

Education & Diversity Retreat - Follow-up Meeting
Colorado State University
Lory Student Center - Room 224-226
Monday, October 25, 2010
12:00pm-2:00pm



Call in number: 970-491-1209

Meeting Notes

12:00 pm

K-12 Education

LSOP and UCAR collaborations

UCAR and LSOP

Brian updated the team on what was discussed during the meeting between LSOP and UCAR EO on October 19. They met to discuss a variety of continuing and possible collaborations. Brian mentioned that UCAR EO has done a lot of online teacher workshops and LSOP wanted to get ideas on how to do this. Brian also mentioned that there was a lot of discussion about science (e.g., MJO, El Nino, etc.) and ideas that fit well with LSOP's theme of "Time."

Randy talked about the different types of videos that are on the Windows to the Universe website, including Scott's video on GHGs and a few of LSOP's Everyday Science videos. Randy also showed us some of the other videos that show "scales" that are on the Windows site.

http://www.windows2universe.org/earth/cmmmap/cmmmap_videos.html

http://www.windows2universe.org/earth/Atmosphere/aerosol_cloud_nucleation_dimming.html

http://www.windows2universe.org/our_solar_system/planet_size_interactive.html

https://www.msu.edu/~russellr/portfolio/size_machine/size_machine.html

http://www.windows2universe.org/the_universe/uts/eratosthenes_calc_earth_size.html

Scott put out a video idea similar to the Powers of 10 Video that has been shown in classrooms for years. He would like to work with Randy and Brian on creating something similar about clouds, cloud droplets, etc. Also a possible video that was about climate. Starting with paleoclimate and continuing to present climate and climate change. This would hopefully illustrate the differences between natural and anthropogenic changes.

LSOP's theme for next year is "Scales." Posed a few questions to the group to think about.

1. Where are scales important?

2. Where can you transcend scales?

Dave S. and Jan mentioned that K-12 kids have a hard time understanding scales (logarithmic vs. linear scales, etc.) and it would be helpful to have more info around these concepts.

K-12 State Standards

Jan Lanting

Jan discussed some of the changes that are occurring with the K-12 standards both Nationally and in Colorado. She provided us with a handout that focused on some of the Science Changes, I've attached the full document for everyone to reference. Colorado has already adopted the new Common Core Standards for Math, English, and Language Arts. Jan mentioned that since the Science standards haven't been fully adopted as of yet, CMMAP has a unique opportunity to contribute to the pieces involving the earth sciences. Jan will keep us posted on the changes and left us with a quote from someone in her district who said that "Science is less of a file folder and more of a neural network," it is important to prepare teachers. CMMAP's teacher course is doing a really good job of this!

Dave S. has been attending some workshops on standards that have been presented by the Colorado Alliance for Environmental Education.

CGCC

Brent Waugh

Brent informed the team that the next Colorado Global Climate Conference will be held on Monday, October 17, 2011 in the Lory Student Center at Colorado State University. We hope to have 500 students participate in this event. Over the past few weeks, Brent has created a Planning Committee for the event and they've met 2 times so far. They hope to pick a keynote speaker in the next few weeks. Possible candidates are Mike Nelson and Heidi Cullen. Brent mentioned that the Planning Committee is going to start looking into breakout speakers, focusing on presenters who can be engaging with the students. The quality of speakers is more important than the quantity.

12:45 pm

Higher Education and Public Outreach

Policy Outreach

Michele Betsill

Michele has invited Pam Doughman from the State of California Energy Board to give a presentation at the CMMAP Team Meeting in Berkeley. Pam's background is in Environmental Science and Policy and she is really interested in CMMAP's research and education. She will give a plenary talk at the Team Meeting and hold a session with graduate students on the science policy frontier and where they fit in. Michele and her 2 graduate students funded by CMMAP (Linse Anderson and Sam McGraw) put together a list of boundary and government organizations that

fit within the intersection of water and climate issues. She would like to go over these organizations with Dave and Scott to see if they have any connections and possibly start a dialogue.

Scott talked about a new Climate Center that will be housed here in Fort Collins as a potential collaborator for CMMAP.

http://www.collegian.com/index.php/article/2010/10/102610_csu_named_as_host_of_national_climate_center

<http://www.coloradoan.com/article/20101022/NEWS01/10220326/CSU-to-lead-Climate-Science-Center-initiative>

Michele is hosting the Colorado Conference on Earth System Governance in May 2011 and has received over 350 submissions from 38 countries. There are some possible CMMAP connections and maybe CMMAP could be a sponsor. Graduate students could present posters or participate in breakout sessions.

More info can be found at <http://cc2011.earthsystemgovernance.org/>

Climate Concept Inventory

Melissa Burt

Howard is working on putting together a draft for this. The idea came up at a previous meeting based on what has been done in Physics.

