

The **BEACON**

News from

The Coalition for Excellence in Science and Math Education

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PRESIDENT'S MESSAGE

CESE has been an extremely active organization ever since it's birth on October 25th, 1996. This year was no different. CESE has continued to strenuously pursue our mission of "improving science and math education and science literacy for all citizens." Despite our success, along with many other organizations and individuals, in getting an excellent set of science standards approved by the State Board of Education, Intelligent Design creationists continue to misinterpret and misconstrue the standards to allow teaching ID or creationism. The newly "evolved" ID political strategy is to teach "the evidence against evolution." Although evolution is an active area of continuing scientific research, none of the so-called "ID evidence" is controversial in the scientific world.

ID is almost exclusively a religious and political issue, despite their frequent contention that it is not. They also have distorted the issue in the minds of the lay public that it is a question of religion versus atheism, which it is not. They assume the status of victims of discrimination by biased and close-minded scientists. They are very politically astute and have managed to generate controversy in at least 19 states. The Kansas State Board is again poised to rewrite the state standards after a sham trial ("Kangaroo court"), and very likely will adopt the so-called minority opinion that would

open the door to supernaturalism in science teaching.

As we know, the issue is far broader than teaching evolution in public schools. That is just the "wedge" by which the Discovery Institute (DI) and the Intelligent Design movement intend to change our entire culture. In their own words: "Discovery Institute's Center for the Renewal of Science and Culture seeks nothing less than the overthrow of materialism and its cultural legacies... To see design theory application in specific fields, including molecular biology, biochemistry, paleontology, physics and cosmology in the natural sciences, psychology, ethics, politics, theology and philosophy in the humanities; to see its influence in the fine arts. To see design theory permeate our religious, cultural, moral and political life." A DI senior fellow, William Dembski, has written: "From the sixth century up to the Enlightenment it is safe to say that the West was thoroughly imbued with Christian ideals and that Western intellectual elites were overwhelmingly Christian. False ideas that undermined the very foundations of the Christian faith (e.g., denying the resurrection or the Trinity) were swiftly challenged..." Do I sense a nostalgia for the Inquisition in these remarks?

CESE's mission statement includes the sentence: "We want to ensure that the beacon of the enlightenment is not extinguished in 21st

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century America." We are therefore strongly opposed to goals of the Intelligent Design movement and all who advocate it and similar policies that would deny the constitutional separation of church and state, and promote a specific religious view reaching from public school classrooms to the entire structure of the government and culture.

On the tactical front, CESE opposed showing the ID video, "Unlocking the Mystery of Life," on public television without commentary or disclaimers. IDnet first tried this in May, 2003, and were rebuffed. They tried again in May, 2004 and were again unsuccessful. They tried once more in January 2005 and failed. This time, they cried "censorship" and assumed the status of victims. Ultimately they raised the funds and purchased time on KOB TV, and will show the video on May 22. Its status as a paid "infomercial" is now confirmed and this one-sided, highly biased, but very slick video will be presented to an audience that is predominantly unscientific and perhaps receptive to the ID message, which, despite disingenuous protestations, is actually religious and political.

CESE also continued its efforts to improve science and math literacy. We analyzed two very important international tests and reported these results in past and current issues of the Beacon. Our members gave many talks at education, scientific and creationist conferences, and wrote articles on issues related to our mission - see our website at www.cesame-nm.org.

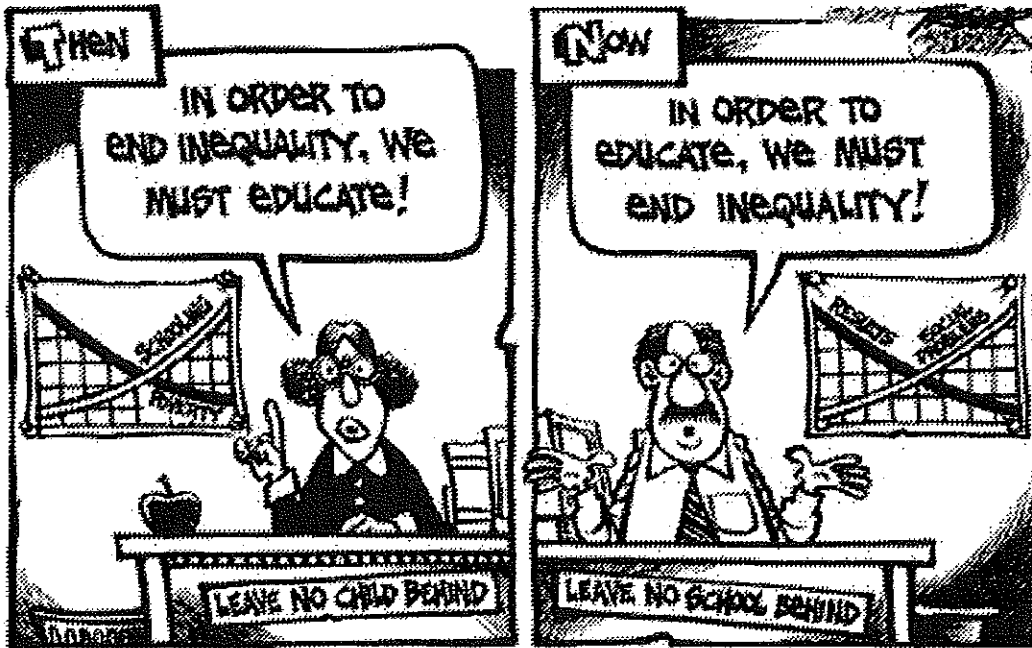
I now conclude my second, but non-consecutive, presidency of this marvelous organization. I'm honored to have served, and very proud of our extremely competent Board and officers and active members.

