

**New Mexico Partnership for Math and Science Education  
 Partnership Meeting  
 and  
 Math and Science Town Hall Implementation Team Meeting  
 January 20, 2006  
 NEA Building  
 Santa Fe, NM**

**1:00 Welcome and Introductions – Barbara Kimbell, Jack Jekowski – Interim Co-Presidents, NMPMSE**

Participants introduced themselves and their affiliations – they included:

<b>Attendee</b>	<b>Contact Information</b>
Barbara Kimbell	<a href="mailto:bkimbell@unm.edu">bkimbell@unm.edu</a>
Cathy Kinzer	<a href="mailto:cakinzer@nmsu.edu">cakinzer@nmsu.edu</a>
Tom Gruszka	<a href="mailto:tpeter@cs.wnmu.edu">tpeter@cs.wnmu.edu</a>
Bruce McClure	<a href="mailto:gbmcclu@sandia.gov">gbmcclu@sandia.gov</a>
Lisa Snow	<a href="mailto:lisnow@nmsu.edu">lisnow@nmsu.edu</a>
Matt Pape	<a href="mailto:m.pape@lagunaed.net">m.pape@lagunaed.net</a>
Robert L. Lucer	<a href="mailto:rlucero@nmvoices.org">rlucero@nmvoices.org</a>
Joyce Kaser	<a href="mailto:jkaser@wested.org">jkaser@wested.org</a> or <a href="mailto:jskaser@aol.com">jskaser@aol.com</a>
Catherine Martinez Berryhill	<a href="mailto:cmb@lanl.gov">cmb@lanl.gov</a>
Richard Nygren	<a href="mailto:renygre@sandia.gov">renygre@sandia.gov</a>
Nora E. Lovato	<a href="mailto:nora.lovato@state.nm.us">nora.lovato@state.nm.us</a>
Jeanette Miller	<a href="mailto:jeanette@gotoif.org">jeanette@gotoif.org</a> and <a href="mailto:russ@gotoif.org">russ@gotoif.org</a>
Vannetta Perry	<a href="mailto:vperry@nmt.edu">vperry@nmt.edu</a>
Mary Jo Daniel	<a href="mailto:daniel@aps.edu">daniel@aps.edu</a>
Rick Scott	<a href="mailto:pscott@nmsu.edu">pscott@nmsu.edu</a>
John Juarez	<a href="mailto:jrjuarez@comcast.net">jrjuarez@comcast.net</a>
Kurt Steinhaus	<a href="mailto:kurt.steinhaus@state.nm.us">kurt.steinhaus@state.nm.us</a>
Claudia Ahlstrom	<a href="mailto:Claudia.ahlstrom@state.nm.us">Claudia.ahlstrom@state.nm.us</a>

Jack Jekowski	<a href="mailto:jjekowski@aol.com">jjekowski@aol.com</a>
Ted Wolff	<a href="mailto:tawolff@sandia.gov">tawolff@sandia.gov</a>
Al Zamora	<a href="mailto:azamora@unm.edu">azamora@unm.edu</a>
Clyde M. Romero	<a href="mailto:cromero@sfis.k12.nm.us">cromero@sfis.k12.nm.us</a>
Irene Lee	<a href="mailto:lee@santafe.edu">lee@santafe.edu</a>
Mary Lynne Herr	<a href="mailto:mlherr@nmmesa.org">mlherr@nmmesa.org</a> or <a href="mailto:mlherr@starband.net">mlherr@starband.net</a>
Betsy Frederick	<a href="mailto:bfrederick@zianet.com">bfrederick@zianet.com</a>
Helen Maestas	<a href="mailto:Helen_maestas@bingman.senate.gov">Helen_maestas@bingman.senate.gov</a>

**1:10 Opening remarks – Secretary Designate, Higher Education Department, Dr. Beverlee McClure and Secretary, Public Education Department, Dr. Veronica Garcia or representatives**

Because of Legislative commitments, neither Dr. McClure nor Dr. Garcia could make the meeting, however we did have representation from PED and several individuals from higher education institutions.

**1:20 Financial Report – NMPMSE – Selena Connealy and Barbara Kimbell**

Barbara presented the current financial status of the Partnership – we do have some funding left over from Town Hall – see details below. We are still awaiting a final invoice from NM First.

Number	Date	Description of Transaction	Payment Amount	Deposit Amount	Balance
		Opening Balance			20,000.00
200	7/20/2005	Rick Scott--reimburse for Glorieta dep.	500.00		19,500.00
201	10/20/2005	NM First	11,125.00		8,375.00
	11/22/2005	Deposit by B. Kimbell		2,754.64	11,129.64
202	1/6/2006	Glorieta	4,891.85		6,237.79
203	1/17/2006	Reimburse RS for white paper producti	1,211.00		5,026.79
		Final invoice from NM First is still outstanding.			

