

## AGU 2015 Climate Literacy Session Proposal Ideas

**Session Proposal Deadline - Wednesday, April 22, 2015**

**Session Proposal Link: <http://fallmeeting.agu.org/2015/sessionproposals/>**

Add your name to the list of people interested in participating. If you suggest an idea attach your name to that also.

### **Interested People - please add your name:**

1. Tamara Ledley - TERC
2. Rebecca Anderson, ACE
3. Pat Harcourt MADE CLEAR
4. Mona Behl, Georgia Sea Grant College Program
5. Dave Finnigan, Climate Change is Elementary
6. Sudheer Shukla, Climate Change is Elementary
7. Minda Berbeco, National Center for Science Education
8. Frank Niepold, NOAA Climate Program Office
9. Hilarie Davis, TLC, NOAA Climate Stewards Evaluator
10. Laura Faye Tenenbaum, NASA Jet Propulsion Laboratory
11. Nick Haddad, TERC
12. Geoff Haines-Stiles, THE CROWD & THE CLOUD
13. Catherine Carlton, Institute at the Golden Gate
14. Stephanie Pfirman, PoLAR
15. Remata Reddy, Jackson State University
16. Jessica Brunacini, PoLAR
17. Karen McNeal - North Carolina State University
18. John McLaughlin, NOAA
19. Jeff Weber - Unidata
20. Jim Brey - AMS
21. Scott Denning
22. Bob Chen - University of Massachusetts Boston
23. David Lustick - University of Massachusetts Lowell

### **SESSIONS BEING PROPOSED FOR 2015 AND POSSIBLE CONVENORS**

**3/25/15 Updated and consolidated list of possible 2015 AGU Climate Literacy sessions and convenors - Each will start with the phrase Climate Literacy:...- NOTE: LEAD CONVENOR MUST BE AN AGU MEMBER (TO SUBMIT THE SESSION PROPOSAL)**

1. K-12
  - a. Pat Harcourt

- b. Ramata Reddy
  - c. Dave Finnegan
- 2. Higher Ed
  - a. Jim Brey
  - b. Scott Denning
- 3. Informal Ed - none as of yet
- 4. Place Based - maybe combine with informal ed -
  - a. Brian Drayton
  - b. Gilly Puttick
  - c. Catherine Carleton
  - d. Jessica Brunacini
- 5. Education Research and Evaluation
  - a. Hilarie Davis
  - b. Karen McNeal
- 6. Misconceptions and Barriers AND Exploring the Challenges of Climate Science Literacy and Lessons Learned from Students, Teachers, Learners, Practitioners
  - a. Minda Berbeco
  - b. Mona Behl
  - c. Nick Haddad
- 7. Networks and Partnerships -
  - a. Frank Niepold
  - b. Jeff Weber
- 8. Culture of Science - maybe combine with #6 -
  - a. Mona Behl
  - b. Laura Faye Tennenbaum
- 9. Bringing Scientists and Practitioners Together - possible union session
  - a. Minda Berbeco
  - b. Laura Faye Tennenbaum
  - c. Rebecca Anderson
- 10. Can the Soil Save Us? - possible science session -
  - a. Sudheer Shukla
- 11. Enabling Effective Collective Impact - Union session

- a. Tamara Ledley
- b. Frank Niepold
- c. Catherine Carlton

**12. Citizen Science Contributions to Sustained Assessments for Future National Climate Assessments - THIS HAS A SUGGESTED REVISION TO BROADEN OUT THE SESSION: Citizen Science for Climate Understanding**

- a. Geoff Haines-Stiles
- b. Lin Chambers (if needed)

3/10/15 Note the list below is generic and can be shaped as the convenors want. Convenors can also add other sessions or we can morph or eliminate any sessions below. For Reference the 2014 final and proposed sessions are listed further down the page.

1. Climate Literacy: K-12

Pat Harcourt: I can be a co-convenor of this

Topics could include Scientist/educator partnerships; climate in NGSS; bringing climate into different grade levels; teacher training in climate; preservice teacher education

Frank Niepold: I would like to join the planning of the K-13 session.

Remata Reddy: I can be co-convenor of this session.

Dave Finnigan: Proposed title for a K-12 sub-session - Programs Helping Schools and Families Take Action on Mitigation. One presentation could be on our program

<http://www.climatechangeiselementary.org> - A progress report on Climate Change is Elementary and the GreenActionCard™.

