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OBJECTION OVERRULED

Responding to the Top Ten Objections against Intelligent Design

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Synopsis

The controversy surrounding intelligent design (ID) and Darwinism continues to be at the forefront of cultural dialogue. Despite the growing success of ID, the same objections repeatedly appear in both scholarly and popular literature. Christians must be equipped with effective responses to such challenges.

For example, in The God Delusion Richard Dawkins asserts that design is unsuccessful unless it can explain who designed the designer. Besides his theological naivete, Dawkins here fails to grasp the nature of science. Simply put, explanations can be effective even if we can't explain the explanations. For instance, an archaeologist can identify an object as designed even if she is unaware of the origin or identity of the designer. The same is true with the natural world.

With a little research, common challenges such as this are easily answered. It's high time for Christians to educate themselves and put these objections to rest.

"Evolution Wars!" proclaimed the cover story of *Time magazine*, August 15, 2005. The following year *Time* ran another cover story titled, "God vs. Science," featuring a debate between human-genome researcher Francis Collins and evolutionary biologist Richard Dawkins. The controversy surrounding intelligent design (ID) continues to appear in major newspapers, magazines, popular television shows, and various forums on the Internet. In the major motion picture documentary *Expelled: No Intelligence Allowed*,[1] actor Ben Stein examines how dogmatic Darwinists suppress the academic freedom of anyone who dissents from their theory, especially proponents of ID. The debate surrounding ID therefore continues to heat up and shows no signs of dying down.

Despite incessant proclamations by the media and the academic establishment regarding the demise of ID, interest in ID is exploding,[2] and philosopher J. P. Moreland contends that the ID movement cannot be stopped.[3] Despite ID's growing success, however, objections against it regularly appear in both scholarly and popular literature. In this article, we respond to ten of the most common criticisms raised against ID. Given the widespread misinformation in our culture about ID, it has become increasingly important for Christians to respond effectively to challenges posed against it.

OBJECTION #1:

IMPERFECTION IN LIVING THINGS COUNTS AGAINST ID

In his book *Why Darwin Matters*, skeptic Michael Shermer claims that the imperfect anatomy of the human eye disconfirms design. He asks, "For optimal vision, why would an intelligent designer have

built an eye upside down and backwards?"[4] According to Shermer, such imperfections are evidence for evolution and evidence against design.

Shermer has overlooked a basic point, however: *design does not have to be perfect—it just has to be good enough*. Imperfection speaks to the quality of design, not its reality. Consider successive versions of the iPod. The various versions have minor imperfections, but each clearly was designed; none evolved without guidance from programmers. Our ability to envision a better design hardly means the object in question lacks design.

What is true for the iPod is also true in biology. Living systems bear unmistakable marks of design, even if such design is, or appears to be, imperfect. In the real world, perfect design does not exist. Real designers aim for the best overall compromise among constraints needed to accomplish a function. Design is a give-and-take process. For instance, a larger computer screen may be preferable to a smaller one, but designers must also consider cost, weight, size, and transportability. Given competing factors, designers choose the best overall compromise—and this is precisely what we see in nature.

For instance, all life forms are part of a larger ecology that recycles its life forms. Most life forms survive by consuming other life forms, either living or dead. In due time, all life forms must die.

Suppose we object to design because foxes catch rabbits and eat them. If rabbits had perfect defenses, however, foxes would starve. Then rabbits, by reproducing without limit and eating all the vegetation, also would starve. The uncatchable rabbit, ironically, then, would upset its ecosystem and create far more difficulties for design than it would resolve. Given this larger perspective, it seems that the "imperfections" of individual organisms in nature are actually part of a larger design plan for life.

What about the human eye? Is the eye built upside-down and backwards, as many critics of design argue? Despite common claims that the eye is poorly designed, there actually are good reasons for its construction,[5] and no one has demonstrated how the eye's function might be improved without diminishing its visual speed, sensitivity, and resolution.

OBJECTION #2:

ID MUST EXPLAIN WHO DESIGNED THE DESIGNER

Richard Dawkins has raised this criticism against design arguments for years now, most recently in his book *The God Delusion*. According to Dawkins, ID fails because it doesn't explain the origin of the designer. If the universe bears the marks of design, as ID proponents claim, does the designer bear such marks of design in turn? We are led to ask, "Who designed the designer?" If we can't answer this question, says Dawkins, then ID is fruitless.

Is this, however, how science works? Can scientists only accept explanations that themselves have been explained? The problem with this objection is that it is *always* possible to ask for further explanation. There comes a point, however, when scientists must deny the request for further explanation and accept the progress they have made. As apologist Greg Koukl has observed, "An explanation can be a good one even if you do not have an explanation for the explanation."[6]

For example, if an archaeologist discovers an ancient object that looks like an arrowhead or digging tool, she would be fully justified in drawing a design inference. In fact, after a few clear instances she would be irrational *not* to infer design. She may have no clue as to the origin or identity of the designer, but certain patterns that the artifacts exhibit would point beyond natural forces to the work of an intelligent designer.

