



The **BEACON**

News from
The Coalition for Excellence in Science and Math Education

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LOOKING AHEAD

The beginning of a new year is traditionally a time to look back over the past 365.24 days, and it's also a time to look ahead. Much, of course, will be made by the pedantic that this is the real millennium; however, biblical scholars tell us that Jesus of Nazareth was most likely born in 5 BCE, so for the super pedantic the millennium occurred a few years back.

I'd rather not look back or ahead a thousand years. That's far too great a distance for my limited vision. This last year has been fruitful for CESE. We continue to be a vital organization with a strong, active membership. We are involved in many things: judging science fairs, searching for alien life with SETI, reviewing textbooks, serving as an educational partner with the State Department of Education, and many other significant activities.

Looking ahead is a bit more difficult, but I'd like to suggest two additional areas where CESE may want to focus its time and energy. The first is the shortage of teachers in science and math. Over half of the secondary openings in the Albuquerque Public Schools at the semester were for math and science teachers. One of the math positions at a high school has been staffed by a substitute for the entire first semester. Solving a teacher shortage is no easy task. CESE can, I believe, add its collective voice to the discussion, and with our talented membership we should be able to propose various solutions. Quality education starts with qualified teachers.

A second area that CESE may want to expend some of its untapped energy is in building on the HotSpots program at Inez Science and Technology Magnet Elementary School. This highly successful program is a first-rate model of teacher professional development that could easily be expanded beyond the confines of local geology. It's not too hard to imagine the same kind of curriculum based on physics or chemistry. As we enter this new—or slightly used for the

pedantic—millennium, there is much to do. I have great faith that the members of this organization will continue to shape the future of science and math education in many positive ways.

—Steve Brügge, President

CESE JOINS EDUCATION PARTNERS

At the 14 December meeting of the Education Partners organization, the Coalition for Excellence in Science and Math Education was inducted into the membership of Education Partners. Education Partners (EP) is a coalition of a number of groups in New Mexico that are working to improve the quality of education in the state, and our membership in this prestigious group is a natural progression for us at this time. Their voice is heard by a wider and more powerful set of people than is ours.

The 14 December meeting's main purpose was to start construction on a legislative agenda brochure distilled from the various viewpoints of the members of the organization. The brochure would be a consensus document, so any idea that any one member objected to would not make it into the EP agenda. The purpose of the brochure would be to create a framework for future discussions during the legislative session.

We decided to make the report of the Education Initiatives and Accountability Task Force (EIATF) as our baseline. There are a number of areas in that report that are controversial but it covers all the areas of interest to EP more comprehensively than any other agenda. Also, the report of the Legislative Education Study Committee (LESC) tracks it very closely, and the Legislative Finance Committee is very supportive of the EIATF recommendations.

The areas where the consensus differed from the

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www.CESAME-NM.org

The Coalition for Excellence in Science and Math Education (CESE) comprises interested citizens throughout New Mexico and the nation, including scientists, engineers, educators, university faculty, members of the clergy, and parents. CESE is nonpartisan and non-sectarian, and welcomes members of all religions and political philosophies. This coalition works to improve science education and science literacy for all citizens. The organization also provides support to teachers, students, the public, and state officials who deal with education issues. We want to ensure that the Beacon of Enlightenment is not extinguished in 21st century America.

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Membership Information: please contact any of the above officers. The only requirement for CESE membership is the acceptance of our mission, above, as a statement of the organization's purpose. The CESE annual dues are currently \$25 for an individual, \$35 for a family membership, and \$10 for students. This is to help defray costs of postage, insignia, envelopes, etc. No members will be asked to do anything more than they wish to do on behalf of the common cause. Please make checks payable to CESE and mail to 11617 Snowheights NE, Albuquerque, NM 87112.

EIATF recommendations concerned teacher pay and school system governance. The EP felt that the pay scales in the EIATF proposal were considerably higher than the already generous recommendation of the State Board of Education, and felt that these higher scales would not be looked on favorably by the Legislature or the Governor's office. However, the EIATF's three levels of compensation based on three levels of licensure and a dual track proposal for master teachers and administrators was considered to be worth additional study and possible adoption at a later date.

