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MEMORANDUM

To: Parents, School Administrators, Science Teachers and School Board Members

From: IDnet Managing Directors and Managers

Date: December 19, 2002

Subject: Response to Resolution of the American Association for the Advancement of Science that seeks to Censor Intelligent Design

On October 18, 2002, the Board of Directors of the American Association for the Advancement of Science (AAAS) adopted a resolution which seeks to encourage public schools to ban “the teaching of ‘intelligent design theory’ as a part of the science curricula.” This effectively promotes an “**Evolution Only**” science curriculum. **Evolution Only** is also promoted by censoring not only ID but also core criticisms of evolution.

This memo explains why the AAAS resolution should be rejected. It covers the following points:

- **BRIEF SYNOPSIS OF THE EVIDENCE FOR INTELLIGENT DESIGN IN LIVING SYSTEMS**
- **RESPONSE TO THE AAAS RESOLUTION**
 - Summary of Resolution
 - Reasons Why Schools Should Reject the AAAS Resolution.
 - Short Response To the AAAS.
 - Detailed Reasons for Rejecting the Resolution.
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BRIEF SYNOPSIS OF THE EVIDENCE FOR INTELLIGENT DESIGN IN LIVING SYSTEMS

Intelligent design or “ID” is a scientific theory that some natural phenomena, including life and much of its diversity may arise from a process guided by some form of intelligence. ID theory dates back to the beginning of civilization and framed scientific inquiry until the late 19th century. Although ID theory is not new, recent scientific discoveries about the complexity of living systems and the universe have generated renewed scientific interest in the theory.

Evidence for Design in Living Systems.

Life appears designed. ID theory arises from scientific observations and analyses of patterns and systems that occur in nature, particularly those that occur in living organisms. Generally all scientists concede that living systems give “the appearance of having been designed for a purpose.” Systems that appear designed include sensory organs or “input devices” like eyes and ears; minds, other information processing systems and “application software” that process the input and generate output; a biological “language” that enables the processing of input and output; output devices like vocal cords that serve as speaker systems, and a variety of cellular clocks, machines, factories, transportation devices and conveyor systems that deliver manufactured products to precisely designated locations within the cell at the right time. Apparent design is reflected in the lexicon of biology: “Genetic *code*,” “*messenger* RNA,” and “the *blueprint* of life.” Although apparent design does not prove design, it is evidence of design.

Is the appearance of design just an illusion? ID scientists are investigating and collecting evidence supporting the view that the apparent design we observe in nature is real or true and not just an illusion. They do this in part by analyzing the biological “software” that provides the instructions for the assembly, maintenance, operation, replication and destruction of cells and the network of cellular systems that comprise the organism. These analyses use the same sorts of design detection methods that are used in other sciences such as archaeology, cryptanalysis, forensic sciences, and the search for extraterrestrial intelligence (SETI).

To test whether the apparent design in a biological system is real or just an illusion, ID scientists examine the evidence to determine whether it is more consistent with natural or intelligent causes; they seek to “rule in” or “rule out” natural explanations (i.e., some combination of natural law and chance). If law and chance can adequately explain an apparently specified system, then a design inference is not warranted. However, if natural causes are not adequate to explain the data, then design becomes the best explanation.

No known natural law appears to account for the semantic character of biological information - the message bearing sequences in DNA. Fundamental to life is the *sequence* of four nucleotide bases that comprise DNA. The *sequence* of these genetic symbols contain messages or instructions for the assembly and operation of cells and systems of cells that comprise the organism. DNA carries a discernable meaning or “message” that is quite independent of the function of each of the symbols that makes up the message. Minds are the only known entities that can comprehend and produce meaning and purpose - that have the capacity to order events

for a future purpose. Although natural laws can account for many patterns found in nature, there is no known law that can account for the specific sequence of genetic symbols in DNA. Paul Davies, a highly regarded theoretical physicist, discusses this semantic (or meaningful) characteristic of biological information and the lack of a natural explanation for it in *The Fifth Miracle: The Search for the Origin and Meaning of Life* (Simon & Schuster, p. 60, 1999):

“Snowflakes contain syntactic information in the specific arrangement of their hexagonal shapes, but these patterns have no semantic content, no meaning for anything beyond the structure itself. By contrast, the distinctive feature of biological information is that it is replete with meaning. DNA stores the instructions needed to build a functioning organism; it is a blueprint or an algorithm for a specified, predetermined product. Snowflakes don’t code for or symbolize anything, whereas genes most definitely do. To explain life fully, it is not enough simply to identify a source of free energy, or negative entropy, to provide biological information. We also have to understand how *semantic* information comes into being. It is the quality, not the mere existence, of information that is the real mystery here.”