Marshall Berman
CESE President

NINTH ANNUAL MEETING

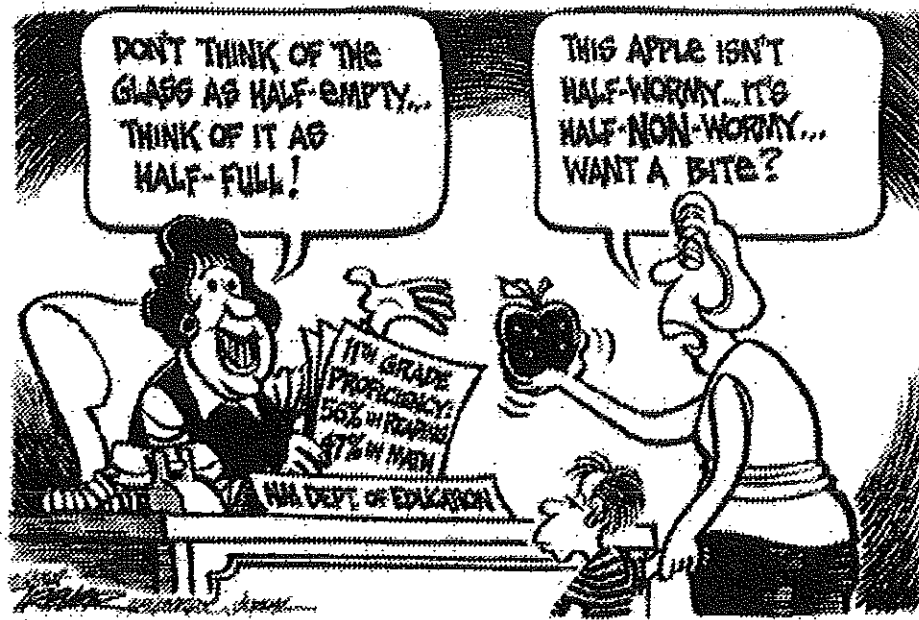
Please mark your calendar for the 9th Annual Meeting on Saturday, June 25, 2005. at the UNM Law School, Room 2404, 1117 Stanford, NE, Albuquerque, NM. Our keynote speaker will be Albuquerque Journalist, John Trever, one of the nation's most outstanding and insightful editorial cartoonists. Please RSVP to Marilyn Savitt-Kring at mmkring@juno.com or 505-856-6654.