**1:30 Reconnecting – Review of Town Hall Recommendations – Dr. Kurt Steinhaus presentation to Senate Education Committee**

Jack and Barbara provided handouts of the Town Hall report, and showed the excellent PowerPoint that Dr. Steinhaus had assembled for the Senate Education Committee (Senator Cynthia Nava, Chair), which provided a very succinct view of the Town Hall recommendations. Dr. Steinhaus was able to capture the recommendations in a graphical form that was well received by the Committee. The summary statements from this presentation that capture the Town Hall recommendations are provided below:

Recommendation #1: ***State Math and Science Initiative***

- Standards – Student Learning and Assessment
- Consistency in Training

Recommendation #2: ***State and Local Leadership***

- Advisory Council
- Statewide Strategic Plan
- Budget
- Annual Recommendations to the Legislature

Recommendation #3: ***Experts in Math and Science***

- New Math and Science Unit in PED
- Work With Schools
- Ongoing Partnerships
- Content and Pedagogy

Recommendation #4: ***NM Math and Science Education Model***

- State Provides Technical and Financial Assistance to Districts Adopting the Model
- Align Math and Science Curriculum
- Flexible and Fluid

Recommendation #5: ***Increase Rigor in Higher Education***

- Quality Math and Science Courses
- Increase the Number of Credit Hours
- Recruit Teachers

Recommendation #6: ***Increased Opportunities***

- Internships
- Family Activities
- Student-Identified Research
- Expanded Lab and Field Work

Recommendation #7: ***Professional Development (PD)***

- Comprehensive and ongoing
- Allow Time
- National PD Standards

Recommendation #8: ***Public Awareness***

- Interest and Enthusiasm in Math and Science
- Information Campaign
- Support and Outreach

For reference purposes, the full recommendations are attached as an addendum to these minutes.

**1:45 Activities since the Town Hall meeting**

- **Presentation to Legislative Education Study Committee – December 13, 2005 – Jack Jekowski**

Jack spoke about the briefing provided to the LESC by Barbara Brazil (Executive Director of NM First) on the APS split-up Town Hall and the Math Science Town Hall. Senator Nava invited Jack to sit at the testimony table, and following Barbara's presentation, there were many comments and questions concerning the Math and Science Town Hall. There was very broad support from Legislators for new initiatives by all who either commented or asked questions. This was the first indication we had that perhaps there may be some opportunity in this Legislative session to seek help with our recommendations.

- **Visit with Senator Bingaman and staff – January 6, 2006 – Barbara Kimbell, Jack Jekowski**

Jack and Barbara talked about their briefing of Senator Bingaman and Marc Wunder, one of his Albuquerque Staff. Marc frequently attends various education-related meetings.

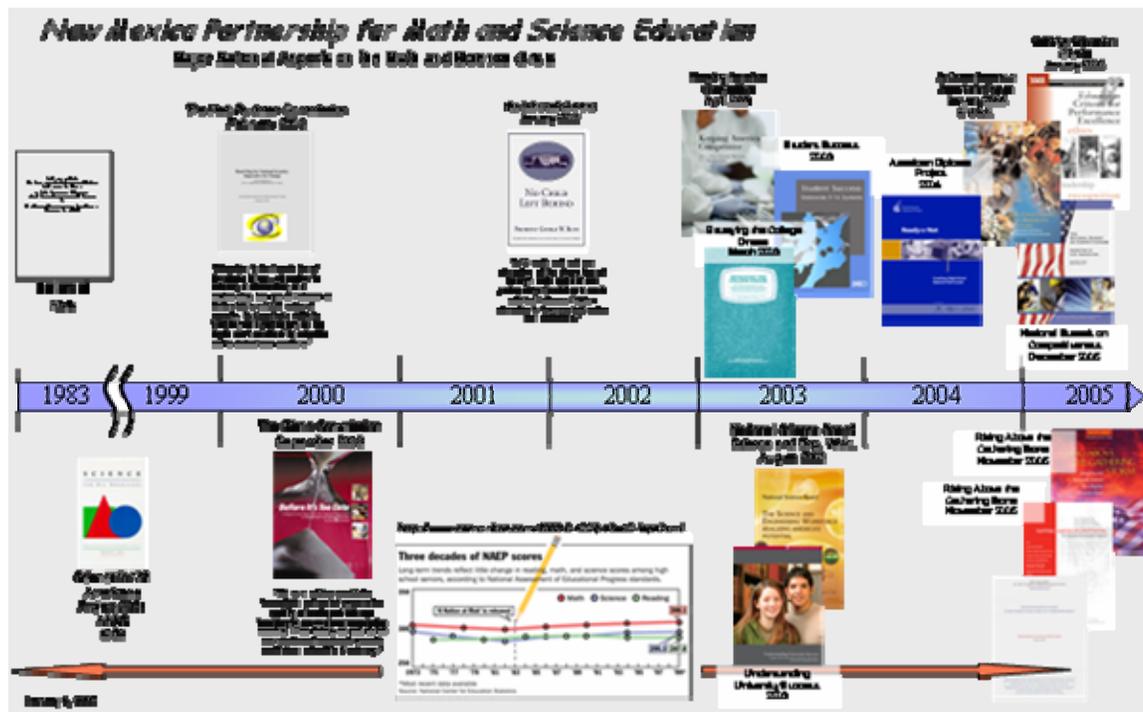
Senator Bingaman, along with Senator Lamar Alexander (R-TN) commissioned a major study by the National Academy of Sciences in May of 2005 to look at the steps the government should take to ensure the preeminence of America's scientific and technological enterprise. This eventually translated into a charge to the NAS to produce a report that addressed the following questions:

