Dave Lyon started the meeting and announced our next meeting would be at Lamphere High School on 13 Mile Road, between John R and Stevenson. He also introduced our speaker, Mark Davids, a longtime member of the DMAPT and an Einstein Fellow who worked with Senator Maria Cantwell.

Mark began by describing the Fellowships. These give a voice to educators in science and mathematics. The Department of Energy oversees the program and placed 3 fellows in the National Science Foundation, 3 at NASA, 4 on Capital Hill, and 1 at NIST. The fellows work for 10 months and earned $50,000.

Mark’s work with Senator Cantwell included attending meetings that involved science, providing briefings for the senator, preparing questions for witnesses at hearings, assisting with press releases, providing scientific advice, drafting original legislation on education, attending science policy hearings, and writing speeches. During the time he was on Capital Hill, he met a lot of constituents and became very familiar with the current issues. He found that the following areas were getting big money for research and development from the government: nano-science, biotech, NIH programs, and systems biology. He also became acquainted with the Union of Concerned Scientists who monitor government investments in weaponry and oversee the companies producing the weapons to be sure they actually work.

Mark and several other Fellows attended the Columbia launch as guests of NASA. This was an awesome event, but tragedy stuck 2 weeks later when the Columbia came down in pieces. Senator Cantwell was a member of the Commerce, Transportation, and Science Committee so Mark had an inside track on the CAIB investigation. Mark explained Feynman's important contributions to the Challenger investigation to his senate office and Senator Cantwell demanded that NASA add a "Feynman" presence to the Columbia Accident Investigation Board (CAIB). "The American public deserves that the CAIB has members who are independent of NASA,
the government, and the military." Within 2 weeks of her statement at the hearing, Doug Osheroff, Nobel Prizewinner and Physics Chair at Stanford, was appointed to the CAIB. Osheroff played a key role in the investigation and was sharply critical of the "safety culture" at NASA. Osheroff pointed out that impact tests of the foam were not done, the "Crater" equation that was used to predict damage was never updated from the 70's, and the problem of the foam "shedding" was never properly studied. Osheroff privately commented to Mark, "This is a déjà vu. We are finding the exact same communications problems that Feynman discovered and described 17 years ago!"

Mark also participated in discussion on education. He looked at No Child Left Behind, Schools of Choice, Impact aid, Head Start, IDEA, and in the higher education sector explored Pell Grants, and TRIO. Money is tight for education and many of these programs are experiencing budget cuts.

Mark also visited two Department of Education labs and got to go behind the scenes at the Smithsonian.

Our next speaker was Karl Klimek who is part of the Convergence Education Foundation. He promotes science education and the foundation works to make kids excited about science. They are funded by a convention held every other year and give grants to teachers who positively influence students toward science and engineering careers. They support schools who are under-resourced and in financially strapped districts. The foundation encourages students to have a sense of wonder about learning. They have funded guided experiences in many schools in Michigan, Ohio and Indiana.

Karl brought a Segway to the meeting and the rest of the time our members learned to ride it and asked many questions about the workings of the Segway. In his presentation, Karl offered to bring the Segway to our classrooms if we can show him how it would reinforce/support our curriculum—not just to do a "show and go."

For more information, or to contact Karl, go to the Convergence Education Foundation website at: www.cef-trek.org, or call 313-647-9993.

SEGWAY PHOTOS:

Nicole Gall   Dave Lyons and the Gang         Nicole Kellogg

EDITOR’S NOTES:

Two books highly recommended by Karl Klimek, who came to demonstrate the Segway at our November 11 meeting, are: Leadership and the New Science by Margaret Wheatly and Code Name Ginger, a book on the prototyping and history of the Segway.

Another fascinating tidbit from Mr. Kamen’s presentation: While it is true that U.S. President George W. Bush was photographed falling off a Segway, it could only have happened while that Segway was TURNED OFF. President Bush was not present when his family was given training on the use of the Segway; otherwise, it would have been very clear to him that it was turned off, and he shouldn’t have tried to get on it!

(by editor Nicole Gall)
WEBSITES OF THE MONTH:

From Al Gibson

**An excellent website to help students with their science fair projects, from coming up with ideas to making a winning display.  www.super-science-fair-projects.com**

**For those of you who missed the Elegant Universe, the program is available via your computer at:  www.pbs.org/wgbh/nova/elegant/program.html**

**Supply houses:  These websites have some unusual supplies at great prices.**


**View the Milky Way at 10 million light years from the Earth.  (Al promises this will be one to share with others)**

http://micro.magnet.fsu.edu/primer/java/scienceopticsu/powersof10/index

HOT OFF THE PRESSES...

A DIFFERENT WAY TO THINK ABOUT ACCOUNTABILITY - NO MORE DRIVE-BY TEACHERS
By Lee S. Shulman

It's hard to open the paper or turn on the radio these days without finding yet another call for educational accountability. It's a reasonable thing to seek. The public needs to know that schools and colleges are delivering on their promises to students and to society. The problem is that the typical mechanisms for ensuring quality (such as external tests or other measures of some sort) often miss much of what actually goes on in classrooms.