Until a natural law is discovered that can explain this semantic characteristic, ID is the best explanation for the biological information contained in the genetic sequence necessary to specify life. In addition, the prospects for the discovery of such a law are bleak since laws produce regularity, not the irregularity absolutely required in DNA. It is precisely this aperiodic characteristic that gives DNA the power to carry the instructions for a seemingly infinite variety of living systems. The existence of this semantic characteristic and the lack of a natural law to explain it provide powerful evidence of actual rather than only apparent design.

The extreme complexity of biological systems tends to rule out chance as a reasonable explanation for the origin of life. Scientists have postulated that at least 300 genes are necessary for the existence of the simplest replicating cell. The chance occurrence of the sequence in a single small gene that codes for a protein consisting of only 100 amino acids has been calculated to be something in the order of one chance in 10^{125} . Recently scientists estimated that the total number of quantum events that have occurred in the entire universe since the big bang some 14 billion years ago is in the order of 1×10^{120} . Furthermore, as the complexity of a system increases - as we add additional genes to make the necessary sequence - the probability of the sequence occurring by chance decreases exponentially. Because of the extraordinary complexity of the genetic instructions necessary to cause the hypothesized first cell to function and replicate, scientists generally agree that its chance formation from non-living chemicals is not a reasonable hypothesis. This level of complexity is strong evidence for design, particularly in view of the fact that scientists believe the first cell arose during a relatively short time frame after the earth first became hospitable to life.

Evidence Against the Competing Darwinian Hypothesis.

Conceptual Difficulties. A Darwinian explanation for the origin of all of the diversity of life through the “natural selection”(sorting) of chance mutations in replicating populations via random environmental circumstances is being questioned on a number of evidentiary and analytical grounds. These include conceptual difficulties with the capacity of a mindless

mechanism that functions like a series of random sieves to exhibit forward looking creative power, statistical analyses and the lack of a Darwinian explanation for the assembly of irreducibly complex biological machines and systems.

Evidentiary difficulties. The Design hypothesis is strengthened by other problems with the evidentiary basis for the only competing hypotheses - naturalistic chemical and Darwinian evolution. Many features of the fossil record and of molecular homologies are inconsistent with Darwinian predictions but consistent with patterns of development in human designed systems and technology. Much of the evidence used to support Darwinian evolution is equally well-explained by the design hypothesis. Darwinian evolution has not been adequately tested (a) because it is an historical hypothesis about singular events and processes occurring in the distant past that cannot be confirmed by experiment, and (b) because it has not been properly evaluated against all the relevant evidence (as explained in the next paragraph and Reason 2 below).

Darwinian Evolution has been protected from criticism. As discussed under Reason 2 below, the credibility of evolution has suffered from a naturalistic assumption that protects it from the criticism of competing theories. Naturalistic theories of origins have been ***assumed*** to be true rather than proven to be true by evidence that rules out competing theories. This assumption has enabled evolutionary proponents to support Darwinian stories or “historical narratives” through the use of circular reasoning, speculation and false accounts of the kind discussed in *Icons of Evolution* (J. Wells, Regency Press, 2000). A naturalistic assumption allows evolutionary theory to accommodate itself to any evidence. The assumption robs it of falsifiability. Until evolutionary hypotheses are fairly and objectively weighed against the evidence for the competing design hypothesis, evolution will forever remain a speculative hypothesis.

As our scientific knowledge about biological and cosmological complexity increases, a growing number of scientists are questioning Darwinian evolution and exploring the evidence for intelligent design. This is discussed in more detail under Reason 4 below and in ***Recent Polls and Congress Show a Demand For Objectivity in Origins Science*** at <http://www.intelligentdesignnetwork.org/Polls.pdf>.

RESPONSE TO THE AAAS RESOLUTION

Summary of Resolution

A copy of the AAAS resolution is appended to this Memorandum. In summary, it claims that Darwinian evolution is a “robust” and “scientifically accepted” theory of the origin of all of the diversity of life. Curiously the AAAS is concerned because ID “proponents” (who are highly regarded scientists) have the impudence to challenge this “robust” theory. The AAAS claims that the ID challenge is not supported by “credible scientific evidence” and that a design inference is not “testable.” Instead the ID claims are said to be based on “misinformation.” For these reasons the AAAS concludes that ID should be excluded from all of “public science education.” To this end the AAAS Board urges all US Citizens, members of the AAAS and affiliates of the AAAS to

“oppose the establishment of policies that would permit the teaching of ‘intelligent design theory’ as a part of the science curricula of the public schools;”

In short, the AAAS seeks to have our public schools censor ID; to “burn the books” that are critical of Darwinian evolution. This form of censorship results in a public school policy called “**Evolution Only.**”

Reasons Why Schools Should Reject the AAAS Resolution.