1. What are the top 10 actions, in priority order, that federal policy makers could take to enhance the science and technology enterprise so the United States can successfully compete, prosper, and be secure in the global community of the 21<sup>st</sup> Century?
2. What implementation strategy, with several concrete steps, could be use to implement each of those actions?

The resulting report, issued in October, called "Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future" has driven a renewed national dialog on science and math education and the importance of ensuring the next generation of students are the best in the world (see [www.nap.edu/execsumm\\_pdf/11463.pdf](http://www.nap.edu/execsumm_pdf/11463.pdf) for the Executive Summary of this report). Senators Bingaman, Alexander and Domenici, in fact, have prompted President Bush to include a reference to math and science education in his upcoming State of the Union speech (January 31<sup>st</sup>), and have also prepared some draft legislation which is moving forward very fast in Congress. A press release on the Senators initiative and the draft legislation as of a month ago are provided as addendum to these minutes and were handed out at the meeting.

Our discussions with the Senator focused on the Town Hall recommendations, how many national task forces and commissions over the years have also identified similar

issues to those brought forth in our Town Hall, and how all of the recommended improvement actions might be aligned. Jack provided a handout that shows a timeline of these reports, many of which were summarized in the Town Hall background report authored by Dr. Rick Scott and Dr. Steve Sanchez. The 11x17 of this chart was handed out at the meeting and is shown below.



Copies can be obtained from Jack. Jack is also preparing a matrix of recommendations from these reports to examine common themes. From his initial work, it appears at though there will be at least five themes that run across these various studies:

1. Teacher preparation and quality – particularly in content areas, and more math and science for all teachers
2. Curriculum alignment, K-20, (particularly within K-12), and tying curriculum to real life applications
3. Public attitudes and support to math and science – engaging parents, communities, businesses
4. Setting the right metrics that measure the effectiveness of curriculum, teachers, schools, and systems
5. Investment in research and aligning research and the use of the scientific method, and scientific ethics beginning in K-12 through advanced degrees.

The Senator offered to help with our efforts (with the Governor), and subsequently was able to talk to the Governor. We also asked if he would help support the naming of 2007 as the “Year of Math and Science Education” in New Mexico, anchored in the Intel International Science and Engineering Fair, which will be held in

Albuquerque in May of that year. In addition, the Senator asked us to help with his initiative (part of the Rising Above the Gathering Storm recommendations) to develop a pre-Advanced Placement professional development program, so that teachers in middle schools will have increased content knowledge so that as students enter high school they will be better prepared to take AP courses. We also both agreed to stay in touch to see how we could mutually align and support state and national initiatives.

- **Meeting with Dr. Jacki Riggs and Mark Wunder (Senator Bingaman staff) – January 11, 2006 - Barbara Kimbell and Jack Jekowski**

While visiting Senator Bingaman, we also learned that Dr. Jacki Riggs, who had been the executive director of the NM Business Roundtable for Educational Excellence (NMBREE), had also been talking with the Senator about helping to assemble a statewide advisory council for math and science. We subsequently met on the 11<sup>th</sup> with Jacki and Marc to discuss how we could align our efforts (see suggestions later in these minutes on the idea that we might look at such an advisory council as the policy making body, and perhaps the NMPMSE as a working committee that would take initiatives from the advisory council and act on them).

- **House Education Committee Briefing – January 13, 2006 – Barbara Kimbell, Dr. Steven Sanchez**

Barbara and Steve made a presentation to the House Education committee (Rep. Rick Miera, Chair), using materials provided by NM First. This presentation again was well received with many positive comments, suggestions for improvement and commitments of support being provided.