TOONS BY TREVER

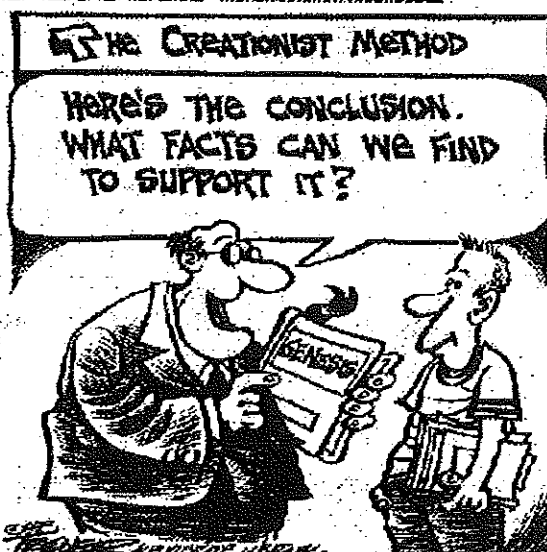
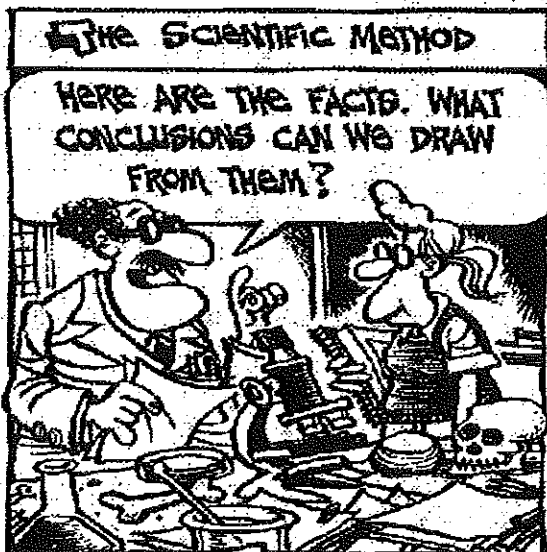
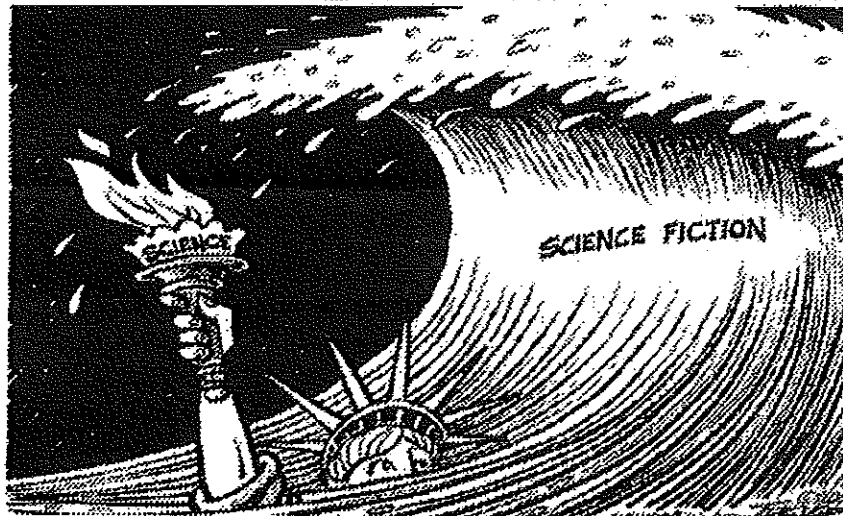


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MORE
TOONS
BY
TREVER



MILIEU EFFECT REVISITED

A few months ago we discussed the “milieu effect”: the effect that school conditions have on scores (“The Kid in the Next Desk”. The BEACON, Vol. VIII No. 1, March '04). We saw that scores of every group were lower in schools with high fractions of minorities, poverty, or English deficient students. PISA* found an even greater effect. A school’s percentage of students whose parents held high status occupations had a greater effect on scores than did the status of individual students’ parents in most countries, including the United States. The status of the majority of classmates is more important than an individual student’s status.

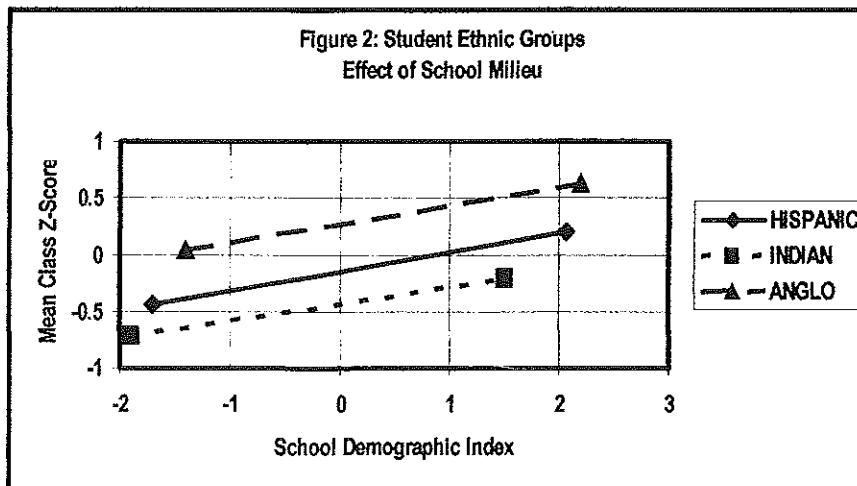
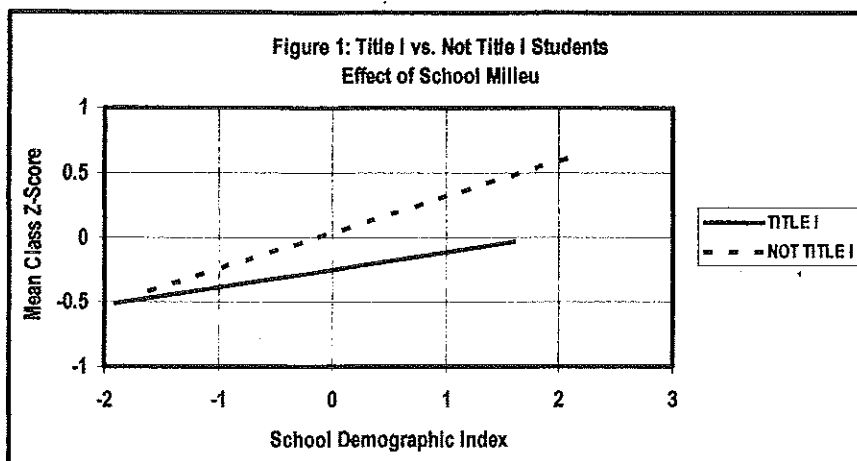
Is this also true in New Mexico schools? Is the classroom milieu more important than an individual student’s background? I found the unique combination of school fractions of Title I students, English Language Learners (ELL), and minority students that maximally correlates with school scores. This “**Demographic Index**” has a mean of 0.0 and a standard deviation of 1.0. Schools with few poor, English deficient, and minority students have a high Demographic Index; we might call them “high status” schools. **Figure 1** shows the average 2001 scores of poor (Title I) and not-poor (not Title I) students against each school’s Demographic Index. Scores are referenced to the state average for each grade. Z-scores have a mean