List of potential presenters in this session is coming by e-mail including educators from the following programs:

Cool the Earth

American Council for an Energy Efficient Economy

Planet EcoSystems

Alliance to Save Energy

Alliance for Climate Education

Will Steger Foundation

Byrd Polar Research Center

US Green Building Council

Project Green Schools

Eco-schools USA

National Wildlife Federation

National Resources Defense Council

Three Birds Foundation

Kidwind Project

Island Institute

National Council for Science and the Environment

For the most part these are action programs, not research projects or academic studies. In that regard they are "leading edge" because they are actually working to solve the problem and would benefit greatly from a research institution taking an interest in their work with the objective of quantifying their results.

## 2. Climate Literacy: Higher Ed

Someone from Second Nature,  
Juliette Rooney-Varga - UMass Lowell?  
Stephanie Pfirman - CCEP-Polar?  
Karen McNeal - North Carolina State Univ?

## 3. Climate Literacy: Informal Education

possibly someone from CCEP-NNOCCI  
David Sittenfeld - Museum of Science Boston

Frank Niepold: given the work the National Park Service and other place-based education organization are doing, we should make sure to include them in the scope of the session. I would include Catherine Carlton, a Program Manager at the Institute at the Golden Gate, who is local to San Francisco and has worked extensively on the topic be added to the work.

Her email is [ccarlton@parksconservancy.org](mailto:ccarlton@parksconservancy.org)

Catherine Carlton: I would be happy to participate in this session - thanks for suggesting us, Frank.

## 4. Climate Literacy: Education Research and Evaluation

Hilarie Davis, Evaluator - NOAA Climate Stewards has educated and supported formal and informal educators across the country to conduct stewardship projects that make a measurable difference. The projects, effects on educators, those involved in the project, and the environment will be discussed.

## 5/6. Climate Literacy: Moving Past the Misconceptions and Barriers

Minda Berbeco, NCSE

Nick Haddad, TERC

Mona Behl?

Climate change is the greatest challenge of our time, and yet common misconceptions about the science and confusion between the science and politics create barriers to understanding, to taking action, or even to teaching the science. We welcome papers that focus on education, social and cognitive research that can tell us about the foundations of these misconceptions and barriers, and how to best address them.

What models are effective in changing both understanding and behavior? How can we best support the

teachers? How can this knowledge be extended to all learners?

#### 7. Climate Literacy: Networks and Partnerships -

Perhaps a CCEP person to convene - maybe a rep from CUSP or CEP

#### 8. Climate Literacy: Culture of Science 0

Mona Behl: I would like to convene this session.

Laura Faye Tenenbaum, I would like to help

*Question: Should we combine #5, #6 (challenges of climate science literacy) & #8 (Culture of Science)? I could see a really rich session that combined these ideas.*

*Answer: After submission of abstracts we can see if it fits well with 5&6 or elsewhere if necessary.*

*From AGU 2014: A fundamental understanding of how science works is critical for any society that is affected by scientific developments and policy decisions that are based on science. Yet many people lack knowledge of basic scientific tenets and approaches. Understanding the culture of science facilitates understanding of the nature of science, changes attitudes of people towards science, and aids in sound decision-making. This session will explore the practice of scientific discipline that constitutes how science is done, development of scientific knowledge, and the role of individuals/groups who are either conducting scientific research or using scientific knowledge. We will delve into questions like what does the culture of science mean, what is the responsibility of scientists in promoting better understanding of science and how does that interact with the culture of science, how can communication aid in understanding the nature of science, and what is the role of the public in understanding science.*

*I can imagine that this could fit in with K12 or informal ed (public education) if necessary (or some of the K12 or Informal sessions could fit under this topic)*

#### 9. Climate Literacy: Can the Soil Save Us? - possible science session

Sudheer Shukla: I would like to help organize this.

Preliminary Abstract: Much of the focus on mitigating climate change has focused on reducing carbon emissions, i.e., controlling the sources of emissions. But there hasn't been much attention paid to sinks, especially our soil. Our soil has a great potential to absorb carbon dioxide which hasn't been tapped into. There are currently about 800 Gigatonnes of CO<sub>2</sub> in the atmosphere, while there are 2400 Gigatonnes of CO<sub>2</sub> in the soil. And it is estimated that more CO<sub>2</sub> has been lost from the soil due to less than ideal agricultural practices than is currently in the atmosphere. Putting into practice agricultural methods such as those discussed in the Geotherapy research compendium below may, if pursued to their full potential, be a significant tool in mitigating and perhaps even reversing global warming and climate change. These kinds of agricultural practices were also discussed at a conference at Tufts University on November 21-23 of 2014 entitled "Restoring Ecosystems to Reverse Global Warming." The program, video and slides from that conference are at the following link:  
<http://bio4climate.org/conferences/conference-2014/program/>

**It is to be emphasized that these agricultural practices are to be pursued in addition to and not instead of reducing emissions.** We need to have an “all of the above” strategy in mitigating climate change, and cannot afford to ignore anything that could be part of the solution.