- **Senate Education Committee Briefing – January 18, 2006 – Dr. Kurt Steinhaus**

As mentioned earlier, Kurt's presentation to the Senate Education Committee (Senator Cynthia Nava, Chair) was very well received. At this hearing, Senator Nava suggested that math and science become a focus for the Committee, and that an Omnibus Bill should be created to capture all of the Math and Science proposals so that they may be heard in the proper context.

- **Visit with Senator Domenici's staff – January 20, 2006 – Barbara Kimbell, Jack Jekowski**

Jack and Barbara met with Lisa Breeden-Garcia of Senator Domenici's office in Albuquerque the morning of our Partnership meeting. Lisa was very supportive of our process and recommendations and is going to forward our materials to the Washington staff, who Barbara will visit the end of January. As with Senator Bingaman, we also asked for support of our statewide initiatives, and agreed to stay in touch with staff to see how we might support the Senator's national legislative initiatives, and align the two.

## **2:15 Current Legislative Initiatives and Plans**

- **\$3M Summer program – Dr. Rick Scott**
- **New proposals – Dr. Kurt Steinhaus**
- **Your commitment to participate**

Rick Scott provided a preliminary matrix that he and Steve Sanchez have begun to prepare for Senator Nava that will put the various math and science initiatives before the Legislature in the context of our Town Hall recommendations, and which it is hoped will allow for the identification of any gaps that might need to be filled. This preliminary matrix was handed out for attendees to review and comment on. A copy is attached as an addendum to these minutes.

A discussion ensure on how to best use the time and expertise of the meeting attendees. Based on the those discussions, it was agreed that we would break into working groups, based upon the recommendations, and provide additional input to Rick since the time frame for moving legislation through this short session requires a lot of work over the next two weeks (the deadline for submitting legislation is February 1<sup>st</sup>). It was also agreed that recommendation #3 – which has a primary element the creation of a new Division in PED for math and science – was already well on its way toward implementation, and would not be worked on in this meeting (legislation in the form of HB38, Rep. John Heaton; and SB 56, Senator Cynthia Nava) has already been submitted to create the new Division. Also, it was agreed that we would combine recommendations 1 and 8; 4 and 6; and 2, 5, and 7 into three working groups since common participants expressed interest in these recommendations.

## **2:40 BREAK**

## **3:00 Breakout session by eight Sub-Teams (aligned with recommendations)**

- **Alignment with current and proposed Legislative Initiatives**
- **Additional proposals aligned with recommendations**
- **Team composition and Team Leader designation (volunteer or nominated)**
- **Feedback on meeting frequency and how information should be consolidated**

Attendees broke into the teams agreed to before the break and developed recommendations and ideas. These are documented in the following topic.

### 3:35 Report back by Sub-Committee (2 minutes each)

The teams reported out, providing the following verbatim materials:

#### Recommendation #1, #2 and #8

Participants included: Ted Wolff, Jeanette Miller, Helen Maestas, Robert Lucero, Nora Lovato, and Richard Nygren.

#### Recommendation #1

##### Current Projects:

- Town Hall recommendations
- Legislation
- National initiative alignment and coordination
- Pecos Schools and Luna Community College Career Technical Work Force project. – they are trying to get all of their vocational ed classes aligned with academic standards, e.g. computer science professional certification and nursing

Helen Maestas

##### Existing Statutory issues:

- Licensure
- Standards

Richard Nygren

##### Components:

- Vertical curriculum alignment (articulation) K-12
- Higher Education/District articulation on curriculum

Richard Nygren

#### Recommendation #2

Follow on:

- State clearinghouse for events in Science and Math – (Robert Lucero)
- Advisory Council has “Big Dogs”. Each “Big Dog” has a “lieutenant” who is the worker bee that becomes member of NMPMSE [note: discussions occurred that the Advisory Council, consisting of Lab Directors, Presidents of Universities, policy makers, etc. would be supported by NMPMSE as the core worker function – whose membership would be supplemented by new appointees from “Big Dogs”. (Richard Nygren)
- Advisory Council ombudsman to general education and children advocacy groups. (Robert Lucero)
- Advocacy for the “Year of Math and Science” by business community. (Jeanette Miller)

Recommendation #8

## Current Projects:

- ISEF-2007 (host must raise \$2.4M – Legislation is in for this session)
- Clearinghouse of math and science initiatives

} Robert Lucero

## Follow-on:

- Formation of “communities of interest” with organizations to gather and inform people (Nygren is doing this at Sandia)
- Articulation of Math and Science Initiative
- One-page newspaper ad by Corporate Partners proclaiming “Year of Math and Science”.

