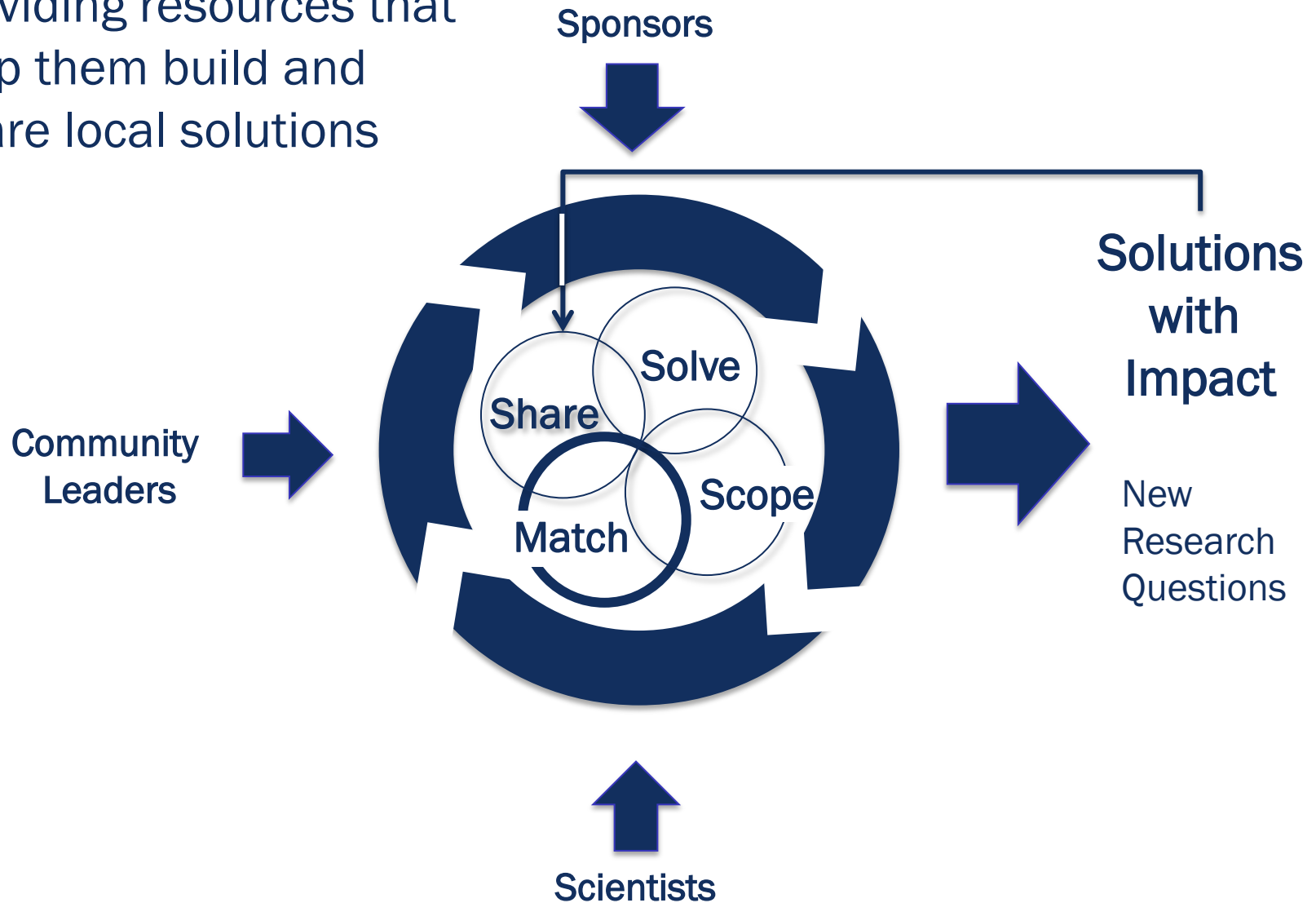


Exchange

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**Exchange**, connecting scientists, community leaders and sponsors providing resources that help them build and share local solutions







