

## NOAA Education Council Meeting

Date/Time: September 14, 2011 (1:00–4:00 pm)  
 Location: SSMC3, Room 14836  
 Dial-in: 866.901.0711  
 Passcode: 8134683  
 Contact: Luis Leandro - work: (202) 482-3139

Adobe Connects Link to Meeting: <http://connectpro46305642.adobeconnect.com/edcouncil/>

**\*\*Important Note Regarding Audio:** Unless you have a PC headset with a microphone, please remember to mute or turn off your computer speakers when you call-in to avoid sound interference. If you have a PC headset, you will be able to connect directly through your computer and participate in the meeting as normal, without needing to dial the number above through your phone.

## AGENDA

- 1:00 Welcome/Opening Remarks
- 1:10 Update on National Framework for Sciences – Heidi Schweingruber (*informational*)  
(15 min presentation/15 min discussion)
- 1:40 Ocean Acidification NODE Module: Product, Teacher Workshop and Evaluation – Paulo Maurin (*input request*)  
(15 min presentation/15 min discussion)
- 2:10 Updates & Announcements

## Upcoming Council Meetings:

October 12, 2011  
 November 16, 2011

## Attendance

**In person:** Louisa Koch (LK), Marlene Kaplan (MK), John Baek (JB), Jennifer Hammond (JH), Bob Hansen (BH), Molly Harrison (MH), Atziri Ibanez (AI), Nina Jackson (NJ), Judy Koepsell (JK), Meka Laster (ML), Luis Leandro (LL), Chelsea Lowes (CL), Michiko Martin (MM), Paulo Maurin (PM), John McLaughlin (JM), Christos Michalopoulos (CM), Bruce Moravchik (BM), Maria Murray (MMu), Dan Pisut (DP), Rochelle Plutchak (RP), Bronwen Rice (BR), Heidi Schweingruber (HS), Peg Steffen (PS), Shannon Ricles (SR).

**On the phone:** Stephanie Bennett (SB), LuAnn Dahlman (LD), Joanne Flanders (JF), Eric Hackathorn (EH), Paula Keener-Chavis (PKC), Carrie McDougall (CMc).

## Announcements (LK)

- Introduce Rochelle Plutchak as the new representative for OAR.
- Introduce NOAA Education Evaluator, John Baek.

## Update on National Framework for Sciences – Heidi Schweingruber (*informational*)

See *PowerPoint*.

- LK: Heidi was instrumental in the review of NOAA Education.
- PS: Heidi is the Deputy Director of the Board on Science Education at NRC. She is the co-director of the NRC study to develop a framework for K-12 science education. Her experience in the field is extensive.
- MK: Could you explain more about how the states are involved?
  - HS: Achieve has assembled expert teams and is partnering with selected states who applied to work with them. Thirty states were interested, and 20 applied. In a couple of weeks, Achieve will describe this process on the web and announce which states were chosen as partners. This core group of states will be the main collaborators. The states will ground truth the framework and set boundaries for what will work for the states.
- HS: We would like NOAA to think about shifting its work to align with the Framework.
  - MK: Is this something we could phase in? We could look at what we have now that already aligns and then think about how to align other things in the future.
  - HS: Absolutely. You will have at least a couple of years to figure out how this can be integrated.
- PS: Could you talk about the timeline?
  - HS: Stephen Pruitt at Achieve is coordinating this. The website will be available in the next few weeks. The title is Next Generation Science Standards. It isn't like the common core standards. We are intentionally making this process more open and collaborative. Maybe by next December the standards will be out.
  - LK: Steve Pruitt came to the Climate Change Education workshop a couple weeks ago. He said there will be two rounds of reviews: one in early 2012 and one in mid 2012.
- JB: To what extent might this inform undergraduate education?

