

The 10<sup>th</sup> annual meeting of the Coalition for Excellence in Science and Math Education (CESE) was convened by Kim Johnson, president, at 1 P.M., Sunday, June 11, 2006. About 55 people attended the event at the Maxwell Museum of Anthropology, University of New Mexico.

CESE was created in 1997 when a group of science activists decided that that New Mexico was badly in need of a group of citizens dedicated to strong public school science education, free of religious zealotry. CESE's first mission was to overturn the the revised science standards that had removed all mention of evolution and the age of the earth. Over time, CESE did not limit itself to fighting creationists, but also promoted all science and math education, eventually evolving to include all education. However, creationism/intelligent design (ID) has continually gotten in the way. Like ducks in a shooting gallery, no matter how many times you shoot them down, they keep popping up again.

CESE's web site URL is:

<http://www.cesame-nm.org>

Kim then asked members in the audience to introduce themselves.

Afterwards, Kim noted that Marshall Berman had served on the New Mexico State Board of Education and that Walt Murfin, CESE's statistician, had analyzed test scores for the NM's State Department of Education. Kim has recently asked Walt to look at Rio Rancho's test scores.

Other events have impacted New Mexico. Kansas' State Board of Education has recently redefined science to allow for supernatural explanations. The U.S. is now at the level of a third world country with respect to its overall understanding of science, declining after the lunar landings.

On the positive side, the Dover decision has negatively impacted the advance of ID, probably influencing other school districts, such as Rio Rancho. Rio Rancho's ID friendly policy 401 was amended to match New Mexico's science standards after complaints from teachers, the scientific community, and parents. Two pastors on Rio Rancho's school board apologized for not including the teachers' input, although the teachers did object as early as August 2005. Kim is also following the ID situation in other states around the country, such as South Carolina and Florida.

Former state Senator Pauline Eisenstadt in 1997 introduced a bill that would require New Mexico to adopt national science standards. She tried to convince the legislature of the economic value. The bill failed, but we have won other battles. Pauline is now serving as a community advisor to the Intel board, along with creationist Rio Rancho school board member, Don Schlichte. Pauline has said that the Christian Coalition is always present in Santa Fe; whereas, the scientists disappear after controversies end.

Kim said the best way to be effective and influential in policy making is to “work on the inside.”

Kim then introduced guest speaker, Nick Matze, Public Information Project Director, from the National Center for Science Education (NCSE). Nick spent a year working on the ID case, *Kitzmiller v. Dover*, on the side of the plaintiffs legal team. He provided scientific advice and researched the creationist origins of the ID movement. This work led to the discovery that early drafts of the well-known ID textbook, *Of Pandas and People*, replaced the word creationist with the words intelligent design in the later editions. Nick also helped prepare the scientific cross-examination of ID proponent, Michael Behe. The episode dealing with the evolution of the immune system has been written up in an essay Nick co-authored for *Nature Immunology*, May 2006, 433 – 435.

Nick’s talk was entitled, “Design on Trial.” He began by saying that NCSE holds New Mexico in high regard for being able to organize people and being ahead of the game. NCSE is confident that New Mexico can effectively combat whatever challenges the creationists attempt.

Nick said NCSE is a major episode of his career. NCSE started in the 1980’s as a watchdog group. It has creationist/evolution archives, and they network during crisis. They are also an information resource for teachers, students, and the media, at this URL:

[ncseweb.org](http://ncseweb.org)

They also set up e-mail lists to connect activists. Creationists succeed when people are apathetic.

Nick presented an outline starting with the 1) Controversy; 2) Historical Background; 3) The Trial, *Kitzmiller v. Dover*; 4) Science vs. “Intelligent Design;” 5) History vs. “Intelligent Design.”

Many publications ran stories on the evolution/creationism controversy, including *Time*, *Newsweek*, *Science Magazine*, James Dobson’s *Focus on the Family*, *Esquire*, *Nature*, *National Geographic*, and *Scientific American*. There were also comic strips, such as “Opus,” and political cartoons, especially targeting Pat Robertson and the Kansas State Board of Education.