Short Response To the AAAS. The AAAS resolution is an affront to good science education and intellectual integrity, honesty and objectivity. It seeks to promote the same kind of censorship that Clarence Darrow argued against in the 1925 Scopes “Monkey” Trial. Darrow fought for academic freedom when Tennessee sought to censor Darwinian evolution. Ultimately, the Supreme Court held that the censorship of one of multiple theories of origins violates the obligation of the state to be neutral in matters touching “religion and nonreligion” under the Establishment Clause. Censoring ID in 2002 is no different than censoring evolution in 1925. The principles are the same, only the names have changed. The idea now under attack is not evolution but ID. We believe the attack is not only unseemly, but is built on hidden assumptions and lame excuses. It is also inconsistent with logic, academic freedom, good science, the US Constitution and the views of a growing number of credentialed scientists, Congress and the public.

Detailed Reasons for Rejecting the Resolution. The AAAS proposal to adopt an “**Evolution Only**” policy that would censor ID and legitimate scientific criticisms of evolution should be rejected for the following reasons (expanded upon below):

- 1. The AAAS claim that evolution is a “robust theory” is inconsistent with the AAAS proposal to protect it from criticism. If it were truly “robust” it would not need to be protected by the heavy hand of a censor.***
- 2. The AAAS resolution fails to disclose the underlying motivation for censoring ID. The AAAS seeks to censor ID not because of its lack of evidentiary merit but to promote an undisclosed naturalistic philosophy.***
- 3. The AAAS resolution would ban ID from all discussion of biological origins, including the origin of life itself. Although the scientific community lacks even a coherent, much less a “robust” idea about how life could have started without intelligent input, the AAAS proposal would mandate teaching only naturalistic speculations about the origin of life. This is not consistent with its stated goal of enhancing scientific credibility.***
- 4. Contrary to the implications of the AAAS resolution, evolutionary theory is scientifically controversial and is being publicly questioned by a growing number of scientists.***
- 5. The AAAS claim that the “ID movement has failed to offer credible scientific evidence to support their claim” is the false and unsupported assertion of a biased advocate rather than the reasoned conclusion of an objective scientific observer.***

6. ***The AAAS claim that a design inference is not testable is simply disingenuous. An inference of design is testable. Many scientific disciplines test for design every day, including routine testing of radio and light waves for alien intelligence by the SETI program.***
7. ***Implementation of the AAAS resolution will promote a naturalistic belief system that is antagonistic to theistic religions. The office of science is not to censor evidence because of its religious or nonreligious implications, nor is it the office of the state to impose a naturalistic world view.***
8. ***The AAAS resolution fails to address the constitutionality of the proposed state censorship of legitimate scientific views about our origin. Instead it urges the state to inappropriately take sides on an issue important to religion.***
9. ***Contrary to impressions given by the AAAS, the ID movement is not advocating the mandatory teaching of Intelligent Design, rather it is advocating an objective and unbiased approach to the teaching of origins.***

The following discussion explains these reasons in greater detail:

1. ***The AAAS claim that evolution is a “robust theory” is inconsistent with the AAAS proposal to protect it from criticism. If it were truly “robust” it would not need to be protected by the heavy hand of a censor.***

A robust theory needs no protection. The evidence is so compelling that it speaks for itself. That is not the case with Darwinian evolution, at least with respect to macro evolutionary changes. Furthermore, much of the evidence that supports Darwinian theory is equally well-explained by design theory. Is it appropriate that national science organizations should use political muscle and arguments from authority to squelch an idea and the evidence that supports it? We believe our scientific institutions should be using the *scientific method* to winnow out bad ideas rather than the force of office. Instead of denigrating an idea that is seeking access to the playing field, why doesn't the AAAS accept the challenge and allow Darwinian evolution to compete fairly with ID on a level playing field? If ID is indeed a poor theory and Darwinian evolution is truly so “robust,” then surely ID will die on the vine. You must ask: “What is the real reason the AAAS wishes to censor ID?” Is it really to advance a scientific idea that has withstood scientific criticisms or is it to promote a particular belief system - a particular world view?

2. ***The AAAS resolution fails to disclose the underlying motivation for censoring ID. The AAAS seeks to censor ID not because of its lack of evidentiary merit but to promote an undisclosed naturalistic philosophy.***

The AAAS resolution leads one to believe that the reason for censoring ID is because of its alleged lack of evidentiary merit. It is claimed that if ID is allowed, it will “dilute” the evidentiary “quality” of science. As discussed above, the claimed lack of evidentiary merit is hollow. Philosophical positions can blind one to legitimate evidence. As Eugenie Scott, the Director of the evolutionist organization National Center for Science Education has stated, “I’ve

never seen any evidence against evolution.” The reason she doesn’t see it is because her philosophy does not allow her to “see” it. The AAAS lack-of-evidence claim is disingenuous. It shifts attention away from a material omission - the fact that censorship is sought to support a philosophy, not due to a lack of evidence.