The EIATF's proposals on governance did not sit well with the group even though a few members supported it. When CESE stated that our data indicate that student performance was independent of the governance system, the matter was dropped. Governance is a big issue with a number of groups in the state that want to improve education. The organization, "Think New Mexico," of which former governor Garrey Carruthers is a member and which in turn is a member of EP, favors sweeping reorganization. The Albuquerque Chamber of Commerce, which is not a member of EP, also has a reorganization plan. Whether or not it comes before the legislature and whether they approve it is an open question at this time.

The next meeting of EP will be on 12 January 2001 when we will review the final product before the legislature convenes on 16 January. There will be a meeting of EP every Monday during the session right after the meeting of the House Education Committee adjourns, tentatively at 10:00 a.m.

—Bill MacPherson, Board Member

**BIGGEST SCIENCE PROJECT
GETTING BIGGER**

CESE involvement in the SETI@Home distributed computing project has more than doubled since our announcement last issue! If you have not joined in yet, sign-on to participate in the largest scientific research project ever.

All you need is a computer, an internet connection, and an interest in playing a role in what could be the most important scientific discovery in history: finding radio evidence of extra-terrestrial intelligence.

For more information, e-mail Timothy Moy (tdmoy@unm.edu), or check out the SETI@Home website:

<http://setiathome.ssl.berkeley.edu>

and join "The CESE Ducks."

—Tim Moy, Vice President

CINDY WINS!

Our congratulations to CESE Board member Cindy Chapman for being elected to the board of the National Council of Teachers of Mathematics (NCTM).

This is no surprise to those who know that Cindy, who has attended all the annual meetings since 1990, delivered an address completely in Spanish in San Diego (1996—the same year she was a Presidential Awardee), was on the San Francisco program committee, and a featured speaker at the Chicago 2000 event where approximately 93,000 attended.

This large organization (about 110,000 members) was the first to prescribe standards back in the 1980s. NCTM continues to emphasize **high** and **rigorous meaningful** mathematics for **all** students for **understanding**. NCTM publishes a quarterly research journal and several monthly magazines, provides professional development, and awards grants through its Mathematics Education Trust.

HIGH PRAISE FOR NCTM

From WebNews Update

The Council of Scientific Society Presidents (CSSP)—the leadership organization for more than 1 million scientists and science educators—recently commended NCTM for producing Principles and Standards for School Mathematics.

The CSSP is a nonprofit organization comprising presidents, presidents-elect, and immediate past presidents of more than 60 scientific societies and federations, whose combined membership numbers more than 1 million. CSSP serves as a strong voice in support of science and science education, as the premier national science leadership institute, and as a forum for open, substantive exchanges on current scientific issues.

In Memoriam

Tom Manaster 1944 - 2000

Family, friends (a number of whom are CESE members), and neighbors gathered at Tom and Pat Manaster's home recently for an emotional farewell following Tom's sudden fatal heart attack. Tears and laughter were interspersed as family members and guests related anecdotes.

Tom Manaster was always thinking; he was a philosopher and a history buff. He took classes at UNM to keep learning—something few of us do. Furthermore, he shared what he had learned with us. In fact, it seemed as if the sharing may have given him as much or more pleasure than the learning, at times. I don't know that I have ever met a person more kind or more anxious to help others.

Tom also had good ideas. His "Distant Learning" concept was great. He worked on it and helped to get the process going in New Mexico. Perhaps, someday, there will be a student or group of students in a small town in rural New Mexico who will learn advanced chemistry through the televised teaching that Tom worked so hard to get approved.

Most of all, I will remember Tom's testimony at the October 1999 meeting of the State Board of Education at which the Board put evolution back into the state science standards. When it came time for public input, there were a couple of creationists and even more scientists who spoke. I remember giving what I thought was a rather passionate plea for the correction of the standards, but, when it was Tom's turn, I learned what passion *really* is. Several years earlier, he had surgery to remove a brain tumor. It had left one side of his face with an obvious droop, but it prolonged his life. When he spoke to the board, he didn't speak of evidence, or laws - he spoke of trust in the scientific method that allowed doctors to derive a treatment that would let him survive an otherwise fatal brain tumor. He asked why anyone would not want our children to be taught the scientific method and the results of scientific research. He allowed that all had a right to their own beliefs, but that none had a right to deny the effectiveness of scientific accomplishments - which included the formulation and testing of the theory of evolution.

