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GENERAL QUESTIONS ABOUT INTELLIGENT DESIGN

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1. What is Discovery Institute?

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Founded in 1990, the Institute is a national, non-profit, non-partisan policy and research organization, headquartered in Seattle, WA. It has programs on a variety of issues, including regional transportation development, economics and technology policy, and bioethics. The Institute's founder is Bruce Chapman, who has a long history in public policy at both the national and regional levels. Mr. Chapman is a former director of the United States Census Bureau, and a past American ambassador to the United Nations Organizations in Vienna, Austria. Mr. Chapman has also served as a member of the Seattle City Council and as Washington State's Secretary of State.

2. What is the Center for Science and Culture?

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The Center for Science and Culture is a Discovery Institute program that supports the work of scholars who challenge various aspects of neo-Darwinian theory and scholars who are working on the scientific theory known as intelligent design, as well as advocating public policies that encourage schools to improve science education by teaching students more fully about the theory of evolution. Discovery's Center for Science and Culture has more than 40 Fellows, including biologists, biochemists, chemists, physicists, philosophers and historians of science, and public policy and legal experts, many of whom also have affiliations with colleges and universities. The Center's Director is Dr. Stephen Meyer, who holds a Ph.D. in the history and philosophy of science from Cambridge University.

3. Is Discovery Institute a religious organization?

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Discovery Institute is a secular think tank, and its Board members and Fellows represent a variety of religious traditions, including mainline Protestant, Roman Catholic, Eastern Orthodox, Jewish, and agnostic. Although it is not a religious organization, the Institute has a long record of supporting religious liberty and the legitimate role of faith-based institutions in a pluralistic society. In fact, it sponsored a program for several years for college students to teach them the importance of religious liberty and the separation of church and state.

Questions about Intelligent Design

1. What is the theory of intelligent design?

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The theory of intelligent design holds that certain features of the universe and of living things are best explained

by an intelligent cause, not an undirected process such as natural selection. For more information see Center Director Stephen Meyer's article "[Not By Chance](#)" from the *National Post* of Canada or his appearance on PBS's "[Tavis Smiley Show](#)" (Windows Media).

2. Is intelligent design science?

Intelligent design (ID) is a scientific theory that employs the methods commonly used by other historical sciences to conclude that certain features of the universe and of living things are best explained by an intelligent cause, not an undirected process such as natural selection. ID theorists argue that design can be inferred by studying the informational properties of natural objects to determine if they bear the type of information that in our experience arise from an intelligent cause. The form of information which we observe is produced by intelligent action, and thus reliably indicates design, is generally called "specified complexity" or "complex and specified information" (CSI). An object or event is complex if it is unlikely, and specified if it matches some independent pattern. For further information, see [Casey Luskin's article on how intelligent design follows the scientific method](#) and [Stephen Meyer's comments on why intelligent design is science](#).

3. Is intelligent design simply a response to Darwinian evolution?

No. Contrary to what many people suppose, the debate over intelligent design is much broader than the debate over Darwin's theory of evolution. That's because much of the scientific evidence for intelligent design comes from areas that Darwin's theory doesn't even address. In fact, the evidence for intelligent design comes from three main areas: [Physics and Cosmology, the Origin of Life, and the Development of Biological Complexity](#).

4. What is the scientific evidence for intelligent design?

For a brief summary with additional links, [read this article](#). For a more extended treatment, read Stephen Meyer's [overview of the theory of intelligent design](#).

5. Is intelligent design theory incompatible with evolution?

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It depends on what one means by the word "evolution." If one simply means "change over time," or even that living things are related by common ancestry, then there is no inherent conflict between evolutionary theory and intelligent design theory. However, the dominant theory of evolution today is neo-Darwinism, which contends that evolution is driven by natural selection acting on random mutations, an unpredictable and purposeless process that "has no discernable direction or goal, including survival of a species." (2000 NABT Statement on Teaching Evolution). It is this specific claim made by neo-Darwinism that intelligent design theory directly challenges. For a more thorough treatment see the article "[Meanings of Evolution](#)" by Center Fellows Stephen C. Meyer & Michael Newton Keas.