The *Origin of the Species* was published in 1859. By 1909, public education began, along with teaching of evolution. In the *Scope v. Tennessee Monkey Trial* in 1925, the Americans for Civil Liberties Union (ACLU) actually lost, and evolution was banned in many states.

After the Russian satellite Sputnik was launched in 1957, efforts to improve science education began, including the teaching of evolution. The next trial involving evolution was *Epperson v. Arkansas* in 1968. That decision ruled that “the Constitution does not

permit a state to require that teaching and learning must be tailored to the principles or prohibitions of any particular religious sect or doctrine.”

In 1974, scientific creationism was born. Some of its proponents were Henry Morris and Duane Gish, along with the Institution for Creationist Research and the Creation Science Research Center. What followed were the equal time laws that stated, “Either teach both evolution and creation science, or neither.”

In 1982, *McClellan v. Arkansas* challenged the constitutionality of that law, which required Arkansas schools to give balanced treatment to creation science. The ACLU filed on behalf of many groups, stating that it violated the establishment clause of the first amendment of the Constitution. Young earth creationist with a Ph.D. in biology, Dean Kenyon, was scheduled to be a key expert witness; however, he fled the trial, after seeing four of the state’s witnesses demolished. Judge Overton struck down the Arkansas law. He said, “No group, no matter how large or small may use the organs of government, of which the public schools are the most conspicuous and influential, to foist its religious beliefs on others.”

The next case was *Edwards v. Aguillard* in 1987. In 1981, Louisiana passed another bill called the “Balanced Treatment Act,” which was a copy of the Arkansas bill. They embraced a new strategy making “creation science” less Biblical. An affidavit by creationist biologist Dean Kenyon contained a strange definition of “creation science.” He said that “creation science” is as scientific and non-religious as evolution. He also said that “creation science” also means origin through abrupt appearance in complex form, which includes biological creation, biochemical creation, and cosmic creation and that “creation science” does not include catastrophism, worldwide flood, or any concepts from Genesis or other religious texts. The affidavit also stated that textbooks were “biased” in favor of evolution, and that creation science has educational merit and could therefore be taught in the classroom. The Supreme Court ruled in favor of the judgement of *McClellan* in a 7-2 decision, declaring that the law violated the establishment clause of the first amendment. The Kenyon affidavit was ignored, except by Justice Scalia.

In 1989, the first of the creationists’ textbooks appeared, called *Of Pandas and People*, written by Percival Davis and Dean Kenyon. The new term “intelligent design” (ID) was born. Their definition of ID reads, “Intelligent design means that various forms of life began abruptly through an intelligent agency, with their distinctive features already intact – fish with fins and scales, birds with feathers, beaks, and wings, etc.” (pp 99-100) That definition was nearly identical to their previous definition of creation-science and evolution, that read, “creation science means origin through abrupt appearance in complex form, and includes biological creation, biochemical creation, (or chemical creation), and cosmic creation.”

There were major textbook adoption battles over this book: Alabama and Texas in 1990; Idaho 1991; Plano, Texas, 1991; Kansas and West Virginia 2000; and Dover, Pennsylvania 2004.

The Discovery Institute (DI) web site became less religious as their banners “evolved” from 1996 to 2005. The original site featured a reproduction Michelangelo’s Vatican ceiling painting of God touching Adam – the site was entitled, “Center for Renewal of Science and Culture.” It changed later to God touching a DNA molecule; then it became an image similar to the Eyeball nebula. A second version of the galactic eyeball, omitted “renewal,” and replaced it with, “Center for Science and Culture.” The latest version shows a star rising behind a planetoid, with the phrase “We the People” in the background; another DNA drawing; and a Leonardo DaVinci-like sketch of a man with his arms extended in various positions.

In October 2004, the Dover, Pennsylvania, school board was the first to mandate the teaching of ID in the U.S. A lawsuit, *Kitzmiller v. Dover area school district*, was filed by 11 parents from Dover. This school board wanted a test case, hoping that it would be eventually settled by the Supreme Court, as did the conservative Christian Thomas Moore Law group, founded by the owner of Domino’s pizza. This law firm offered their services free of charge.