While he was speaking, I watched the faces of the Board members. Almost to a person, their eyes were glistening with tears. I don't think they felt sorry for Tom - I think they heard his message. It was powerful.

Tom's speech, in and of itself, probably did not cause the Board to vote evolution back in that day. But, he most surely put the icing on the cake. Wherever he may now be, I hope he is aware that he had a positive impact on the world and sincerely hope he is getting to enjoy some of that icing.

—M. Kim Johnson

Dear Pat,
I have been fortunate to have avoided being in a war and to have had grandparents with the foresight to leave Europe before the holocaust. So my experiences with death have been mostly with friends and relatives. But each loss has been extremely painful.

I write this with tears clouding my eyes. I loved Tom Manaster. I will miss him terribly. I will miss his frequent musings, his strong declarative sentences, his quickness to apologize, his humility, his concern for those around him and the world, his never-ending search for truth and knowledge. I never saw a person disfigured by massive surgery. Rather, looking at Tom, I only saw this sweet, gentle, extremely caring man. I looked straight into his heart, and loved the soul I saw.

I am so pleased that Tom joined the Ducks. This non-scientist with the inquisitive mind added heart and soul to our group. And, in turn, I believe that the Ducks added meaning and value to Tom's life. I fondly recall our thread on "Ducks and Swans." And Tom indeed was a swan.

Death is so final and so utterly unacceptable to me. Yet we are faced with the reality of finite lives and even a finite universe. Each life is a rock, a pebble, or a grain of sand. When finally cast into the waters, all that is left are ripples.... and all the ripples eventually fade, regardless of the size of the splash.... and we are finally left only with memories.

Life is very precious, but in our daily lives it sometimes takes the death of a beloved friend to reorient ourselves, to decide what's really important.

I have been too busy to even keep up with all the things I have to do. But I cannot let the passing of an earthly angel go unnoticed.

Tom and I often communicated privately about disagreements and agreements. I have kept all these correspondences. Last July, I wrote to Tom: "You're a very good man, Tom Manaster! It is an honor to know you."

I don't believe in an afterlife, though I would love for it to be true. If it is, Tom is in heaven, smiling as always, and planning to take his next class in philosophy.

—Marshall Berman

Intelligent Design Proponent Blitzes New Mexico

University of California, Berkeley, law professor Phillip Johnson is widely recognized as the father of the Intelligent Design movement. He is the author of *Darwin on Trial*, *Reason in the Balance: The Case Against Naturalism in Science, Law & Education*, *Darwinism Defeated?*, *The Wedge of Truth: Splitting the Foundations of Naturalism*, and many others.

Johnson is beginning a siege of New Mexico, as you can see below. Dave Thomas will discuss problems with Intelligent Design at the Sandia talk on Feb. 20. (Tentative)

Please try to attend one or more of these talks and perhaps help the audience understand what science *really* means.

—**Marshall Berman**

Phillip Johnson's schedule:

Monday February 19th 2:00 PM - UNM - Woodward Hall
(See Page 6 for Dave Thomas at 4:00 PM, Kiva Auditorium.)

Tuesday February 20th 12:00 Noon - Sandia Labs - Steve Schiff Auditorium
(Live video link to Livermore, California, Sandia Labs)

Tuesday February 20th 7:00 PM - NM Tech in Socorro - Macey Center
(Reaching NM Tech and all of Socorro)

Wednesday February 21st 12:00 Noon - Los Alamos Labs - Physics Auditorium (Reaching Los Alamos Labs and Los Alamos)