The underlying and guiding assumption of the AAAS is called **Methodological Naturalism**. The widespread use of the assumption was recently admitted in the July 2002 issue of the *Scientific American*: “**A central tenet of modern science is methodological naturalism.**” (J. Rennie, editor). Methodological naturalism is also called *scientific materialism*. It holds that only natural explanations of phenomena are allowed in science (regardless of whether or not they are true), and that ID is invalid, not as an evidentiary matter, but as a philosophical preconception.

The assumption was explained in 1997 by Professor Richard Lewontin, a geneticist, as follows:

“...We take the side of science *in spite* of the **patent absurdity of some of its constructs**, *in spite* of its failure to fulfil many of its extravagant promises of health and life, *in spite* of the tolerance of the scientific community for just-so stories, because *we have a prior commitment, a commitment to materialism*. It is not that the methods and institutions of science somehow compel us to accept a material explanation of the phenomenal world, but, on the contrary, that **we are forced by our a priori adherence to material causes** to create an apparatus of investigation and a set of concepts that produce material explanations, no matter how counterintuitive, no matter how mystifying to the uninitiated. **Moreover, that materialism is absolute, for we cannot allow a Divine Foot in the door.**” (emphasis added) [Richard Lewontin, *Billions and Billions of Demons*, (*The New York Review*, January 9, 1997, p. 31)]

Although this “*prior commitment*” may have some utility in *experimental* sciences like physics and chemistry, the *commitment* destroys objectivity in subjective *historical* sciences like biological origins, particularly where it is not disclosed. This *commitment* permits only one answer to the religiously charged question - “*Where did we come from?*” According to this naturalistic bias, the only allowable answer to this question is that we are the result of a purely natural process, blind and unguided, and not one directed by an intelligence.

The intent of the AAAS resolution is to assure that any non-naturalistic answer to that question, however reasonable and regardless of the evidence, cannot be considered in public schools. Thus, rather than a true criticism of ID, the AAAS resolution is nothing less than an attempt to teach our children that **methodological naturalism/scientific materialism** is the only path to true knowledge about our past.

It is important for public school officials to know all of the material reasons for the AAAS resolution. School officials need to understand the nature and effect of the naturalistic assumption

that undergirds the “**Evolution Only**” paradigm. It is our belief that schools should reject the AAAS position and adopt an objective policy that eliminates both naturalistic and religious assumptions from the teaching of origins science. Indeed, abandonment of the naturalistic *commitment* in public school teaching of origins science is dictated, not only by principles of logic, academic freedom and the scientific method, but also by the US Constitution (see Reasons 7 and 8 below).

The failure of the AAAS to reveal its dependence on the unstated assumption of *methodological naturalism* while at the same time suggesting that its complaint about ID is an evidentiary one, is disingenuous. The failure of the AAAS to disclose this assumption, this philosophical *commitment*, opens the Association to the charge that it levels at ID – the promotion of misinformation.

Furthermore, the use of a philosophical *commitment* to protect Darwinism from criticism guts that theory of any scientific credibility. How can one accept a Darwinian claim when the competing claims are rejected, not because they lack a factual basis, but for philosophic reasons?

The need and ability to test a scientific explanation is fundamental to the scientific method. How then do we test the Darwinian claim that life arose via a natural process and not by design? Normally we look to experiments to test and validate scientific explanations. However, as stated by Dr. Ernst Mayr from Harvard University, Darwinian evolution is an historical science and as such cannot be tested by experiment:

“...Darwin introduced historicity into science. Evolutionary biology, in contrast with physics and chemistry, is a historical science -- the evolutionist attempts to explain events and processes that have already taken place. **Laws and experiments are inappropriate techniques for the explication of such events and processes.** Instead **one constructs a historical narrative**, consisting of a tentative reconstruction of the particular scenario that led to the events one is trying to explain.” (emphasis added)

If evolution cannot be tested by experiment and competing explanations are outlawed, then no meaningful test remains for gauging the credibility of the “robust” “historical narratives” created by the imaginations of evolutionary biologists. According to scientists who specialize in historical sciences, the only way to test an historical hypothesis is to show that the available evidence supports one hypothesis *better* than it supports any competing hypothesis. The problem is that naturalistic hypotheses are the only hypotheses allowed in biological origins science – their claims to truth are hollow because their explanatory power has not been fairly compared to that of the competing design hypothesis.