# Integrating Met Data for Improved Water Management

Barren River, KY

# Learning from Pilots

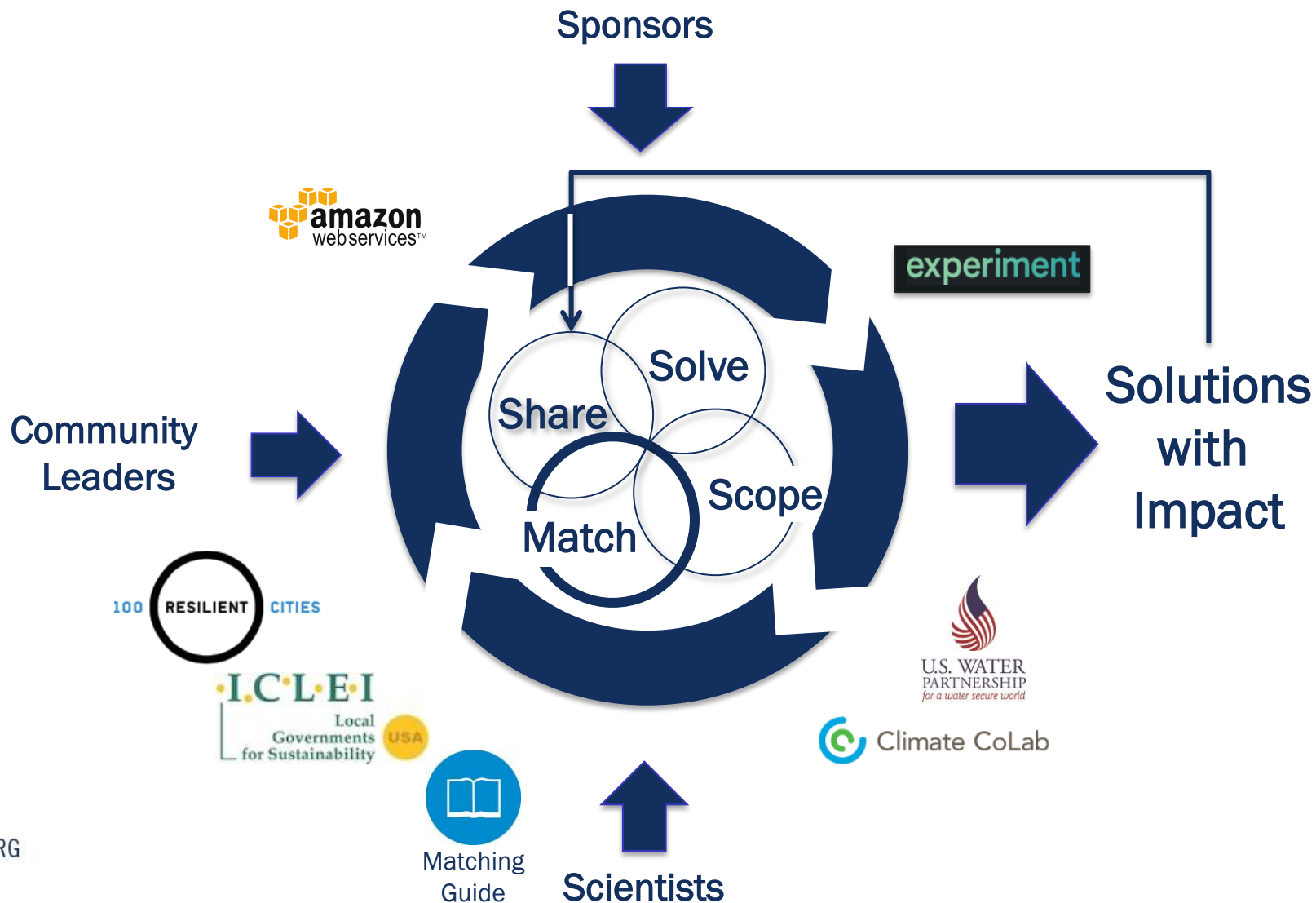
What we learned	How we responded
Connecting with community groups is time intensive; not all are ready for TEX	Work with partners who can introduce us to TEX-ready groups
Many, but not all, AGU scientists have the right skills for community work, even if they haven't done it	Identify scientists with strong collaborative skills and provide modest coaching
Community groups want partners first, solutions second	Focus on matching, then help teams leverage tools, solutions, and resources
Community priorities and academic rewards can be misaligned	Make TEX work pro-bono; define scientist role carefully