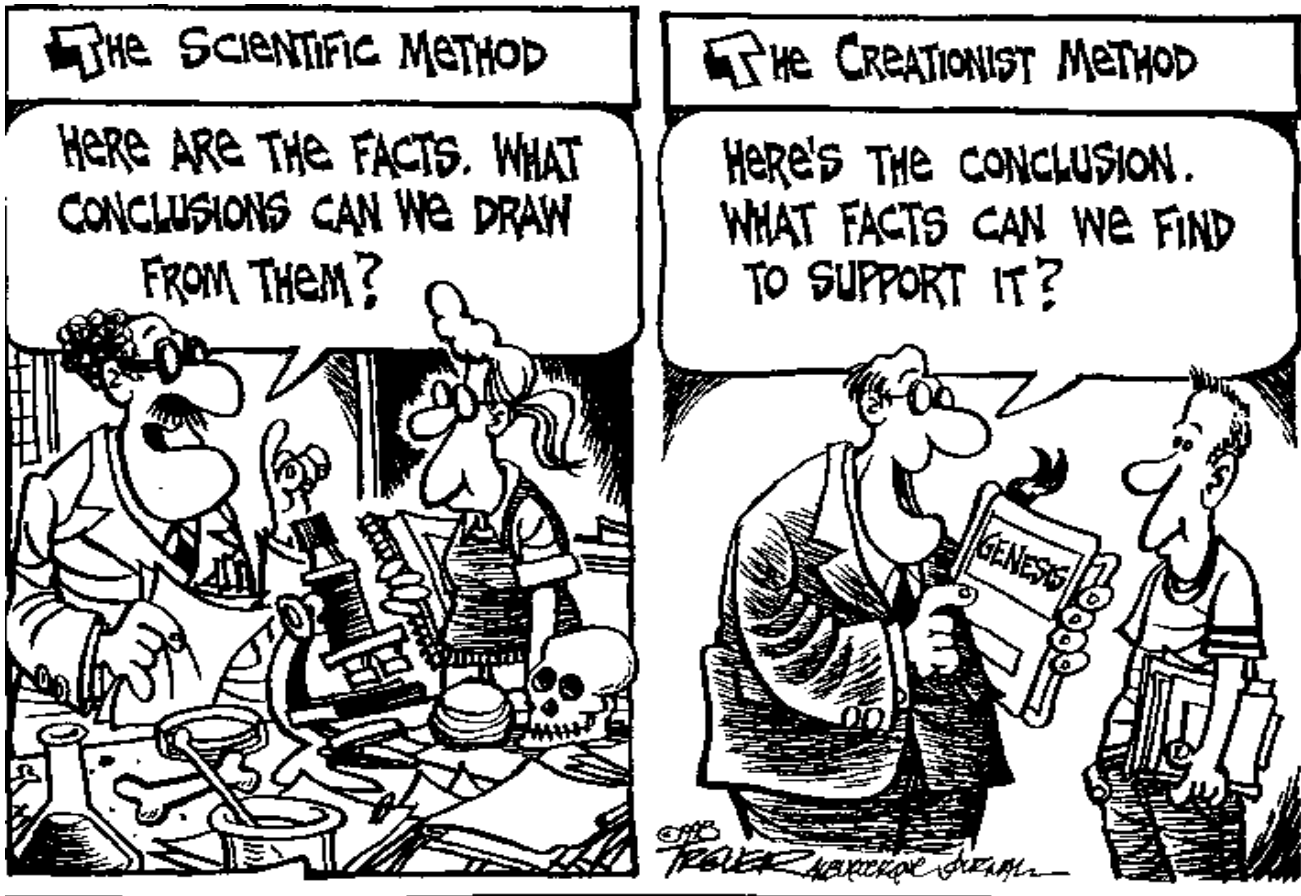
Part 1- Wednesday February 21st 7:00 PM - Calvary Chapel - 4001 Osuna Rd NE -

(A basic talk for everyone - Youth outreach night)

Part 2- Thursday February 22nd 7:00 PM - Calvary Chapel - (A talk for everyone, but geared toward the more seasoned in the debate.)

Each session will be about an hour-long talk followed by a 30-minute question and answer period .

Phillip Johnson will also be having a special meeting with UNM Christian professors and a second meeting with the UNM Law School.





Failed Books?



A recent study of science textbooks by North Carolina State University professor John Hubisz has received much press. One of his basic findings is that many of the books used in middle schools are really terrible. The book I have in my eighth-grade classroom is Prentice Hall's *Exploring Physical Science*. It is one of the books singled out as deeply flawed.