In summary, evolution is “robust” only because it has been protected from criticism and true scientific testing by an “*apparatus of investigation and a set of concepts that produce material explanations, no matter how counterintuitive, no matter how mystifying to the uninitiated.*”

3. ***The AAAS resolution would ban ID from all discussion of biological origins, including the origin of life itself. Although the scientific community lacks even a coherent, much less a “robust” idea about how life could have started without intelligent input, its proposal would mandate teaching only naturalistic speculations about the origin of life. This is not consistent with its stated goal of enhancing scientific credibility.***

Although the AAAS claims Darwinian evolution to be a robust explanation for the origin of the diversity of life, it is silent about the strength of any naturalistic theory for the origin of life itself. The resolution doesn't even discuss that sensitive subject - a subject that is critical to the entire origins debate. The silence is curious, because all biology textbooks explain both the origin of life (chemical evolution) and the origin of the diversity of life (Darwinian evolution) solely in naturalistic terms.

Although the AAAS resolution is silent about naturalistic theories for the origin of life, it urges a ***complete ban*** of ID with regard to ***all*** discussion of biological origins. Perhaps this is because there is no “robust” evidence for chemical evolution while there is strong evidence for ID. The AAAS does not mention that origins science researchers have developed no coherent theory as to how life could have begun via a purely unguided natural process. In an area of acknowledged “mystery” the AAAS urges you to censor the current, best explanation (ID) and to show students only highly speculative and highly selective guesses that seek to explain the origin of life via a purely unguided naturalistic process. The difficulties faced by the naturalistic scenario are monumental, but are not presented as such in high school biology textbooks. Naturalistic speculations with a very weak evidentiary base are permitted in textbooks while the compelling evidence of design is strictly excluded.

If the AAAS was truly interested in promoting “quality” evidence for origins – regardless of its philosophical implications - it would encourage ID supplements to present textbook speculations about chemical evolution and seek to correct the misrepresentations of evidence for Darwinian evolution that are documented in ***Icons of Evolution***, by Dr. Jonathan Wells.

4. ***Contrary to the implications of the AAAS resolution, evolutionary theory is scientifically controversial and is being publicly questioned by a growing number of scientists, Congress and the public.***

The AAAS resolution incorrectly implies that evolution is not scientifically controversial. Indeed, this is the mantra of many of its proponents. The opposite is the case. The AAAS resolution itself is evidence of the controversy.

The controversial nature of evolution and the proposed **Evolution Only** policy among scientists is discussed at length in ***Ten Reasons why Evolution Only is Scientifically Controversial*** (<http://www.intelligentdesignnetwork.org/tenreas.PDF>). For a revealing critique of textbook explanations of Darwinian evolution see Jonathan Wells, ***Icons of Evolution - Science or Myth? Why Much of What We Teach About Evolution is Wrong*** (Regnery, 2000).

More compelling is the growing list of scientists who have publicly proclaimed their concern about the claims of evolution via natural selection and the kind of censorship that is being proposed by the AAAS. Over 200 scientists, most holding Ph.D.'s, and their public declarations,

are listed in *Recent Polls and Congress Show a Demand For Objectivity in Origins Science* at <http://www.intelligentdesignnetwork.org/Polls.PDF>.

More importantly, the public and parents appear diametrically opposed to the kind of censorship proposed by the AAAS policy of “**Evolution Only**.” In a June 9, 2002 poll conducted by a highly regarded polling agency hired by the Cleveland Plain Dealer, 91% of respondents were opposed to an “**Evolution Only**” approach [See *Recent Polls and Congress Show a Demand For Objectivity in Origins Science* at <http://www.intelligentdesignnetwork.org/Polls.PDF>]. Over 82% favored curriculum that would permit the teaching of intelligent design, while 9% did not want their children to be taught anything about origins.

Even Congress recognizes the need for objectivity. In December of 2001, the House and the Senate approved a Conference Committee Report that recognizes the need for objectivity in a “quality science education:”

“The Conferees recognize that a quality science education should prepare students to distinguish the data and testable theories of science from religious or philosophical claims that are made in the name of science. Where topics are taught that may generate controversy (such as biological evolution), the curriculum should help students to understand the full range of scientific views that exist, why such topics may generate controversy, and how scientific discoveries can profoundly affect society.” [No Child Left Behind Act of 2001, Conference Report to Accompany H.R. 1, page 703, (December 13, 2001, House Report No. 107-334)]

It is disingenuous to suggest that there is no scientific controversy over the truth of Darwinian.

5. *The AAAS claim that the “ID movement has failed to offer credible scientific evidence to support their claim” is the false and unsupported assertion of a biased advocate rather than the reasoned conclusion of an objective scientific observer.*

As discussed under *Brief Synopsis of the Evidence for Intelligent Design In Living Systems*, above, and contrary to the AAAS claim, design theory is supported by an abundance of credible evidence. Every day the evidence becomes more compelling as we peer into the awesome complex of cellular systems and see wonders never before imagined. Dr. Gene Myers, a lead scientist on the human genome project was interviewed after his team announced the mapping of the human genome. The following is the report of the dialogue between Dr. Myers and Tom Abate, the reporter for the San Francisco Chronicle:

“Now, with the pressure off, this former University of Arizona professor waxed philosophical on the code his team had cracked.