Recommendation #4 and #6

Participants included: not shown on flip chart sheets

Recommendation #4

- GMI, Newcomb/Narbona, Jason, Boston, San Diego, MSA
- Vertical and horizontal alignment
- K-12 linked to pre-service teachers – model standards-based instruction
- Integrate math and science, then other areas (primarily K-3)
- Pulling together curriculum to meet standards
- Inquiry-based, field-study experiences
- Recommend Scope and sequence for science and math
- Equity and access issues

Recommendation #6

- NM MESA (add to current chart)
- Mentorships (add to internships\_ - K-16)
- Teacher-led summer camps (note – contact Dr. Calvin White at Office of Dine Science, Math and Technology for data on an integrated, hands-on summer camp).
- Masters Program
- Tutoring apprenticeships

## Current Project Additions for Recommendation #4 and #6:

- Supercomputing Challenge (MS & HS) and teacher PD - \$160,000
- Santa Fe Institute (SIM) (\$30,000) – Internship/Mentoring program
- NM MESA (\$162,000 extra funding being requested to expand this proven program in all regions of the state - currently there are 11 schools on a waiting list, at the cost of about \$18,000 per school; also, \$54,000 being requested for regional parent Institutes to raise awareness of math and science)

- Science Fairs

### **Recommendation #5 and #7**

Participants included: John Juarez, Clyde Romero, Tom Gruszka, Joyce Kaser, Vannetta Perry, and Cathy Berryhill

#### **Recommendation #5**

Recommendations:

- Hire someone to analyze the math and science offerings of all institutions of Higher Education who train teachers, both elementary and secondary. We need funding to do this. Look at correlations between persistence, ACT scores and High School graduates.
- Look at findings from above effort and see if alignment of offerings can be refined and consistence improved
- Look at teacher tests – do they align with the ability to teach to state standards? Can we also align them to NM Teacher Assessments? – this needs to be followed up with research component to show effect of differences and changes.
- If this can be done this year, make recommendations to:
  - What do differences between institutions mean to students and learning
  - Program alignment and accountability is the goal

#### **Recommendation #7**

Recommendations:

- Graduate Programs – focus on content and pedagogy
  - Teacher stipends
  - Full summers
  - Tuition and books
  - Housing
  - Follow-up
- Proposed PD program Review Process to make sure the PD is meeting NSDC guidelines and PD Framework (John Juarez and Clyde Romero)
- Next Steps – What can we do to support adoption of PD Framework (Joyce Kaser)

### **3:55 Next Steps**

Rick Scott, Kurt Steinhaus and Steve Sanchez will take the input from the meeting, along with other research, and complete the matrix in the next week. That will then become the basis for an Omnibus Bill that will be created to support Math and Science. Barbara Kimbell and Mary Jo Daniel will prepare materials for visits to the Washington staff of our Congressional Delegation. Barbara will visit the Senators and Mary Jo will visit the three Congressional Offices. Rick and

Kurt will keep us all informed as various committee hearings come up on the Legislation, and all participants were asked to contact their Legislators to let them know they need to support the Omnibus Bill and other legislation for math and science. Rick's Legislative email is: [rick.scott@nmlegis.gov](mailto:rick.scott@nmlegis.gov), his regular email is [p.scott@nmsu.edu](mailto:p.scott@nmsu.edu). Claudia Ahlstrom is going to use the discussions and materials generated by our group to assist with the analysis of various bills for PED. Jack Jekowski will develop a matrix of various national reports to see if there are common issues that run through all of the reports.