# 2014-2016: Scaling Up

- Develop partners that expand TEX's reach and offerings
- ***Start with Match:*** Help community groups and scientists connect and complete impactful projects
- Use high-touch interaction with people to design infrastructure people can use more independently

# Partners Extend TEX Capability





An aerial photograph of Washington, DC, showing a dense urban landscape with numerous buildings, streets, and green spaces. The Washington Monument is visible in the distance, standing tall among the trees and buildings. The Potomac River is visible in the background, with a bridge crossing it.

# Partners to help us *Match*

**Washington DC:** heat-resistant development

**Granite City IL:** engaging community members in air quality monitoring

**Horn of Africa Regional Environmental Center** looking for remote sensing expertise to guide water and land use management

# Partners to help TEX projects *scope* and *solve*

The screenshot shows the Climate CoLab website interface. At the top, there's a navigation bar with links for 'About', 'Contests', 'Community', and a search bar. Below this, a proposal titled 'Anticipating Climate Change in the Pamir Mountains' by 'mattbarlow' is displayed. The proposal is about 'Linking Climate Information to Ecological Calendars: An Appointment With Drought'. It has 1 contributor, 4 comments, and 2 supporters. The proposal summary states: 'The goal of the proposed work is to increase understanding and preparation for drought and climate change in the Pamirs, by using drought as a focal point for linking local human ecological calendars to large-scale climate variability and change.' The motivation and opportunity section mentions that the investigator team has conducted considerable research on regional drought variability and predictability for Central-Southwest Asia, which includes the Pamirs. The contest is 'Anticipating Climate Change in the Pamir Mountains'.

Climate CoLab

Proposal for [Anticipating Climate Change in the Pamir Mountains](#) by [mattbarlow](#)

Linking Climate Information to Ecological Calendars: An Appointment With Drought

DESCRIPTION CONTRIBUTORS 1 COMMENTS 4 EVALUATION

Show history

2 supporters [Support proposal](#)

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PROPOSAL SUMMARY

**Linking Climate Information to Ecological Calendars: An Appointment With Drought**

**Team Proposal:** Only members that you invite as contributors will be able to edit this proposal. To open this proposal for anyone to edit, click Save below and open the proposal's Admin tab.

By: [mattbarlow](#)

**Contest:** [Anticipating Climate Change in the Pamir Mountains](#)

How can traditional ecological calendars used to guide agricultural activity link to climate science so as to anticipate climate change in the Pamir Mountains?

The goal of the proposed work is to increase understanding and preparation for drought and climate change in the Pamirs, by using drought as a focal point for linking local human ecological calendars to large-scale climate variability and change.