"**What really astounds me is the architecture of life,**' he [Dr. Myers] said. 'The system is extremely complex. **It's like it was designed.'**"

"My ears perked up.

"Designed? Doesn't that imply a designer, an intelligence, something more than the fortuitous bumping together of chemicals in the primordial slime?

"Myers thought before he replied. '**There's a huge intelligence there. I don't see that as being unscientific.** Others may, but not me.'" [Tom Abate, "*Human Genome Map Has Scientists Talking About the Divine. Surprisingly Low Number of Genes Raises Big Questions*," [San Francisco Chronicle (February 19, 2001)].

Once something appears designed and further evidence is provided that tends to confirm that inference, the burden of proof shifts to those who claim that life is *not* designed. It is then incumbent on them to show by experiment or other appropriate scientific evidence that the object can be produced by completely natural, unguided processes. Success would constitute evidence that the design observed by Dr. Myers is only an illusion. Rather than to accept this challenge and seek to test the claims of design, the AAAS would prefer to avoid that test by summarily dismissing the observations of Dr. Meyer and others as merely "unscientific." However, that approach is truly unscientific and inconsistent with the scientific method. It is apparent that the AAAS is not truly interested in an objective pursuit of truth about our origins. The AAAS resolution seeks to enforce an AAAS "*prior commitment*" to only natural or material causes for our existence. It seeks to censor the evidence of design, not because it does not exist, but because it gets in the way of that goal.

6. *The AAAS claim that a design inference is not testable is simply disingenuous. An inference of design is testable. Many scientific disciplines test for design every day, including routine testing of radio and light waves for alien intelligence by the SETI program.*

If ID is not testable and thus "non-scientific," then neither are several other disciplines currently held to be scientific. For example, in the SETI program, researchers are testing patterns in light and radio waves from outer space for non-human alien intelligence. ID and SETI both use the same design detection methodology. How could the SETI enterprise be considered scientific if its design detection methods are not scientifically valid? If design cannot be falsified, how can the AAAS consider it to be false? The AAAS claim that a design inference is not testable is refuted every day by countless design detection experts whose livelihood depends on design detection (e.g., forensic scientists, arson and crime investigators, cryptologists, archaeologists and SETI researchers).

How does one "test" a design inference? A pattern or system that yields an inference of design must satisfy **all** of three criteria. If it cannot, then a design inference is not warranted (i.e., design is rejected as an explanation).

- First, the pattern must exhibit *apparent design* - something that appears to be “specified.” A specification is a pattern that has been configured for a purpose or that conveys some meaning or message that is independent of the significance of the individual events that make up the pattern. For example, the pattern “DESIGN” appears designed because it reflects meaning that is independent of the significance of each of the six letters that comprise it. DNA has the same characteristic.
- Second, there must be *no adequate natural explanation* for the pattern. It cannot be a pattern that is required to appear by the operation of natural law. For example, a salt crystal and a river channel are regular patterns that can be explained by natural law (electromagnetism, gravity, erosion, moving water, the natural terrain). However, the precise sequence of the genetic symbols in “message bearing” DNA are not dictated by any known law.
- Third, the pattern must be sufficiently *complex* that its arrangement by chance and law alone is statistically improbable. As mentioned above, the chance formation of the necessary DNA sequence for the first cell would appear to be statistically impossible.

These general criteria are used in the analysis of patterns in all design detection sciences - archaeology, forensic sciences, cryptanalysis and the search for extraterrestrial intelligence. They are deemed adequate to test for design in those sciences. Why not in evolutionary biology? No scientific rationale has been provided for accepting design detection methodologies in these other historical sciences and rejecting them in evolutionary biology.

7. *Implementation of the AAAS resolution will promote a naturalistic belief system that is antagonistic to theistic religions. The office of science is not to censor evidence because of its religious or nonreligious implications, nor is it the office of the state to impose a naturalistic world view.*

When a public school chooses to discuss with children the question “*Where do we come from?*” the school has chosen to engage in a discussion that unavoidably impacts religion. Metaphorically, it has leaped over the wall that separates Church from State. Any explanation to this fundamental question will positively or negatively impact religious and nonreligious beliefs. A naturalistic answer to this question negatively impacts theistic religions and supports nonreligions like atheism, agnosticism and secular humanism. A design inference supports (but does not require) theism and challenges core tenets of atheism, agnosticism and secular humanism. However, implications by themselves do not make a religion. Neither evolution nor ID need be religious or non-religious so long as each is genuinely open to testing, criticism, falsification and replacement by a better explanation, and so long as neither demands acceptance or adherence.