6. Is intelligent design based on the Bible?

No. The idea that human beings can observe signs of intelligent design in nature reaches back to the foundations of both science and civilization. In the Greco-Roman tradition, [Plato](#) and [Cicero](#) both espoused early versions of intelligent design. In the history of science, most scientists until the latter part of the nineteenth century accepted some form of intelligent design, including [Alfred Russel Wallace](#), the co-discoverer with Charles Darwin of the theory of evolution by natural selection. In the [Judeo-Christian tradition](#), meanwhile, the idea that design can be discerned in nature can be found not only in the Bible but among Jewish philosophers such as Philo and in the writings of the Early Church Fathers. The scientific community largely rejected design in the early twentieth century after neo-Darwinism claimed to be able to explain the emergence of biological complexity through the unintelligent process of natural selection acting on random mutations. In recent decades, however, [new research and discoveries](#) in such fields as physics, cosmology, biochemistry, genetics, and paleontology have caused a growing number of scientists and science theorists to question neo-Darwinism and propose intelligent design as the best explanation for the existence of specified complexity throughout the natural world.

7. Is intelligent design theory the same as creationism?

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No. Intelligent design theory is simply an effort to empirically detect whether the "apparent design" in nature acknowledged by virtually all biologists is genuine design (the product of an intelligent cause) or is simply the product of an undirected process such as natural selection acting on random variations. Creationism is focused on defending a literal reading of the Genesis account, usually including the creation of the earth by the Biblical God a few thousand years ago. Unlike creationism, the scientific theory of intelligent design is agnostic regarding the source of design and has no commitment to defending Genesis, the Bible or any other sacred text. Why, then, do some Darwinists keep trying to conflate intelligent design with creationism? It is a rhetorical strategy on the part of Darwinists who wish to delegitimize design theory without actually addressing the merits of its case. For more information read Center Director Stephen Meyer's piece "[Intelligent Design is not Creationism](#)" that appeared in *The Daily Telegraph (London)* or Center Associate Director's piece "[Intelligent Design and Creationism Just Aren't the Same](#)" in Research News & Opportunities.

8. Are there established scholars in the scientific community who support intelligent design?

Yes. Intelligent design theory is supported by doctoral scientists, researchers, and theorists at a number of universities, colleges, and research institutes around the world. These scholars include biochemist Michael Behe at Lehigh University, microbiologist Scott Minnich at the University of Idaho, biologist Paul Chien at the University of San Francisco, quantum chemist Henry Schaefer at the University of Georgia, geneticist Norman Nevin (emeritus) at Queen's University of Belfast, mathematician Granville Sewell at the University of Texas, El Paso, and medical geneticist Michael Denton. Research centers for intelligent design include the [Evolutionary Informatics Lab](#), led by Robert Marks, Distinguished Professor of Engineering at Baylor University; and the [Biologic Institute](#), led by molecular biologist Douglas Axe, formerly a research scientist at the University of Cambridge, the Cambridge Medical Research Council Centre, and the Babraham Institute in Cambridge.

9. Is research about intelligent design published in peer-reviewed journals and monographs?

Yes. Scientists in the intelligent design research community have published their work in numerous peer-reviewed scientific journals and monographs. [An annotated listing of selected peer-reviewed publications is available on our website](#). Peer-reviewed scientific journals in which scientists favorable to intelligent design have published their work include *Protein Science*, *Journal of Molecular Biology*, *Theoretical Biology and Medical Modelling*, *Journal of Advanced Computational Intelligence and Intelligent Informatics*, *Quarterly Review of Biology*, *Cell Biology International*, *Rivista di Biologia/Biology Forum*, *Physics of Life Reviews*, and *Annual Review of Genetics*. In addition, scientists open to debating the question of design in biology have established the open-access peer-reviewed biology journal [BIO-Complexity](#), which publishes original research related to the origin and development of biological information. The [editorial advisory board](#) for *BIO-Complexity* includes 29 eminent scientists from academic institutions around the world such as the Rochester Institute of Technology, Wake Forest University, the University of Georgia, the University of Bristol, the University of Utah, the University of Pittsburgh, the University of Wisconsin-Superior, Queen's University of Belfast, the Max Planck Institute for Plant Breeding Research, and the University of St. Andrews.