**4:00 Adjourn**

## **Addendum Final Recommendations**

1. Create a New Mexico mathematics and science initiative that establishes consistency between how teachers are educated, what they teach, the standards that govern what is taught, student learning, and assessment.
2. Establish a state-wide mathematics and science initiative to improve mathematics and science instruction and narrow the achievement gap. This initiative will be based on leadership from those who can best assist with the success of the effort, including: the Office of the Governor, the Secretary of Education, the Secretary of Economic Development, the Secretary of Higher Education, and the Legislature. The initiative will also be supported by an advisory council, with members that are representative of the education community and all stakeholders. Permanent staff will be assigned to provide additional leadership and implementation. The initiative will be further supported by a state-wide strategic plan for mathematics and science education crafted by the advisory council with input from key decision makers and stakeholders. The strategic planning process will include budget projections. The Advisory Council will advise the legislature annually as to the budget. Representatives from the Public Education Department, Higher Education Department, Pre K-12 teachers and students, post-secondary institutions, research labs, and other relevant stakeholders will be involved in developing and sustaining an ongoing collaborative partnership and process to develop and implement an action plan for the state to address mathematics and science literacy. This body will utilize state-wide and national data, best practices and exemplary models, and student input to foster student and educator learning and achievement.
3. Create a unit at the Public Education Department for science and mathematics with sufficient staff to cover the state. This unit will report to a high level, (e.g. a cabinet level) position. This unit will inject expertise into the system at every level from the building level to the state department level, and will build and support infrastructure. It will also work to staff schools with appropriate mathematics and science experts in content and pedagogy.
4. Create a New Mexico Mathematics and Science educational model that allows districts to align mathematics and science curriculum, provides teacher professional development and school based support, provides leadership development (for principals and district leaders), aligns district funds, partners with Higher Education and Local Education Agencies, and aligns licensure programs. The curriculum and the process will be flexible and fluid and allow for different entry points based on district needs. The state will provide technical and financial assistance to districts willing to adopt this model.
5. Colleges and universities will increase the rigor of mathematics and science requirements for teachers entering teacher education programs and licensure by increasing the number of credit hour requirements and/or the quality of mathematics and science courses, and recruitment of teachers.
6. Increase opportunities for both teachers and students to translate knowledge from the standard classroom experience to practical, timely and relevant applications. Examples of strategies in this area include: internships, expanded lab and fieldwork opportunities, exposure to professionals in the area of science and mathematics, and student-identified research projects and family activities (such as camping trips, museum activities, field trips and/or summer camps).
7. Develop and implement a structure for comprehensive longitudinal on-going professional development for teachers to develop and refine the pedagogical and content knowledge they need to effectively teach mathematics and science to all students. Provide teachers with the funding and time they need to participate. Adopt the National Staff Development Council standards. Protect dedicated time within the school day for professional development in mathematics and science.
8. Create ongoing public awareness programs to raise public interest and enthusiasm for science and mathematics. Provide support for new and existing outreach programs. Include marketing and media campaign such as has never been seen in New Mexico. Identify the strong leaders that can be advocates at the legislature.

For immediate release:  
 (Domenici) 202-224-6977  
 December 15, 2005  
 202-224-1804

202-224-8816

202-228-1122

Contact: Marni Funk

Jude McCartin (Bingaman)

Harvey Valentine (Alexander)

Melissa Schwartz (Mikulski)

**SENS. DOMENICI, BINGAMAN, ALEXANDER MEET WITH  
 PRESIDENT BUSH TO DISCUSS NATIONAL ACADEMIES' AUGUSTINE  
 REPORT**

*Senators Preparing Legislation to Maintain America's Competitive Edge in the Global  
 Economy*

WASHINGTON, D.C. – U.S. Senators Pete Domenici (R-NM), Jeff Bingaman (D-NM), and Lamar Alexander (R-TN) met with President Bush at the White House today to discuss the findings of the National Academies October report, "Rising Above The Gathering Storm: Energizing and Employing America for a Brighter Economic Future." The senators are preparing legislation to implement the recommendations and expect to introduce it early next year.

"Our economy and a promising future for our children and their children depend on America's ability to maintain its competitive edge in science and technology. I fear we are losing that edge and believe we must act quickly and decisively to regain it. Our lag in science and technology is reflected in our growing dependence on other nations for energy. It's seen in corporate America's growing interest in foreign workforces. I look forward to a bipartisan effort in the Senate and with the administration to swiftly and surely remedy this serious problem. In my discussion with President Bush today, he was concerned about the problem and interested in a solution. He shares our commitment to creating more high-tech, high-paying jobs here at home," said Domenici.

"While America today is the world's research and development powerhouse, tomorrow is another matter. We are slipping in our international leadership role. To reverse that trend, we must recommit ourselves to funding R&D in science and technology, and recommit ourselves to investing in education to ensure we are training the best scientists, engineers, and mathematicians in the world," said Bingaman.

"Other than the war against terror, keeping our brain power advantage so we can create new jobs here in the United States and keep our jobs from going to China, India, Finland, and Ireland, is the biggest challenge we face as a nation," said Alexander. "We asked the experts what to do. They've told us. Now it's up to us to do it."

Senator Barbara A. Mikulski (D-MD), who has joined the Senators in developing legislation to support the National Academies' report, said, "In order to compete in this global economy, we must foster an innovation society. We must create new ideas that lead to new breakthroughs,

new products and new jobs. We also need to develop innovations that have the power to save lives, create prosperity and make America safer, stronger and smarter.”

In May 2005, Bingaman and Alexander, with the encouragement of Senate Energy Committee Chairman Pete Domenici, asked the National Academies of Sciences and Engineering and the Institute of Medicine the question, “What are the ten top actions, in priority order, that federal policy makers could take to enhance the science and technology enterprise so the United States can successfully compete, prosper and be secure in the global community of the 21<sup>st</sup> century?”