ID does not seek to censor any viewpoint, does not require acceptance of its claims and does not seek an “ID Only” curriculum. ID not only welcomes - it requires - objective consideration of the competing naturalistic views as a means of testing its own view. However, by urging a ban on ID so that “**Evolution Only**” will be taught, the AAAS resolution effectively requires acceptance of a naturalistic view of our origins.

Although the AAAS policy does not expressly mention criticisms of evolutionary theory as an item of censorship, the policy of the AAAS and other science organizations has been to censor core criticisms of evolution as well. Censoring of criticisms of evolution is necessary to effectively censor design. This is because any criticism of evolution unavoidably leads to a discussion of biological complexity and design theory. Accordingly, one should reasonably expect that an implementation of these policies may have the effect of imbuing students with a “belief” in a naturalistic world view that is antagonistic to theistic beliefs.

We believe the office of science and public science education is not to **indoctrinate** students in particular religious or nonreligious belief systems or world views. Rather the goal of education should be to **appropriately educate and inform** students so that they will become **equipped** to make **informed decisions** about life and the meaning of life. We believe the AAAS resolution and policies are inconsistent with this goal.

8. *The AAAS resolution fails to address the constitutionality of state censorship of legitimate scientific views about our origin. Instead it urges the state to inappropriately take sides on an issue important to religion.*

In *Epperson v. Arkansas*, the Supreme Court held that it was inappropriate for a state to censor one of multiple theories of origins. This is because such censorship would violate the religious neutrality required by the Establishment Clause of the First Amendment to the US Constitution. Although, the theory censored in *Epperson* was evolution, the holding of the court logically applies to state sponsored censorship of ID as proposed by the AAAS resolution. The Court stated that not only is neutrality required between religion and religion, it is also required between “*religion and nonreligion.*”

Recent Supreme Court decisions have reiterated the need for the state to be neutral when it engages in a practice that “touches” religion. In the June 2001 case of *Good News Club v. Milford School District* the Court held that the state violated its obligation of neutrality when it censored after hours use of its facilities by religious clubs. In the 2002 case of *Zelman v. Harris* the Court found that the required neutrality was satisfied when a state program did not *take sides* between “religious and nonreligious” schools.

Contrary to *Epperson, Zelman and Good News*, the AAAS resolution urges public schools to *take sides* on an issue that impacts religion and nonreligion. The AAAS policy seeks to indoctrinate students in a naturalistic world view - a posture that clearly *takes sides* against a tenet that is fundamental to all theistic religions. Any school that proposes to follow the advice of the AAAS and adopt an “**Evolution Only**” curriculum would be well advised to obtain a legal opinion from counsel as to the constitutional propriety of such a policy. For materials regarding this issue, boards are urged to review the legal materials found at <http://www.intelligentdesignnetwork.org/TeachingResources.htm#4.%20Legal%20opinion>.

9. ***Contrary to impressions given by the AAAS, the ID movement is not advocating the mandatory teaching of Intelligent Design, rather it is advocating an objective and unbiased approach to the teaching of origins.***

The primary goal of IDnet is to replace naturalistic, philosophical and religious bias from origins science with objectivity. Accordingly, we are urging school boards to adopt a “no censorship” policy that would permit rather than mandate discussion of ID theory as a reasonable theory of biological origins. At the very least, schools should ensure that all material assumptions in origins science are fully and appropriately disclosed to students. This includes not only ***methodological naturalism*** but also any religious assumption. The AAAS Project 2061 Benchmarks on the Nature of Science are consistent with this suggestion:

“Conclusions presented to students (in books and in class) about how scientists explain phenomena should gradually be augmented by information on ***how the science community arrived at those conclusions***. Indeed, as students move through school, they should be encouraged to ask over and over, ***‘How do we know that’s true?’***”

One cannot honestly answer that question about current explanations of our origins if the fundamental naturalistic assumption against design is not appropriately disclosed. The need to understand basic assumptions is explained by the National Academy of Sciences in its Publication ***Science for All Americans On Line***:

“When faced with a claim that something is true, scientists respond by asking what evidence supports it. ***But scientific evidence can be biased*** in how the data are interpreted, in the recording or reporting of the data, ***or even in the choice of what data to consider in the first place.***

“Bias attributable to the investigator, the sample, the method, or the instrument may not be completely avoidable in every instance, but ***scientists want to know the possible sources of bias and how bias is likely to influence evidence.*** Scientists ***want, and are expected,*** to be as ***alert to possible bias*** in their own work ***as in that of other scientists,*** although such objectivity is not always achieved.” (emphasis added)

The problem here is not with undisclosed bias among a few independent investigators. It is with an undisclosed bias at the institutional level. That bias simply does not work when we seek to scientifically answer the question: ***“where do we come from?”***. Schools must disclose the naturalistic bias that inheres in current textbooks and curricula. They should also encourage its abandonment to achieve true scientific objectivity and constitutional neutrality.