A different way of looking at accountability is through the lens of the classroom, where, after all, the proverbial rubber of teaching and learning meets the educational road. Do we need tests and state "report cards" to take the measure of education's effectiveness as an enterprise? Maybe. Do we need teachers who see student learning and its improvement as their professional, ethical responsibility? Absolutely.

What is entailed in this responsibility? An analogy is helpful here. Consider the story we read in the news at least once a year. In one version, a passenger on an airplane experiences severe chest pain, and the cabin attendant asks if there is a physician on board. A physician comes forward and attempts to assist the patient, but after several interventions the patient dies. Subsequently, the family of the deceased sues both the airline and the physician, the latter for malpractice. Had the physician remained in her seat and withheld her professional service, she would have been held harmless, no questions asked.

In another version of the story, an auto accident leaves several people by the roadside badly injured. A physician drives by and decides not to stop and render medical assistance for fear that he will be held responsible for any care he delivers. Perhaps he had just read a news story about the first physician. He is later criticized for inaction, for an unwillingness to act professionally. Once a person or a community takes on the mantle of a profession, every act is potentially permeated with ethical questions.

My point is that excellent teaching, like excellent medical care, is not simply a matter of knowing the latest techniques and technologies. Excellence also entails an ethical and moral commitment--what I might call the "pedagogical imperative." Teachers with this kind of integrity feel an obligation to not just drive by. They stop and help. They inquire into the consequences of their work with students. This is an obligation that devolves on individual faculty members, on programs, on institutions, and even on disciplinary communities. A professional actively takes responsibility; she does not wait to be held accountable. Consider the case of one of last year's U.S. Professors of the Year (a program co-sponsored by Carnegie and the Council for Advancement and Support of Education). Dennis Jacobs is Professor of Chemistry at the University of Notre Dame. Several years ago, teaching the introductory course in his department, he found himself face to face (often during office hours) with students who
dropping out. This was disturbing for a couple of reasons. For one, these students were clearly bright and hardworking enough to succeed—but they weren't succeeding. Second, it was disturbing because failure for many of them meant abandoning long-held dreams and career aspirations. Now, in some chemistry departments, the student failure rate in an introductory course is a badge of honor. But Jacobs was having none of this. Feeling an ethical responsibility for the success of his students, he designed an alternative approach to the course, employing small-group study circles and an emphasis on conceptual thinking. And then--this is an essential part of the story—he set about to document the effectiveness of this new approach. My colleagues and I at The Carnegie Foundation for the Advancement of Teaching refer to this commitment as "the scholarship of teaching and learning."

Leaving aside many of the details, Jacobs's approach not only allowed more students to succeed in meeting the chemistry department's high standards (far more students passed the course), it also modeled a kind of professionalism that should be at the heart of our ideas about educational accountability. Jacobs didn't just "drive by" when he saw what was happening to his students. He stopped what he was doing and gave assistance. He took responsibility for the quality of his students' learning through his own innovations and highly demanding assignments and tests.

Teachers like Dennis represent a kind of teaching excellence that is, admittedly, beyond what we find in lots of classrooms where teachers are content to teach well and leave it at that. It's tempting to say it goes "beyond the call of duty," but in fact my point is just the opposite. Teachers must accept the ethical as well as the intellectual and pedagogical challenges of their work. They must refuse to be drive-by educators. They must insist on stopping at the scene to see what more they can do. And just as is the case on airliners and freeways, many of the needed resources may be lacking. Nevertheless, they must seize responsibility.

There is no more powerful form of accountability.

ESSAY CONTEST:

The world's most advanced humanoid robot is headed to school this spring. ASIMO (Advanced Step in Innovative Mobility) will perform a special demonstration in March 2004 at the school that submits the winning entry to the ASIMO Essay Contest, a national contest on robotics. All public and private elementary, middle, junior high and high schools in the 48 contiguous United States are eligible to enter.

"The goal of the ASIMO Essay Contest is to encourage students across the nation to dream about the future of robotics," said Jeffrey Smith, leader of the ASIMO North American Project. "But more importantly, with this contest we hope to inspire students to work together to make their dreams a reality."

The winning school will receive an educational and interactive demonstration about robotics featuring ASIMO. This presentation will illustrate ASIMO's technical capabilities, including walking forward and backward, balancing on one leg, dancing and even climbing stairs. Students will also learn how ASIMO was developed, understand the challenges of creating humanoid robots and explore potential future applications for robotic technologies.

To enter the contest, each school elects one class or group of students to represent the school in the competition. This designated group submits an essay of 1,000 words or less describing their vision for the future role of humanoid robots. Entries are due by December 31, 2003. Information and contest entry forms are available at www.asimo.honda.com.

UPCOMING EVENTS:

February 4, 2004 DMAPT at Lamphere High School in Madison Heights (Tentative)

Don’t Forget: 2005 is The Year of Physics!!!