Possible source of papers: Geotherapy: Innovative Methods of Soil Fertility Restoration, Carbon Sequestration, and Reversing CO2 Increase  
<http://www.crcpress.com/product/isbn/9781466595392>

10. Climate Literacy: Bringing Scientists and Practitioners Together -- I'd love to put together a Union session that's broader interest and brings together scientists who are interested in climate literacy / communication with those on the education side. -- Rebecca Anderson

Minda is also interested in this session!

Laura Faye Tenenbaum, I would also be interested in helping this one too

**Just a thought - would this be better as a townhall or workshop of some sort so it could be more interactive?**

11. Climate Literacy: Enabling Effective Collective Impact - Union session - Tamara Ledley

Frank Niepold: I would include Catherine Carlton, a Program Manager at the Institute at the Golden Gate, who is local to San Francisco and has worked extensively on the topic be added to the work.

Her email is [ccarlton@parksconservancy.org](mailto:ccarlton@parksconservancy.org)

Additionally, I would like to work on this session.

Catherine Carlton: Thanks again, Frank! I would be interested in participating in this session as well. The Institute at the Golden Gate is currently playing a “backbone” role to a newly developed climate literacy collaborative in the Bay Area. We would be happy to be a part of this session and speak to that experience.

Possibly contact Kania and Kramer to give a talk on this. ReAMP possibly give a talk.

12. Citizen Science Contributions to Sustained Assessments for Future National Climate Assessments.

Geoff Haines-Stiles happy to co-convene. Also John McLaughlin/NOAA.

Inviting submissions from long-lived citizen science (CS) projects such as the Audubon Society's Christmas Bird Count to new initiatives such as “Angler Science” from TROUT UNLIMITED, illustrating how participants in sports and hobbies can generate useful data related to climate change. We could draw on presenters and projects from the recent kick-off Citizen

Science Association meeting, including folks from agencies such as USGS, EPA, NOAA, NASA and more. Invited presenters might be Waleed Adbalati, former NASA Chief Scientist, now heading CIRES/NOAA-UC Boulder, connecting CS to formal science, and Raj Pandya, director of AGU's Thriving Earth Exchange. A goal of such a session would be to include "unusual suspects" as contributors to climate change education, outreach and literacy, and to inform the more traditional AGU audience of "professional scientists" about new and useful citizen resources, providing more geographically-diverse and more temporally-frequent observations.

## **REFERENCE**

### **2014 Final Climate Literacy Sessions**

1. Climate Literacy: Culture of Science AND Broader Impacts Done Well
2. Climate Literacy: Strategies for Talking About Controversial Issues Outside of the Classroom / Preparing Climate Literate K-12 Teachers and Students
3. Climate Literacy: Overcoming Barriers - Research Outcomes and Best Practices for Supporting Education and Informed Decision Making
4. Climate Literacy: Effective Responses and Solutions Through Best Practices in Communication, Partnerships, and Networks
5. Climate Literacy: Approaches to Multi-disciplinary Climate Education in Higher Education Institutions
6. Climate Literacy: The National Climate Assessment as a Resource for Decision-Making and Education at Multiple Scales - Union session
7. AGU Education Workshop: Preparing for Global Change: A Education, Collaboration and Community Engagement Workshop to Enable a Science Savvy Society

### **2014 Proposed Climate Literacy Sessions**

1. Climate Literacy and the Culture of Science: Promoting understanding of how science works
2. Climate Literacy: Anytime, Anywhere Communication - Successful Strategies for Talking About Controversial Issues Outside the Classroom
3. Climate Literacy: Climate Science Broader Impacts Done Well
4. Climate Literacy: Emphasizing Effective Responses and Solutions
5. Climate Literacy: Impacts, Evidence, and Best Practices From Research and Evaluation
6. Climate Literacy: Maximizing Teachable Moments: Best Practices in Communicating Climate Assessments to Decision-Makers and the Public
7. Climate Literacy: Minority Serving Institutions Pre-Service Teacher Preparation in Climate Literacy.

8. Climate Literacy: Overcoming the Actors and Actions that Inhibit Climate Science Education and Informed Decision Making
9. Climate Literacy: Scaling Impacts of Climate Literacy Efforts through Effective Partnerships and Networks
10. Climate Literacy: Supporting a Multi-Disciplinary Approach to Teaching About Climate for a Sustainable Future
11. Climate Literacy: The Challenges of Preparing Climate Literate K-12 Teachers and Students
12. Climate Literacy: The National Climate Assessment as a Resource for Decision-Making and Education at Multiple Scales - Union session