Conclusion and Suggested Policy that Seeks Objectivity in Origins Science.

This memorandum has addressed some of the reasons why the AAAS resolution regarding intelligent design should be rejected. Why is it so important to the AAAS that this idea be stifled? What is to be gained by this censorship? The AAAS has presented no legitimate scientific reason.

Rather than promoting a biased and one sided explanation of *where we come from*, we believe that a scientifically objective approach to the subject that allows students to understand the real scientific controversy about origins will better serve academic freedom, good science education and the obligation of the state to remain constitutionally neutral in a discussion that clearly impacts religion. A suggested policy for School Boards that focuses on an objective discussion of origins is attached. An explanation of that policy may be found at <http://www.intelligentdesignnetwork.org/SchoolPolicyExplanation.htm>.

AAAS Board Resolution on Intelligent Design Theory

The contemporary theory of biological evolution is one of the most robust products of scientific inquiry. It is the foundation for research in many areas of biology as well as an essential element of science education. To become informed and responsible citizens in our contemporary technological world, students need to study the theories and empirical evidence central to current scientific understanding.

Over the past several years proponents of so-called "intelligent design theory," also known as ID, have challenged the accepted scientific theory of biological evolution. As part of this effort they have sought to introduce the teaching of "intelligent design theory" into the science curricula of the public schools. The movement presents "intelligent design theory" to the public as a theoretical innovation, supported by scientific evidence, that offers a more adequate explanation for the origin of the diversity of living organisms than the current scientifically accepted theory of evolution. In response to this effort, individual scientists and philosophers of science have provided substantive critiques of "intelligent design," demonstrating significant conceptual flaws in its formulation, a lack of credible scientific evidence, and misrepresentations of scientific facts.

Recognizing that the "intelligent design theory" represents a challenge to the quality of science education, the Board of Directors of the AAAS unanimously adopts the following resolution:

Whereas, ID proponents claim that contemporary evolutionary theory is incapable of explaining the origin of the diversity of living organisms;

Whereas, to date, the ID movement has failed to offer credible scientific evidence to support their claim that ID undermines the current scientifically accepted theory of evolution;

Whereas, the ID movement has not proposed a scientific means of testing its claims;

Therefore Be It Resolved, that the lack of scientific warrant for so-called "intelligent design theory" makes it improper to include as a part of science education;

Therefore Be Further It Resolved, that AAAS urges citizens across the nation to oppose the establishment of policies that would permit the teaching of "intelligent design theory" as a part of the science curricula of the public schools;

Therefore Be It Further Resolved, that AAAS calls upon its members to assist those engaged in overseeing science education policy to understand the nature of science, the content of contemporary evolutionary theory and the inappropriateness of "intelligent design theory" as subject matter for science education;

Therefore Be Further It Resolved, that AAAS encourages its affiliated societies to endorse this resolution and to communicate their support to appropriate parties at the federal, state and local levels of the government.

Approved by the AAAS Board of Directors on 10/18/02

<http://www.aaas.org/news/releases/2002/1106id.shtml>

OBJECTIVE ORIGINS SCIENCE POLICY

BE IT RESOLVED THAT THE FOLLOWING POLICY IS HEREBY ADOPTED FOR USE WITHIN THE _____ SCHOOL DISTRICT:

It is the intent of this Board that to enhance the effectiveness of science education and to promote academic freedom and the neutrality of state government with respect to teachings that touch religious and nonreligious beliefs, it is necessary and desirable that science which seeks to explain the origins of life and its diversity (origins science), be conducted and taught objectively and without religious, naturalistic, or philosophic bias or assumption. To further this intent, the instructional program provided by schools within this district shall do all of the following:

- (A) Encourage the presentation of scientific evidence regarding the origins of life and its diversity objectively and without religious, naturalistic, or philosophic bias or assumption;
- (B) Require that whenever explanations regarding the origins of life are presented, appropriate explanation and disclosure shall be provided regarding the historical nature of origins science and the use of any material assumption which may have provided a basis for the explanation being presented;
- (C) Encourage the development of curriculum that will help students think critically about the claims of evolutionary theory, understand the full range of scientific views that exist regarding the origins of life, and understand why origins science may generate controversy.

A technical explanation of this policy may be found at:

<http://www.intelligentdesignnetwork.org/SchoolPolicyExplanation.htm>