of zero and a standard deviation of +1.0; thus, a Z-score of +1.0 is one statewide standard deviation above the statewide average score for each grade. The units of calculation were Z-scores averaged over all subjects for every grade above third in every elementary and middle school in New Mexico, except for those having fewer than 10 students in a grade. This plot and those following show averages; there are many exceptions. The difference in the scores of not-poor students between high and low

status schools is greater than the average difference between not-poor and poor students. The effect of school demographics on scores of poor students is not as great as the effect on not-poor students. The ends of the lines indicate approximately the highest and lowest Demographic Indexes for each group.

Figure 2 shows the scores of Anglo, Hispanic, and American Indian students as a function of school Demographic Index. Each ethnic

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*See Page 8 of March '05 Beacon.

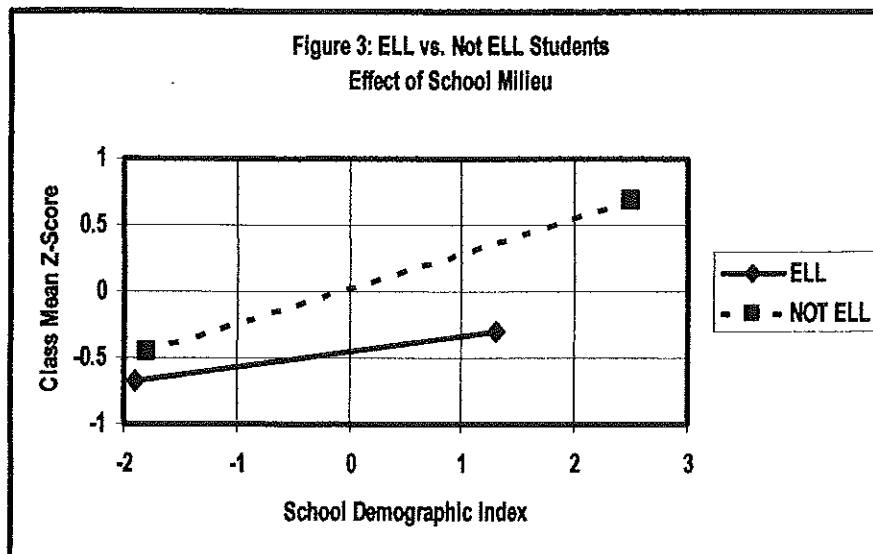
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Group is impacted about equally.

The difference in Hispanic scores between students in low status schools and those in high status schools is greater than the average difference between Anglo and Hispanic students' scores.

Figure 3 shows the effect of school demographics on students who are English learners (ELL) and those who are not. The effect of school milieu is not as great on English deficient students as on English competent students. English competent students pay a severe penalty for attending schools with unfavorable demographics. The penalty is larger than the average difference between ELL and not ELL students.

