

Math and Science Advisory Council Meeting on 8/14/2009
Cooperative Education Services Building, Albuquerque
Meeting began at 10:00 am.

In attendance: Franny Dever, Brian Every, Laura Crossey, Kimberly Thomas, Toney Begay, Richard Nygren, Robert Eisenstein, Kathryn Watkins, Patricia Wagner, Marie-Elena Reyes, Rebecca Kerr, Marshall Berman, Jonathan Wolfe

Guests: Rick Scott, Anne Madsen

Franny Dever, as the Council chair for 2009-10, welcomed all in attendance and briefly reviewed the day's agenda.

Joyce Kaser, Council Facilitator, led an activity designed to allow members to introduce themselves and set the tone of convivial collegiality.

Mary Jo Daniel distributed a Council contact list and asked all to provide any updates or corrections.

MSAC "Norms"

Joyce distributed and reviewed the group norms that have been in place for the last two years. She emphasized the expectation that everyone will attend all meetings and to notify Franny if you will be absent. Furthermore, it is expected that everyone will attend the entire meeting; problems have arisen when participants leave early so that items late on the agenda cannot be addressed by the full Council. If members find participation on the Council is not a positive experience, they are encouraged to let Mary Jo, Joyce or Fanny know so that concerns can be addressed. During discussions, name tent cards are used to indicate you want to speak; the discussion leader or facilitator will call on people in the order their tent cards are turned on end. Every attempt will be made to get reading material sent to members in advance of the meeting. Mary Jo stated she will post information, minutes and other materials can on the MSAC tab of the Bureau's website (www.ped.state.nm.us/mathscience). She will email the Council when major postings are made.

After discussion, it was decided that the next meeting will be Friday, September 18 with meetings to be held on the third Friday of every other month. A list of dates is at the end of these minutes.

Math and Science Report

A clarifying question was raised about the NMSBA; while a new vendor is being selected, the items that have been developed to date are owned by NM so the test should not change significantly. Each year 25% of the items are replaced. The Math and Science Report is posted on the MS Bureau web site.

Reviewing Science Standards

Mary Jo distributed copies of the current *Standards* for Science and introduced the topic: these *Standards* were approved in 2003 and *NM Project 2012* calls for a review/revision of *Standards*

no less than every six years. The Council was asked for input and, if possible, a recommendation on whether the *Standards* for science should be revised at this time. There is nothing in statute that requires periodic review of Standards but internal PED procedures call for assessing if there is reason to do this; a recommendation for science is due by the end of September. A summary of input received to date was also distributed.

The ensuing discussion raised several points:

- Current *Standards* for science have now received an “A” rating from three separate national reviews
- Revising *Standards* will likely reopen the evolution/creationist/ID debate
- Minor revisions (“tweaking”) could be made to correct errors and omissions
- Revising *Standards* would be time-intensive; efforts could be better spent on other tasks
- Teachers who were polled generally approved of current *Standards*
- Issue of implementation of *Standards* is more pressing than revising them
- *Standards* for math and science need to be correlated and connected
- Verbs such as “know” and “understand” are too vague and could be changed in a small revision effort
- A previous efforts to make minor revisions (“tweaks”) to the math *Standards* was unsuccessful because the committees exceeded the boundaries of the task

The Council was able to reach consensus that they do NOT recommend a full revision of *Standards* for science. However, there was insufficient information on what a minor revision would entail or how it would be done to reach consensus on whether any revision should be carried out.

NM Project 2012 Update

Bob Eisenstein reviewed the legislative actions taken last year and distributed the legislative proposal he prepared for Secretary García for 2010. The 2010 recommendations follow directly from the Legislative requests made last year which were not enacted. In summary, they are:

- A study of the economic and other impacts of a requiring professional development for all teachers and administrators (as called for in NM Project 2012) including the impact of a study of the "180 days of yearly instruction" rule and other relevant legislation.
- An appropriation that the "Reading, Math, and Science Summer Institutes" professional development program be continued at current funding levels (approximately \$2,500,000/year).
- Establishment of state-wide common course titles and content descriptions for all K-12 math and science courses in New Mexico.
- Development of a staged, multi-year plan to improve and to equip high school laboratory facilities.
- An appropriations bill to provide incentives to professional STEM volunteers, and to schools, in order to begin utilizing New Mexico's extensive community of STEM professionals in K-12 math and science learning. The bill should also include a State contribution to the establishment of a public awareness campaign regarding the importance of math and science to the citizens of New Mexico.

Mary Jo reported that the Secretary said the requested appropriations will be considered later, but approved the course titles and descriptions and lab facilities legislation to be forwarded to the Executive for consideration. The Secretary suggested the study of impacts of required professional development could be done without legislation.