- HS: Certainly we hope it will inform pre-service teacher preparation, but it might not have the leverage to influence other aspects of undergraduate ed. It should be valuable for introductory science courses and science courses for non-majors.
- PKC: I thought Peg was involved in representing the Council.
  - PS: No, I wasn't representing NOAA, but was involved in CS-cubed and with NSTA.
  - MK: We specifically commented on the initial draft from NMEA last summer. This was Craig Strang and others. There was a large ocean community voice.
  - LK: There were also climate comments.
  - PKC: Sarah Schoedinger and others presented a great webinar on an update of Ocean Literacy and gave an overview of this document. I was trying to connect where we are as an agency with providing input.
  - PS: There were significant changes to the Framework due to the ocean community comments.
- PKC: Is the committee disbanded or still functional?
  - HS: The committee has disbanded, but many members are active in continuing to represent this individually. Some committee members rolled over to work on the Standards.
- PKC: I see that NASA was the only federal agency that was represented.
  - HS: There was no effort to have federal representation. We were looking for people with expertise in certain areas who are also National Academies of Science and of Engineering members.
- LK: I'd like to look at how to connect NOAA products to the Framework.
  - HS: There is a way that you could think about linking curricula, instruction, and assessment to the Framework, but the diagram on the slide is overly simplified. The core elements are not going to change, but may shift in grade level.
  - LK: On pages 9-10, we know what our core science ideas are. If we study these science and engineering practices and crosscutting concepts, these are familiar to us and can be woven into our products.
    - HS: Think about integrating concepts through practices. The facts may not necessarily be sufficient. I'm not suggesting that it is a complete redo, but a chance to take stock.
    - LK: I think we are ahead of the game with all our literacy standards. NERRS has been leading the effort in developing datasets that students can work with. The people around the table have a lot they can add. I want to look at how we would start working on this.
    - PKC: We are aligning our curricula with the Framework. The prior standards would be going backwards. We've found it's pretty easy to do this when you look at the kinds of things they are asking educators to do to engage the students. We've developed the template to document the alignment.
    - LK: Can you give us an example of how you are aligning it to the Core and Component Ideas on slide 22. Is anyone else working on this?
    - AI: We are starting this. There are some elements that align well and others that don't, where we need to do some work.
- JB: What wouldn't be aligned?
  - HS: A lot of textbook presentations are focused on reading and understanding, but not about how to do science. Simply informational materials are not going to cut it.
  - PS: NOAA is very good at providing information but not the practices. Bruce and I are going to wait to align to the Standards before we go through the considerable effort of aligning and reworking. We're not sure it's worth the time to retool things to this Framework. Any new material will align and go through this effort, but we won't work on older materials right now.
- PKC: Do I understand correctly that every state will be able to use this to create its own state standards?
  - HS: No, the states are collaborating to make a single document of common standards. They will not have the same flexibility they've had in the past.
  - LK: Thirty states were interested and 20 applied to work with Achieve to develop the Standards. Achieve will select a subset of these, but Steve Pruitt said they would work with any state that is interested in adopting the standards. This is why they have 2 rounds of review. Is there an effort to develop common assessments and curricula?
  - HS: Yes. There are now consortia designing assessments on common core standards.
  - PS: About 45 states have signed on to the common core math standards.
- PKC: Is it the right way to go to start aligning to the Framework, and then in a couple of years the core Standards will be used enough that our materials could be drilled down to the Standards level?
  - AI: We are looking at this very carefully, but are not actually doing the correlation. We will try to wait as long as we can for the Standards. My recommendation will be to wait.
  - MK: It is still good to look at the top level of how things relate.
  - PS: Some of the older documents and standards are still useful. There will be some things carried over.
  - HS: This is intentional. They are still useful.
- LK: Do you think it would be useful for federal agencies to get together and endorse the standards?
  - HS: Absolutely not, because there is tension about federal control. It would be seen as federal standards.
- LK: I got the sense there was a tap dance around human ancestry and evolution and possibly around climate and climate change.
  - HS: There was no tap dance around human evolution. There was discussion about how to handle human evolution and climate change. The feedback we've gotten was that they were happy to see these topics in the document because the document becomes leverage against those who want to fight their inclusion in K-12.
- MK: Do you have thoughts on what we should do with grant money?
  - HS: Perhaps curriculum instruction and teacher PD.

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**Ocean Acidification NODE Module: Product, Teacher Workshop and Evaluation – Paulo Maurin (*input request*)**


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See *PowerPoint*.