Eric Rothchild of the Philadelphia law firm, Pepper Hamilton, along with the ACLU and the Americans United, represented the plaintiffs for the Separation of Church and State (AU). NCSE provided science advisors to the plaintiffs’ legal team. The expert witnesses for the plaintiffs were Kenneth Miller, biology, Brown University; Barbara Forrest, history, Southeastern Louisiana University; Kevin Padian, paleontology, University of California, Berkeley; Robert Pennock philosophy of science, Michigan; Brian Alters, education, McGill; and Jack Haught, theology, Georgetown.

Expert witnesses for the defense were Michael Behe, biochemistry, Lehigh University; Scott Minnich, microbiology, University of Idaho; Steve Fuller, society of science, and University of Warwick, UK. Those witnesses who dropped out were John Angus Campbell (rhetoric); William Dembski, leading ID proponent; Stephen Meyer, (director of the Discovery Institute ID program); Dick Carpenter, education; and Warren Nord, (theology).

Behe had previously denied the immune system evolved. He said in his book, *Darwin's Black Box*, "We can look high or we can look low, in books or in journals, but the result is the same. The scientific literature has no answers to the question of the origin of the immune system." See <http://www.nature.com/ni/journal/v7/n5/full/ni0506-433.html>

This denial provided one of the more dramatic episodes during the trial. Nick checked out a stack of publications on the evolution of the immune system, and they were presented in court. Behe admitted he had not read any of them. (Nick co-authored an article on this in *Nature Immunology* 7, 433 - 435 (2006) doi:10.1038/ni0506-433.)

Judge Jones, a George W. Bush appointee, ruled ID was not science, thereby, requiring Dover to rescind their policy. In a long, detailed ruling, he said, “The citizens of the Dover area were poorly served by the members of the Board who voted for the (intelligent design) policy. It is ironic that several of these individuals, who so staunchly and proudly touted their religious convictions in public, would time and again lie to cover their tracks and disguise the real purpose behind the ID policy.”

There will be a Nova episode to follow about this trial.

The Dover case showed the lineage of the text *Of Pandas and People*. The original draft contained the word “creationism” in several places. In later editions, “creationism” was edited out, replaced by the words “intelligent design.” These changes occurred after the Supreme Court ruling, *Edwards v. Aguillard*. Judge Jones noted that the definition of “creation science” was identical to the definition of “intelligent design.” ID was ruled as religion, not a scientific theory, and his ruling was a conservative judgement, based precedent.

Nick then discussed the origin of birds and feathers. He showed a slide of a very ancient, bird-like fossil, a non-avian dinosaur with feathers. This picture was adjacent to two quotes from *Of Pandas and People*. One, from page 106, read, “There is no gradual series of fossils leading from fish to amphibians, or from reptiles to birds. Instead, fossil types are fully formed and functional when they first appear in the fossil record.” The second quote from page 22 reads, “If only we could find a fossil showing scales developing the properties of feathers, or lungs that were intermediate between the very different reptilian and avian lungs, then we would have more to go on. But the fossil record gives no evidence of such a record.” Following this slide were several citations of articles in the press and scientific journals discussing this fossil find.

Nick then showed pictures of the evolutionary stages of the first feathers. The first stage showed the feather as a hollow cylinder. Stage two involved unbranched barbs attached to a calamus. Stage three showed a planar feather with unbranched barbs, fused to a central rachis and a feather with barbs attached at the base to a calamus. Stage 4 showed a closed pennaceous vane (hooklets on one barbule attached to grooves on barbules of adjacent barb). Stage 5 was a closed asymmetrical vane, resembling modern flight feathers. The function of feathers before flight could have been for insulation, color patterns for camouflage, species recognition, or sheltering eggs while brooding. These are examples of evolutionary “exaptation.”

Nick then discussed the information argument. He showed a slide that said entire genomes evolve, followed by another with a table presenting diagrams of molecular mechanisms for creating new gene structures. Many genes that duplicate themselves probably evolve new functions over time. Or some adjacent genes either fuse into one gene or split into two separate genes. The following slide showed a table with examples of new genes of known age.