The National Academies responded by assembling a distinguished panel of business, government, and university leaders headed by Norm Augustine, former CEO of Lockheed Martin. As part of its deliberations, the panel reviewed over 150 proposals and made 20 recommendations in four broad categories: K-12 education, research, higher education, and incentives for innovation.

In their report, released Oct. 12, the Academies noted:

- Chemical companies closed 70 facilities in the United States in 2004 and have tagged 40 more for shutdown. Of 120 chemical plants being built around the world with price tags of \$1 billion or more, one is in the United States and 50 are in China.
- U.S. 12th graders recently performed below the international average for 21 countries on a test of general knowledge in mathematics and science.
- In 2001, U.S. industry spent more on tort litigation than on research and development.

## Legislative Provisions

### Based on the Augustine “Gathering Storm” Report

*To be introduced early next year*

#### Strengthen the nation’s traditional commitment to research

##### **More research opportunities for scientists and engineers**

Would increase basic research spending by 10% per year for 7 years at several federal agencies, including the national laboratories. This investment would generate hundreds, maybe thousands, of new inventions and high-tech companies.

##### **Targeted research grants for early career scientists and engineers**

Would create a special research fund for 200 outstanding young researchers across the nation each year.

##### **New federal funds to buy equipment and upgrade research laboratories**

Provides a special pool of funds (up to \$1 billion per year) for the nation’s research infrastructure – to purchase updated research equipment and upgrade lab capabilities.

##### **A New Agency for Transformational Energy Research**

Would establish a new research agency within the Department of Energy tasked with developing transformational energy technologies that bridge the gap between scientific discovery and new energy innovations. This agency would be patterned on the management practices of a Pentagon research agency (DARPA) that contributed to innovations like the Internet, stealth technology and global positioning systems.

#### Improving K-12 Science/Math Education

##### **Scholarships for Future Teachers of Math & Science**

Each year, about 10,000 bright students would receive 4-year scholarships (up to \$20,000 a year) to earn a bachelor’s degree in science, technology, engineering, or math, while concurrently earning teacher certification. In exchange for these scholarships, they would be expected to serve for at least four years as a math or science teacher.

##### **Math & Science Teacher Training Programs**

The legislation would fund part of the costs for new math and science teacher training programs based in math and science departments at universities across the country. These programs will stress a solid content knowledge of their subject while also providing the training necessary for teacher certification.

##### **Summer Academies for Teachers**

National laboratories and universities across the country would host 1-2 week academies each summer for 50,000 math and science teachers so they can get some hands-on experience and take back new, improved ideas for energizing their students.

### **Advanced Placement Courses in Math & Science**

The federal government would provide funding to help establish non-profit organizations to promote Advanced Placement (AP) classes in math and science – tripling the number of students who could join these college-preparatory programs that consistently produce the highest achievers.

### **Specialty Math & Science High School**

States would be eligible to apply for a grant from the federal government to establish a new high school specializing in math and science that students from across each state could attend.

### **Internships and Summer Programs for Middle and High School Students**

Would provide unique internship and program opportunities for middle and high school students at national labs and other technology and scientific research facilities.

### Increase the Talent Pool by Improving Higher Education

#### **Scholarships and Fellowships for Future Scientists**

Each year, about 25,000 bright young Americans would receive 4-year competitive scholarships (of up to \$20,000 a year) to earn a bachelor's degree in a science, technology, engineering, or math, so that our brightest students pursue studies in these fields which are so critical to our economic growth. About 5,000, who have already earned their bachelor's degree, would compete to receive graduate research fellowships to cover education costs and provide a stipend.

#### **Attracting the Brightest Foreign Students to our Universities**

Provides an efficient student visa process for bright foreign students to come here to study math, technology, engineering, and science and then to stay here – contributing to our economic growth rather than being forced by an outdated immigration system to go home and produce the best new technology in India or China.

### Grow our Economy by Providing Incentives for Innovation

#### **Doubling the Research & Development Tax Credit to Encourage Innovation**

Doubles the current R&D tax credit to 40% and makes it permanent – so companies conduct ground-breaking, job-producing research here, rather than building new facilities overseas.

#### **Creating a Tax Credit to Encourage Employers to Invest in Employees' Education**

Establishes a new tax credit to cover costs from providing continuing education to employees – so employees can learn cutting-edge skills.