- AI: Anybody who is interested in developing a NODE module can do this. We were working with a specific set of contractors, who came up with the framework. It is easily transferable to incorporate additional modules. We discussed with Sanctuaries and NODC to have a curriculum map to represent things in a more cohesive way and from an Earth Systems perspective. We just haven't had the funding to do this.
  - In terms of housing the .gov website, the OEd through Steve has expressed willingness to help us host this. This is a product that is advancing data literacy. It has been in the cue for transition. We would like it to be coordinated with education.noaa.gov.
- MM: One thing that made us want to get involved is the frustration we felt when scientists thought it was enough for understanding to just make the data available. There is a solid foundation of formative evaluation. We are talking about adopting this philosophy of how to present data.
- PM: It is a value added approach. For the coral bleaching module I am getting ready, we spend a lot of money to get the data from the satellites and make it ready for managers. With just a little more effort, the data can be prepared for education.
- AI: We are not done with evaluation. We want to get more people involved to figure out how to take this to the next level. Who is interested? (MH, CM, PS, NJ, DP, JMc raise hands.)
- PS: I think this ties in well with Heidi's presentation. This is one of the best products we have in looking at scientific practices.
  - CM: I totally agree. I think there is great potential for NODE to be the best product for NOAA to align to the Next Generation Science Standards. I do think there are serious road blocks for implementation in the classroom due to the way science is taught in the classroom. We may want to consider a holistic evaluation of how this can be implemented in the classroom. Perhaps the next step is a more thorough study rather than creating additional modules. There are many connections with GLOBE, which has a piece called FLEXE to teach the scientific method including peer review by looking at deep sea biology.
- PM: I see a lot of extensions, like GLOBE and the ROV. I would like to have a tablet-ready product where students will be able to work with the data on their own tablet.
- PKC: At a conference, there was a conversation about using data in the classroom with some discussion on using NOAA real-time data in the classroom. It would be nice to track the data back to the program that produces/collects the data so they know what we are doing as an agency.
  - AI: You can do this at various different levels. The water quality module talks about the NERRS system. For each module we talk about where the data comes from.
- NJ: We have identified teachers that use satellite data in their classrooms. We do a couple workshops a year on using remote-sensing data.
  - PM: We could probably use these teachers as the test-bed.
- LK: You said FN has wanted this module to go through the CLEAN process.
  - PM: They have gone through the review process. They are recommending a couple of the modules for teaching data literacy and scientific understanding.
  - LK: CLEAN is an NSF-funded process where they look at all curricula to determine which are quality. What's important for this conversation is that they have a pretty clear set of criteria for determining quality material. It is significant that NODE made it through this process. One of the big things that came out of the Teacher Research Experiences conference is that people need to publish more about what makes material successful. We need to be connecting to National Science Standards, CLEAN, and others.
  - MM: Caroline Joyce is a professor at UW-Madison who uses NODE in her pre-service classrooms. I don't know if she published on this and has since retired. We tried to push her to publish this.
- MM: One of the limitations of this approach is that this is not curriculum that you can just make available. Teacher professional development is essential. We have been limited by this. It may not be the panacea.
  - JMc: Does this need to be in-person or is there an effort to do distance PD?
  - MM: All of ours have been in-person.
  - PM: We have done a lot of evaluation, but haven't evaluated beyond our 4-hour PD. We do some short in-person training as well.
- AI: I would add something to the scaffolding approach. You must also have the data and in the right format.
- DP: There is a lot of commonality in efforts going on around NOAA to visualize and make data available. There is a huge scale issue to which we don't have an answer.
  - LD: While I worked at TERC, they have a product that is like My NASA Data. There are a lot of models out there. Today we are doing an NSTA webinar about using data and visualizing it.
  - PS: NOAA has a lot of data that could be used in these kinds of products.
- AI: I started working with Shannon and the CBO a while back to figure out how to make data accessible. They are at the stage where they will release a curriculum on using the Chesapeake Bay Buoy system data. This is very impressive with additional tools, and is quite different. For example, it allows for tracking what students are doing and uses real-time data. NODE is entry level. There are multiple models on using data.
- PM: If anyone is interested in seeing the process of developing a NODE module, you can observe our progress that we'll start for the coral bleaching module in a couple of months.

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**Updates and Announcements**


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- None were submitted for the record.