Bob also reported he has made minor revisions to NM Project 2012 and has received input that there are some areas which the document currently does not fully address—the importance of school leadership, assessment, and involving student perspectives. He then introduced Eric MacInteer, a student working with Representative Janice Arnold-Jones, who will be holding a student focus group to gather their views on effective math and science instruction. Eric reported that he will be meeting with approximately 14 high school and college students on August 17 and had prepared a list of questions as a starting point for their discussion. The session will be recorded. Council members provided suggestions for how additional efforts might be structured and data collected.

Bureau Staffing

Mary Jo reported that she has notified PED Leadership that effective August 24, 2009, she will no longer be the Interim Bureau Chief and will resume her role as the Science Specialist. The Bureau Chief position is specified in the statute that created the Bureau, but it is not funded for FY10. There has been no response from PED leadership to indicate what they plan to do. Several Council members expressed appreciation for Mary Jo's work in this role. A motion was made that Bob Eisenstein write a letter from the Council encouraging the Secretary to fund and fill the Bureau Chief position. The motion carried; 11 for, 1 opposed.

Governor's Initiatives

Franny reported that she, Bob Eisenstein and Mary Jo met with Peter Winograd, the Governor's Education Advisor in order to discuss the Governor's Initiative that was announced in response to the new cohort graduation data. The meeting ended up being focused on the "Race to the Top" grant—a part of the ARRA (Stimulus) bill. Dr. Catherine Cross Maple (PED) is the designated lead in developing a proposal. In addition, Dr. Winograd and Tom Bowles, the Governor's Science Advisor, have requested submission of "STEM policy statements" that the Governor might consider. Franny presented an overview of the Race to the Top grant as presented in the preliminary guidelines and a discussion ensued about these issues. The Council split into three working groups to develop policy statements and recommendations for a Race to the Top proposal. Each group began with a chapter of current *NM Project 2012* as a starting point for their discussions. They then reported out the conclusions of their discussions.

Small Group Reports

Group 1

POLICY: Produce and attract more highly qualified math and science teachers, including second-career STEM professionals.

EXPANDED STATEMENT: New Mexico faces a serious shortage of qualified math and science teachers. The situation is most critical in math, where the addition of a required fourth year course for high school graduation substantially aggravates an already tenuous situation. In both math and science, New Mexico is not graduating enough teachers each year to cover normal

attrition, let alone address increasing graduation requirements.

More must be done to equip New Mexico's K-12 math and science teachers with the content knowledge, pedagogical skill, confidence and enthusiasm necessary to teach these subjects effectively at all levels. This is a critical issue, as many student attitudes toward math and science are formed in elementary school years and must be nurtured in middle school for success in high school.

Recommendation summary: Revise teacher education programs and create a system of incentives that will attract more New Mexico college and university students to K-12 math and science teaching careers. Mount an aggressive effort to recruit highly qualified (in math and/or science) teachers from out of state, from the ranks of retired teachers in New Mexico, and via the instigation of a program to attract STEM professionals into the teaching ranks (see Project 2012 Chapter 5).

Group 2

- Require and fund on-going, job-embedded, statewide professional development for math/science teachers and the administrators who supervise them as recommended in Chapter 2 of Project 2012, pg. 28.
- Establish ways to build capacity to provide and sustain math and science professional development to K-12 teachers and administrators.
- Design public awareness programs to achieve long-term cultural change in attitudes toward math and science programs.

Group 3

- Provide all the resources and facilities necessary for New Mexico students to achieve a rigorous and excellent stem education
- Create a periodic evaluation and assessment of community-specific instruction and resources for math and science instruction in New Mexico schools and facilities utilizing capital and operations funds.

Recruiting HS Math Teachers from Overseas

Tom Gruszka offered a topic for Council consideration: might the Council support recruiting teachers from overseas to help address the growing need for high school mathematics teachers?

The discussion raised several issues:

- Is there a way to find out which districts need or will need additional math teachers? PED does not have this information.
- Is there data on what makes a teacher effective?
- Do teachers from other cultures require different preparation to be effective due to significant differences in cultural contexts?
- Are potential second-career teachers getting correct information about and adequate access to alternative licensure programs?

Plus/Delta

New members were invited to provide their feedback on the meeting, after which returning members provided their comments.

- Small groups were effective in allowing all to contribute to the discussion
- There's a steep learning curve for new members
- Felt privileged to be in this group
- Council was very receptive of different ideas
- Would have done better if I'd read Chapter 2012 in advance
- Opening exercise helped to get people to know each other and it was fun
- Appreciated having classroom teachers willing to participate in Council
- Good venue/table space was a little overcrowded
- Good to see everybody again
- Participation entails a lot of traveling time—attendance is appreciated
- Thank you, Franny!

The meeting concluded shortly before 4pm and all attendees were invited to a social gathering following the meeting.

Future Meeting Dates—notify Franny if you know of major scheduling conflicts likely to involve several members. Locations are TENTATIVE suggestions but will be determined soon.

September 18, 2009	Santa Fe or Española
November 20, 2009	Socorro area
January 15, 2010	Albuquerque
March 19, 2010	Socorro area
May 21, 2010	Las Cruces