# # #

**Senate Education Committee - DRAFT 1/20/06**  
**January 2006**  
**Mathematics and Science Town Hall Recommendations**

Recommendation	Components (Suggested by Town Hall participants)	Existing statutory language (other areas)	Current Legislative Requests	Current Projects/ Initiatives	Notes (Omnibus bill components?)
1. Create a NM mathematics and science initiative that establishes <b>consistency between how teachers are educated, what they teach, the standards that govern what is taught, student learning, and assessment.</b>				<i>SIMSE '91-96</i>	
2. Establish a <b>statewide mathematics and science initiative</b> to improve mathematics and science instruction and narrow the achievement gap.	<p>a. <b>Leadership</b> from the Governor's Office, Sec. of Education, Sec. of Higher Education, Sec. of Economic Development, and the Legislature</p> <p>b. Supported by an <b>Advisory Council</b> (represents the education community and other stakeholders); the Council advises the legislature on budget projections.</p> <p>c. Supported by a <b>statewide strategic plan</b> for mathematics and science crafted by the advisory council</p>			<i>CAMSE '91-'96</i>  <b>NMPMSE</b>	\$150K may be proposed to fund activities of the Advisory Council

Recommendation	Components (Suggested by Town Hall participants)	Existing statutory language (other areas)	Current Legislative Requests	Current Projects/ Initiatives	Notes (Omnibus bill components?)
3. <b>Create a unit in the PED</b> for science and mathematics	<ul style="list-style-type: none"> <li>a. Inject expertise into the system at every level (building to state department level)</li> <li>b. Build and support infrastructure.</li> <li>c. Unit reports to Secretary of Education</li> <li>d. Work to staff schools with appropriate mathematics and science experts in content and pedagogy.</li> </ul>		HB38/SB56 PED Sci/Math Div- \$424K		<b>Asst Sec-1 FTE</b> <b>Experts-3 FTE</b> <b>AdmSec-1FTE</b> <b>Resrchr-1 FTE</b> <b>Supplies</b>
4. Create a NM mathematics and science <b>educational model</b> .	The model coordinates: <ul style="list-style-type: none"> <li>a. District curriculum</li> <li>b. Teacher professional development</li> <li>c. Leadership professional development</li> <li>d. Funding</li> <li>e. Licensure programs</li> </ul>			GMI	
5. Colleges and universities will <b>increase the rigor of mathematics and science requirements for teachers</b> entering teacher education programs and licensure.	<ul style="list-style-type: none"> <li>a. Increase the number of credit hour requirements and/or</li> <li>b. Increase the quality of mathematics and science courses</li> <li>c. Assist in the recruitment of teachers</li> </ul>		HB191/SB45 NMSU K-12 Sci&Math Asst Programs-\$247K	NMCETP '97-02	\$1M may be proposed

Recommendation	Components (Suggested by Town Hall participants)	Existing statutory language (other areas)	Current Legislative Requests	Current Projects/ Initiatives	Notes (Omnibus bill components?)
6. <b>Increase opportunities for teachers and students to translate knowledge from the standard classroom experience</b> to practical, timely, and relevant applications.	<ul style="list-style-type: none"> <li>a. Internships</li> <li>b. Expanded lab and field work opportunities</li> <li>c. Expose to other professionals in mathematics and science careers</li> <li>d. Student identified research projects</li> <li>e. Family activities</li> </ul>		<p>HB158/SB119 NMSU SEMAA-\$247K</p> <p>HB161/SB37 Statewide Outdoor Classrm Program-\$250K</p> <p>HB191/SB45 NMSU K-12 Sci&amp;Math Asst Programs-\$247K</p>	<p>SNMSEMMA Museums Lab internships</p>	<p>\$2M may be proposed (perhaps as supplement to sci adoption for lab equipment)</p> <p>\$120K may be proposed for HS &amp; U student internships</p>
7. Develop and implement a <b>structure for comprehensive longitudinal on-going professional development for teachers</b> to develop and refine the pedagogical and content knowledge they need to effectively teach mathematics and science to all students.	<ul style="list-style-type: none"> <li>a. Funding</li> <li>b. Adopt National Staff Development Standards</li> <li>c. Dedicated time within the school day for professional development</li> </ul>		<p>HB 26 Santa Fe Tchr Science Instruction-\$30K</p> <p>HB126/SB25 Mid School Math Sci Tchr Trng (MSA)- \$250K</p>	<p>RSIs GMI MSA MSPs</p>	<p>\$3M in Gov's Budget, awaiting supporting Legislation</p>
8. Create ongoing <b>public awareness programs</b> to raise public interest and enthusiasm for science and mathematics.	<ul style="list-style-type: none"> <li>a. Funding for new and existing outreach programs</li> <li>b. Identification of strong legislative advocates</li> </ul>		<p>HB268/SB169 ABQ Sci &amp; Info Fair-\$1.3M</p>	<p>SEDL pamphlets</p>	