The Demographic Index alone explains slightly over 50% of the variance in average Z-scores. Except at the extreme ends, the distribution of schools along the demographic index is quite uniform. There are an equal number of students in low status schools and high status schools in New Mexico. Members of disadvantaged groups—poor, minority, or English deficient—are more likely to attend low status schools, although there are exceptions. In most cases the school milieu is at least as important as what an individual student brings to the school. This points up once more the complexity of the factors



influencing performance. Simplistic attribution of a single factor to explain low performance of some groups is nonsense. Performance is a complex function of teacher competence and commitment, teacher-student relations, curriculum, student motivation, student demographics, parent and community attitudes, and classroom milieu.

The PISA authors suggest some possible reasons for the strong influence of the milieu or contextual effect. They postulate greater parental support in high status schools, fewer disciplinary problems, better teacher-student relations, higher teacher morale, and a faster paced curriculum. Peer pressure and competition probably play a role. Perhaps high status schools have a stronger focus on preparing students for college. I personally believe that shared expectations could be a major factor. People living in homoge-

neous neighborhoods probably share attitudes and child-rearing practices. Whatever the reasons, it does not always make sense to shift students arbitrarily to low poverty, low minority schools. Although scores follow the school milieu on average, some low status schools get very respectable scores, and some high status schools do not do nearly as well as we might expect. School milieu explains about half of score variance. That means that about half can be attributed to staff competence and commitment, good teacher-student relations, parental and community support, student motivation, and perhaps to factors we aren't yet aware of.

Walt Murfin
CESE Statistician

(Dues and Donations cheerfully accepted year 'round)

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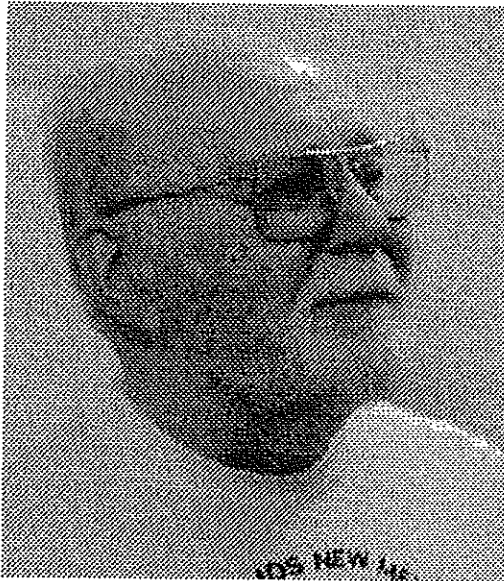
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RAY ROGERS, CESE CHARTER MEMBER

July 21, 1927 - March 8, 2005

Raymond N. Rogers of Los Alamos died March 8, 2005 after a long illness. He was born July 21, 1927 in Albuquerque, NM. He spent his youth in California and, after his father died, he contributed to the family income as a trumpeter with local bands. He also became chief chemist at an oil refinery at age 15 when many positions were left open during the war. In 1945 he enlisted in the U.S Navy and served as a radar technician during World War II. The GI Bill allowed Ray to complete his education at the University of Arizona in chemistry. His expertise in thermal analysis brought him to the Los Alamos Scientific Laboratory in 1951. He became a group leader of an explosives research-and-development group there and was elected Laboratory Fellow in 1981. He later worked for the International Technology division, retiring in 1988. He served on the Department of the Air Force Scientific Advisory Board from 1987 until 1992 with the equivalent rank of Lt. General, receiving their Distinguished Service Award. He received other awards and recognitions from LANL and professional organizations. He was granted a sabbatical in 1968 to pursue post-graduate studies in archaeology.

For a number of us in NMSR, Ray Rogers was a friend. He was a Fellow at Los Alamos National Laboratory, and tried to be an excellent, open minded scientist in all things. In particular, he had no pony in the "Shroud of Turin" horserace, but was terribly interested in making sure that neither proponents nor skeptics let their scientific judgment be clouded by their preconceptions. He just wanted to date and analyze the thing. He died on March 8th from cancer. He was a good man, and tried his best to do honest science.

Kim Johnson

He was appointed Director of Chemical Research for the Shroud of Turin Research Project in 1978, applying thermal methods to the study of this relic. In recent years, he further researched material relevant to the dating of the Shroud, publishing his findings in *Thermochemica Acta*. He has also published popular articles on dogs and firearms as well as papers on chemistry, archaeology/anthropology, soil science, and energy. He has served as an expert witness on several legal actions. (See more at www.nmsr.org)

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PLAN NOW

Annual meeting:

Saturday, June 25, 2005, 1:00 PM

UNM Law Building, Room 2402

1117 Stanford NE, Albuquerque NM

Guest Speaker: John Trever

Award Winning Syndicated Cartoonist

with our own Albuquerque Journal

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