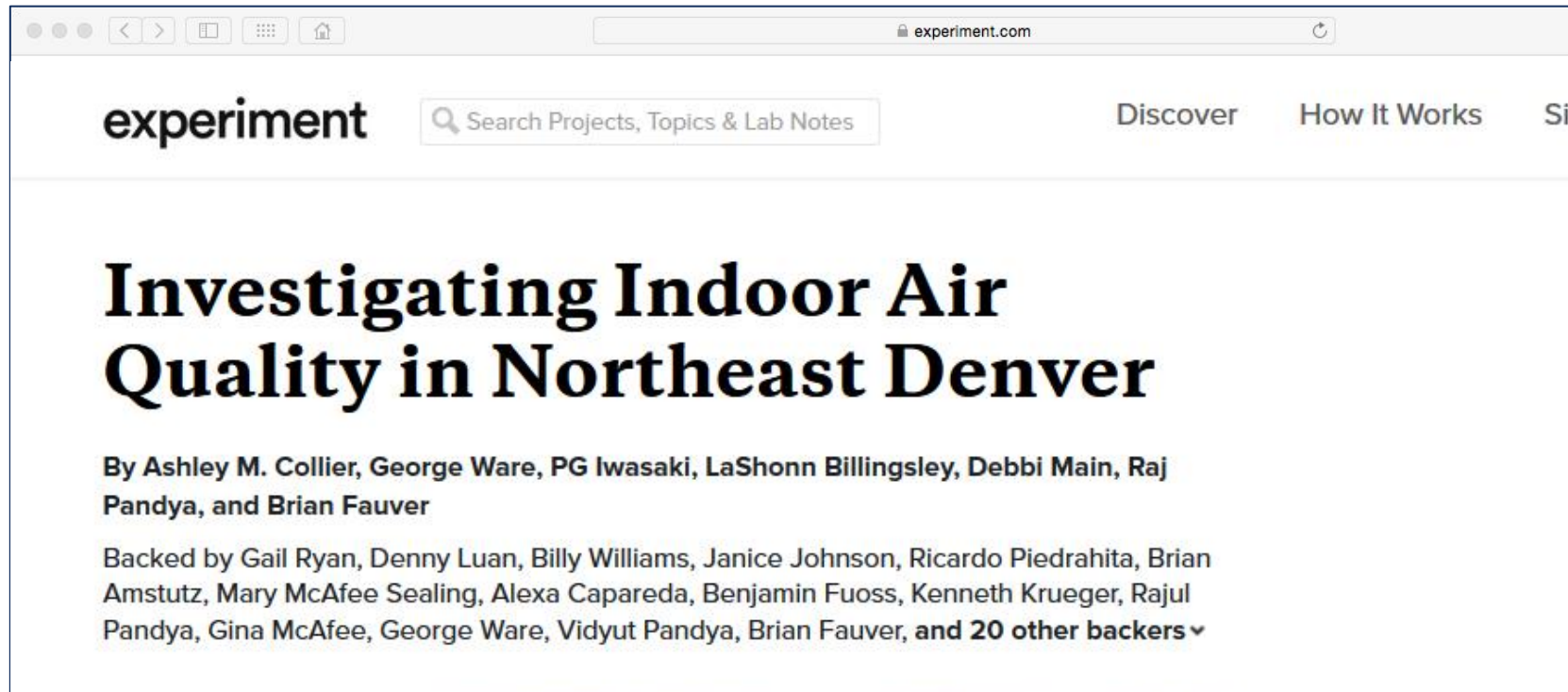
**Motivation and opportunity**

The investigator team has conducted considerable research on regional drought variability and predictability for Central-Southwest Asia (references 1-15), which includes the Pamirs. The combination of this regional climate information, the local ecological indicator work of Dr. Kassam's team, and the availability of historical station records and satellite data for Tajikistan

Climate Colab hosted our Pamir Mountain Challenge, generating 16 proposals for using climate data to adapt local calendars.



# Experiment.com: Crowdfunding to help TEX projects *solve*



Denver neighborhoods and University of Colorado researchers are **crowdsourcing** to raise money to test new low-cost methods to test for leaked dry cleaning chemicals



**\$4,250**

Raised

**100%**

Funded on 8/26/

# Amazon Web Services: Cloud Services to *share* TEX solutions



**CALL FOR PROJECTS**  
Deadline: 16 October

Using Earth and space science  
and cloud computing  
to advance community solutions



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# Sample Projects



Tools to enable citizens to collect air quality data and identify pollution hot spots.



Using climate model data to help city planners mitigate future heat vulnerability.



Water decision tools that use local mesonets

# Competitive Solutions:

- Development team includes city or community member(s)
- Address a local need
- Use Earth and space science data or models
- Make a measurable Impact.
- Are relevant to other communities
- Development team has the capacity to work in the cloud
- ***One winner for best student-led team***



# The Judges

J.R. Killigrew  
ICLEI USA

Kathleen Bogan  
National Integrated Drought  
Information System

James Pizzuto  
University of Delaware

Brad Dispensa  
Amazon Web Services

Vijay Raghavan  
Cisco

Mahmud Farooque  
University of Arizona

Yang Hong  
University of Oklahoma and Tsinghua University





# Questions?

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