Although intelligent design scientists regularly publish peer-reviewed research, it needs to be noted that many breakthroughs in science were originally published as non-peer-reviewed articles or books, including Charles Darwin's *On the Origin of Species*. Moreover, in recent years peer-review [has come under significant criticism](#) for illegitimately censoring many good scientific ideas and slowing the advance of scientific research.

Finally, some critics of intelligent design are actively seeking to undermine the peer-review process to prevent articles from scientists supportive of intelligent design from being published. In one case, a journal that inappropriately withdrew an article by an intelligent design proponent after it had passed peer-review [paid \\$10,000 and issued an apology](#) to the scientist for its misconduct.

10. What about the American Association for the Advancement of Science (AAAS) and its resolution against intelligent design?

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In 2002 the board of the AAAS issued a resolution attacking intelligent design theory as unscientific.

Unfortunately, the process by which this resolution was adopted was itself anything but scientific. In fact, the resolution was more a product of prejudice than impartial investigation. After the resolution was issued, members of the AAAS Board were surveyed about what books and articles by scientists favoring intelligent design they had actually read before adopting their resolution. Alan Leshner, the Chief Executive Officer of the AAAS, declined to specify any and replied instead that the issue had been analyzed by his group's policy staff. Two other AAAS board members similarly declined to identify anything they had read by design proponents, while yet another board member volunteered that she had perused unspecified sources on the Internet. In other words, AAAS board members apparently voted to brand intelligent design as unscientific without studying for themselves the academic books and articles by scientists proposing the theory. It should be noted that a number of the scientists supportive of intelligent design theory are members of the AAAS, so the AAAS board clearly does not speak for all members of that organization.

Questions about Criticism of Darwinian Evolution

1. Is raising scientific criticisms of modern Darwinian theory the same thing as advocating intelligent design? No. One can critique the sufficiency of current evolutionary mechanisms (such as natural selection, random mutations, and genetic drift) without going on to conclude that intelligent processes are a better explanation for the features of nature under study. Indeed, many scientists who reject intelligent design in biology are nevertheless skeptical of key claims made by orthodox Darwinian theory.

2. What are some of the scientific problems with current theories of biological and chemical evolution? Here are five key problems:

Genetics: Mutations cause harm and do not build complexity. Darwinian evolution relies on random mutations that are selected by a blind, unguided process of natural selection that has no goals. Such a random and undirected process tends to harm organisms and does not improve them or build complexity. As National Academy of Sciences biologist Lynn Margulis has said, "new mutations don't create new species; they create offspring that are impaired." Similarly, past president of the French Academy of Sciences, Pierre-Paul Grasse, contended that "[m]utations have a very limited 'constructive capacity'" because "[n]o matter how numerous they may be, mutations do not produce any kind of evolution."

Biochemistry: Unguided and random processes cannot produce cellular complexity. Our cells contain incredible complexity, like miniature factories using machine technology but dwarfing the complexity and efficiency of anything produced by humans. Cells use miniature circuits, motors, feedback loops, encoded language, and even error-checking machinery to decode and repair our DNA. Darwinian evolution struggles to build this type of integrated complexity. As biochemist Franklin Harold admits: "there are presently no detailed Darwinian accounts of the evolution of any biochemical or cellular system, only a variety of wishful speculations."