Graduate Student Council

Melissa Burt

Melissa talked about forming a graduate student council for CMMAP students. Mike Pritchard, CMMAP graduate student at Scripps, attending the STC Directors Meeting in and met with Graduate Students from the 17 other Science and Technology Centers. Possible ideas for the Graduate Student Council would be members would plan the Grad Student Colloquium, participate in E&D meetings and create a Student journal Club, where students at the CMMAP institutions would get together and discuss journal articles and their research via video conferencing.

1:00 pm

Diversity

ATS Interview Study

Silvia Canetto

Silvia updates us on the progress of the ATS Interview Study. The interview study is continuing slowly, but there is some progress. Silvia will be meeting with LSOP on October 26, to discuss her results that looked at the FOSS Kits. The basis of this work was to look at the representation of scientists in these kits for elementary students. Results of this study could be useful for LSOP and further

development of their materials. A paper has been submitted to the Journal of Women and Minorities in Science and Engineering on the research done with the FOSS Kits. Silvia can provide us with a copy of this paper.

OEDG Proposal

Scott Denning

NSF Solicitation: Opportunities for Enhancing Diversity in the Geosciences

NSF was calling CMMAP for this proposal!!

Summary: Colorado's communities are experiencing rapid change due to environmental problems associated with climate change. Changes in water supply, agriculture, energy costs, tourism, and public health threaten livelihoods and civic well being in many parts of our region. Many of the most vulnerable members of these Colorado communities come from groups historically underserved by and underrepresented in the sciences. Unfortunately, the phrase "climate change" has been politicized and many students, including students from underrepresented communities, don't realize the opportunities they have for education and career choices that can help themselves and their communities cope with these changes. We plan to work closely with four Colorado communities with a focus on minority members of these communities to assess their attitudes and concerns about these changes, and to actively promote higher education and career opportunities that can help these communities more effectively address their concerns.

We will propose a Track 2 (Full-Scale) Project to: Engage diverse communities in a dynamics discussion about changes in the local environment and their communities; Partner with community members, school districts, extension offices, and community colleges to set up a compelling and relevant science summer camp for high school students from those communities; Recruit students for both two- and four-year undergraduate programs in geosciences with financial and retention support in cooperation with the Colorado Alliance for Minority Participation; Support diverse students in summer internships studying climate and global change through SOARS and CMMAP; and recruit and retain diverse students into graduate programs through the Alliance for Graduate Education and the Professoriate and CMMAP. We will study and evaluate the programs and report on our results through the peer-reviewed literature on education and diversity.

1:30 pm

Goals of CMMAP Education and Diversity

Draft Overall Goal of CMMAP: USABLE CLIMATE SCIENCE (Raj Pandya)

To ensure that individuals and communities (especially those communities that are underserved by climate research and individuals who are part of groups that have been historically under-

represented in science) understand climate change and its impacts and use that understanding to in personal and community decisions.

Goals by Educational level	Activities	Diversity	Assessment	CBPR
K-12: students understand climate change and use that understanding in personal choices	LSOP; CGCC; W2U; Teacher training	Are we reaching representatives from all communities and engaging many different communities? Do the activities work for students	Are students revising/adding to existing knowledge; Are they able to apply that knowledge to their lives	Do these strands at various levels support community-based participatory research and education? Can community
Undergrad: Climate change is understood as something relevant to careers in and out of science	Climate for Poets; Climate Change @ CC; Internships	from different groups? Are there choices and options relevant to all communities?	Can students connect climate change to career paths? Do students understand key concepts and connect them to their lives?	priorities inform the educational activities and evaluation? Can these priorities work into course design? Can working with communities be part of graduate and
Graduate School: a future scientific workforce with the skills and knowledge to engage in and support community planning around climate change adaptation and mitigation	Graduate Training; Fellowships in "boundary organizations"		Do graduate students have skills to work successfully with communities? Is there a market for these skills?	undergraduate experiences?

This is a great draft of the overall goal of CMMAP. It is also really hard to put everything under one umbrella. Questions that were posed during the discussion:

**Should we keep this about climate change? or make it more broad
Should we expand to include informal education, policy outreach?
We want to make sure it has both breadth and depth at the same time.
Should we separate it into scientific literacy and climate?**

Dave's Goal: People will think of science not as a separate realm but as a part of life.

1:45 pm

Winter Team Meeting Discussion

Brian mentioned that he would like to have a session with CMMAP Team Members to discuss what the important pieces are of science. This has been very helpful in the past but would like to have more of a formal session over refreshments.

We will be having another all day retreat for Education and Diversity. We welcome all CMMAP team members to this retreat. Would be good to have discussions on topics for the Grad Student Colloquium, Evaluation of E&D activities, with Pam Doughman, goal of CMMAP E&D, etc.

**** Please send me other agenda ideas for the retreat.**

2:00 pm

Adjourn

Upcoming Education and Diversity Activities

Winter Education and Diversity Retreat: January 10, 2011

Winter CMMAP Team Meeting: January 11-13, 2011

AMS WeatherFest: January 23, 2011

Little Shop of Physics Open House: February 26, 2011

Berkeley, CA

Berkeley, CA

Seattle, WA

Fort Collins, CO