In another quote by Judge Jones, relating to this, states: "...Dr. Miller refuted *Panda's* claim that evolution cannot account for new genetic information and pointed to more than three dozen peer-reviewed scientific publications showing the origin of new genetic information by evolutionary processes."

Nick's next series of slides cited all the evidence for the evolution of the immune system. Then he showed a picture of the stack of nine books and 58 peer-reviewed papers he gathered for the Dover trial to be refute Behe's claim "that science would never find an evolutionary explanation for the immune system."

*The New Yorker* magazine, December 2005, ran a cartoon that said, "At the trial, Michael Behe, the leading intellectual of intelligent design, was cross-examined with cheerful mercilessness by Eric Rothschild. For six weeks, the courtroom of Judge E. John Jones was like the biology class you wished you could have taken."

The newspaper the Philadelphia Inquirer, 12-21-05, said, "a judge ruled it a 'relabeling of creationism' and said it had no place in a 9<sup>th</sup> grade science class."

Nick then presented the evidence of early editions and drafts of *Pandas and People* that showed that intelligent design equals creation science. The original title of *Pandas* was *Creation Biology* in 1983, followed by *Biology and Creation* in 1986, then *Biology and Origins* in 1987. In the 1987 version, the word "creation" was replaced with the words "intelligent design." Likewise the words "intelligent Creator" were replaced with "intelligent agency," the rest of the text left unchanged.

Nick's next slides presented graphs of the number of times "creation" and "design" appeared in *Pandas*. In the earlier *Pandas* editions, the linear graph showed a higher count for the word "creation," and a lower count for the word "design." Around 1987, the number of times "creation" appeared dropped, and the appearance of the words "design" increased.

As *Pandas* evolved, Nick's "missing link" was found in the phrase, "Evolutionists think the former is correct, *creationists* because of all the evidence discussed in this book, conclude the latter is correct." The later drafts removed *creationists* and replaced it with "design proponentsists {sic}."

Judge Jones' opinion concluded that the evidence the plaintiffs presented in court indicated that *Pandas* went through many drafts before and after the Supreme Court decision, *Edwards v. Aguillard* (the 1987 decision that ruled the Constitution prohibits teaching creationism as science). Comparing the pre and post drafts of *Pandas*, Jones pointed out that the definition of creation science in the early drafts is identical to the definition of ID. Also, variations of the words "creationists" and "creationism" were deliberately replaced with the phrase "ID." These changes occurred right after the *Edwards* decision. Jones therefore concluded, "This compelling evidence strongly supports Plaintiffs' assertion the ID is creationism relabeled."

In conclusion, Nick showed several different newspapers covering the decision, along with supporting editorial cartoons.

He then answered questions from the audience: all of the creationist board members were voted out in the next election. It will cost \$1 million in legal fees and this figure was discounted. NCSE had been watching school board journals that said this case was not likely to win.

Returning to the business portion of the meeting, Jerry Shelton, CESE treasurer, presented his report. CESE's checking account was short on funds. There was \$7000 in CESE's savings account due to a generous donor. These funds were earmarked for the weekly "NMSR's Science Watch" radio show, on 1350 KABQ A.M. radio, Saturday at 2 P.M.

The proposed slate of officers and board members were presented as follows: Kim Johnson, president; Dave Thomas, vice-president; Jerry Shelton, treasurer; and Marilyn Savitt-Kring, secretary. Board members at large included Marshall Berman, Steve Brugge, Atilla Csanyi, Lisa Durkin, Jack Jekowski, David Johnson, Jesse Johnson, Marvin Moss, and Jim Stuart. Two board member slots were open.

David Johnson nominated Rebecca Reiss, a biology professor at New Mexico Institute of Technology, for one of the positions. Her nomination was seconded. Nancy Shelton, Beacon newsletter editor, moved we accept the slate by acclamation. After this motion was seconded, all voted in favor.

Following the business portion of the meeting, Dave Thomas performed a humorous juggling act.

The meeting was adjourned for food and conversation.

Respectfully submitted,

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