I certainly don't want to defend bad books, but I think the concern is overstated for a number of reasons. First, there are those errors that are simply inherent in anything that is published: the misplaced decimal, incorrectly labeled diagram, misspelled word, etc. I don't find the error rate in my classroom text to be any higher than other texts I have used.

Second, in the age of the internet, publishers post corrections on the web for all to see. The Prentice Hall correction page is easy to access and is quite complete. (www.phschool.com). Even five years ago this level of instant information would not have been available. I think it's to the publisher's credit that corrections are just a mouse click away.

The third and most significant issue to me, however, is that the textbook should be one small part of any middle-school curriculum. Having a well-trained, enthusiastic teacher is far more important than the book that is used. I would much rather have a solid teacher with a less-than-perfect book than a flawless book with a poorly trained teacher.

As many experienced teachers retire in the next few years, the need to replace them with talented new teachers will become more and more of an issue. There is little doubt that the individual teacher has far more impact than the particular text used. I cannot remember the title of a single book I used in junior high, but I can recall specific details about almost all my teachers and the lessons they brought to life.

We should not let second-rate books into our schools. States need to invest more into instructional review processes, and teachers need to be given sufficient time to review books they will use for five or more years. But in the big scheme of things, finding teachers who know science and have the gift to pass on their knowledge is the real challenge facing our society.

—Steve Brügg

Another Opinion

Friends,

I have grumbled before about these so-called "rankings." Saying that NM ranks 37th, or 48th, or whatever, depends entirely on what you want to show.

Suppose you separate all the states into clusters of similar states, and then look at the rank of NM within its cluster. I divided states into high minority, high fraction of college grads, high per capita spending on education, and "other" (i.e., low on all the previous quantities). I actually used 11 properties to discriminate.

I pulled NAEP 4th grade math out of the hat and looked at rankings within clusters. NM was in the high minority cluster, obviously. Hey, it ranked above the median in its cluster! The ranking was (best to worst) TX, AZ, FL, HI, NM, SC, AL, CA, MS, DC.

We can say that NM ranks 5th in the nation (very quietly, in its cluster). MD is the very last in the high-college-graduate cluster. Can we say that NM ranks way above MD?

I wish we could get through to the Greater Albuquerque Chamber of Commerce, the legislators, and the school board candidates, that saying "NM ranks such-and-such" doesn't mean doodly unless you give some background for the ranking.

—Walt Murfin

The most exciting phrase to hear in science, the one that heralds new discoveries, is not "Eureka!" but "That's funny. . . ."

—Isaac Asimov

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Working on your behalf

Tim Moy spoke on 'Science and Creationism' at the Unitarian Universalist Westside Congregation in Rio Rancho on 4 February.

Two of Steve Brugge's science bowl teams took first and third places at the 3rd annual New Mexico Middle School Science Bowl held the first Saturday in December at the Albuquerque Academy. The first-place team and Steve have won a trip to the national competition in Washington state in February. As a teacher in the public schools, Steve says, "It is especially gratifying to see kids in the public schools go head-to-head with some of the best private schools and come out on top."

CESE published ***Basing Educational Reform on Actual Data: A White Paper Providing Information on Past Educational Reform Results.***

Technical Problems with Intelligent Design Theory
will be presented by CESE Secretary, David E. Thomas
4:00 pm Monday, Feb. 19th, 2001
Kiva Lecture Room, UNM*

The talk is sponsored by the College of Arts & Sciences, and the Departments of Psychology, Physics & Astronomy, Earth & Planetary Sciences, Biology, and Chemistry. Everyone welcome!

Dave Thomas is president of the science group New Mexicans for Science and Reason <<http://www.nmsr.org/>> and also is a scientific/technical consultant for CSICOP (Committee for Scientific Investigation of Claims of the Paranormal, <<http://www.csicop.org/>>), the publishers of Skeptical Inquirer (SI). He has published several articles in SI on the Roswell and Aztec UFO Incidents, as well as on the Bible Code. Additionally, he has written several articles for the Reports of the National Center for Science Education (NCSE) <<http://www.natcensci.ed.org/>>, and is a recent recipient of NCSE/s "Friend of Darwin" award.

***Best Bet to find Kiva**, use paid parking at southwest corner of Johnson Gym (east of Popejoy) and ask.