Paleontology: The fossil record lacks intermediate fossils. The fossil record's overall pattern is one of abrupt explosions of new biological forms, and possible candidates for evolutionary transitions are the exception, not the rule. This has been recognized by many paleontologists such as Ernst Mayr who explained in 2000 that "[n]ew species usually appear in the fossil record suddenly, not connected with their ancestors by a series of intermediates." Similarly, a zoology textbook observed that "Many species remain virtually unchanged for millions of years, then suddenly disappear to be replaced by a quite different, but related, form. Moreover, most major groups of animals appear abruptly in the fossil record, fully formed, and with no fossils yet discovered that form a transition from their parent group."

Taxonomy: Biologists have failed to construct Darwin's "Tree of Life." Biologists hoped that DNA evidence would reveal a grand tree of life where all organisms are clearly related. It hasn't. Trees describing the alleged ancestral relationships between organisms based upon one gene or biological characteristic very commonly conflict with trees based upon a different gene or characteristic. As the journal *New Scientist* put it, "different

genes told contradictory evolutionary stories." The eminent microbiologist Carl Woese explained that such "[p]hylogenetic" conflicts "can be seen everywhere in the universal tree, from its root to the major branchings within and among the various taxa to the makeup of the primary groupings themselves." This implies a breakdown in common descent, the hypothesis that all organisms share a common ancestor.

Chemistry: The chemical origin of life remains an unsolved mystery. The mystery of the origin of life is unsolved and all existing theories of chemical evolution face major problems. Basic deficiencies in chemical evolution include a lack of explanation for how a primordial soup could arise on the early earth's hostile environment, or how the information required for life could be generated by blind chemical reactions. As evolutionary biologist Massimo Pigliucci has admitted, "we really don't have a clue how life originated on Earth by natural means."

3. What is the "Dissent from Darwin" list?

Since Discovery Institute first published its [Statement of Dissent from Darwin](#) in 2001, more than 800 scientists have courageously stepped forward and signed onto a growing list of scientists of all disciplines voicing their skepticism over the central tenet of modern Darwinian theory. The full statement reads: "We are skeptical of claims for the ability of random mutation and natural selection to account for the complexity of life. Careful examination of the evidence for Darwinian theory should be encouraged." Prominent scientists who have signed the list include evolutionary biologist and textbook author Dr. Stanley Salthe, quantum chemist Henry Schaefer at the University of Georgia, and Giuseppe Sermoniti the Editor of *Rivista di Biologia / Biology Forum*. The list also includes scientists from Princeton, Cornell, UC Berkeley, UCLA, Ohio State University, Purdue and University of Washington among others. To view the list along with other information about it go to: www.dissentfromdarwin.org

Questions about Science Education Policy

1. Does Discovery Institute favor including the Bible or creationism in science classes or textbooks?

[Click here for video](#)

No. Discovery Institute is not a creationist organization, and it does not favor including either creationism or the Bible in biology textbooks or science classes.

2. Is Discovery Institute trying to eliminate, reduce or censor the coverage of evolution in textbooks?

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No. Far from reducing the coverage of evolution, Discovery Institute seeks to increase the coverage of evolution in textbooks. It believes that evolution should be fully and completely presented to students, and they should learn more about evolutionary theory, including its unresolved issues. The true censors are those who want to stop any discussion of the scientific weaknesses of evolutionary theory.

3. Should public schools require the teaching of intelligent design?

No. Instead of mandating intelligent design, Discovery Institute recommends that states and school districts focus on teaching students more about evolutionary theory, including telling them about some of the theory's problems that have been discussed in peer-reviewed science journals. In other words, evolution should be taught as a scientific theory that is open to critical scrutiny, not as a sacred dogma that can't be questioned. We believe this is a common-sense approach that will benefit students, teachers, and parents.

4. Is teaching about intelligent design unconstitutional?

Although Discovery Institute does not advocate requiring the teaching of intelligent design in public schools, it does believe there is nothing unconstitutional about discussing the scientific theory of design in the classroom. In addition, the Institute opposes efforts to persecute individual teachers who may wish to discuss the scientific debate over design in a pedagogically appropriate manner.

For more information please watch our [video](#) and look at the [Key Resources for Parents and School Board Members](#) page. <<



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