If every explanation needed a further explanation, then nothing could ever be explained! For example, if designer B was responsible for having designed designer A, then the question inevitably would arise,

"Who designed B?" The answer, of course, is designer C. And so on without end. Given such an infinite regress of explanations, nothing could ever be explained, since every explanation would require still further explanation. Science itself would come to a standstill!

OBJECTION #3:

ID IS NOT TESTABLE

This criticism is meant to disqualify ID as a science. For ID to be considered untestable, however (and hence, unscientific), there has to be a clear definition of what it means for something to be testable and a clear failure of ID to meet that definition. As it stands, no such definition exists.

If by "testable" we mean that a theory should be open to confirming or disconfirming evidence, then ID most certainly passes the test. Darwin presented what he regarded as strong evidence against design. Claiming that ID has been tested by such evidence and shown to be false, however, creates a catch-22 for the critic: If evidence can count *against* a theory, evidence must also be able to count in *favor* of a theory. The knife cuts both ways.

One cannot say, "Design is not testable," and then turn around and say, "Design has been tested and shown to be false!" For evidence to show that something is false implies that evidence also might show it to be true, even if one thinks the particular evidence in question fails to establish a claim.

Researchers have confirmed the evidence for ID across a wide range of disciplines including molecular biology, physics, and chemistry.[7] Even if critics reject the evidence for ID, in the very act of rejecting the evidence, they put design to the test (which is exactly what they do when no one is looking!).

A simple way to see that ID is testable is to consider the following "thought experiment." Imagine what would happen if microscopic investigation revealed the words, "Made by Yahweh" inscribed in the nucleus of every cell. Of course, cells are not inscribed with the actual words, "Made by Yahweh," but that's not the point. The point is that we wouldn't know this unless we actually "tested" cells for this sign of intelligence, which we couldn't do if ID were not testable. If ID fails, it won't be for lack of testability.

OBJECTION #4:

ID VIOLATES THE SCIENTIFIC CONSENSUS

In 2003, Nobel Prize–winning physicist Steven Weinberg testified before the Texas State Board of Education about the methods of science. He explained, "By the same standards that are used in the courts, I think it is your responsibility to judge that it is the theory of evolution through natural selection that has won general scientific acceptance. And therefore, it should be presented to students as the consensus view of science, without any alternatives being presented."[8] Judge John Jones made a similar declaration in *Kitzmiller v. Dover* (2005).[9]

Darwinian evolution undeniably is accepted by the majority of practicing biologists. Appealing to the majority view as a way to exclude alternative explanations, however, is highly problematic. Here's why: scientific consensus in the past has been notoriously unreliable. In 1960, for instance, the geosynclinal theory was the consensus explanation for mountain formation. The authors of *Geological Evolution of North America* considered geosynclinal theory "one of the great unifying principles of geology."[10]

Whatever happened to geosynclinal theory? Within ten years of this declaration it had been utterly abandoned and decisively replaced with plate tectonics, which explains mountain formation through continental drift and sea-floor spreading.

This is not an isolated example in the history of science. In 1500, the scientific consensus was that the Earth was at the center of the universe, but Copernicus and Newton shattered that misconception by

showing that astronomical data were better explained by the Earth circling the Sun. The scientific consensus in the mid-1700s was that a substance called phlogiston caused heat, but Lavoisier shattered that misconception by showing that combustion was due to oxygen. At the end of the nineteenth century—forty years after the publication of *The Origin of Species*—the scientific consensus was to reject Darwinian evolution!

Today, when Darwinism is touted so widely as fact, it surprises many to learn that most biologists at the start of the twentieth century rejected Darwin's theory of evolution. In the 1930s Darwinism revived when a handful of scientists merged Darwin's theory with Mendelian genetics, which is now known as neo-Darwinism. Within neo-Darwinism, natural selection acted on genes that were randomly mutating. The history of science is filled with such turnabouts. As ID develops, we can expect Darwinism's fortunes to change again, this time for the worse.

Darwinism remains the scientific consensus, but that consensus is shrinking. Dissent from Darwinism continues to grow in the scientific population. In 2001, Seattle's Discovery Institute launched the Web site www.dissentfromdarwin.org to encourage scientists who are skeptical of Darwinism to make their dissension public. Since its inception, more than seven-hundred scientists from top universities worldwide have stepped forward and signed their names in dissent. Moreover, for every signatory of this list, there are tens if not hundreds who would sign it if their research and livelihoods would not be threatened by challenging Darwinism. (The documentary *Expelled* makes this perfectly clear.)

The very idea of "consensus science," ironically, is bogus. In a speech at the California Institute of Technology, medical doctor, author, and public intellectual Michael Crichton said it best:

I regard consensus science as an extremely pernicious development that ought to be stopped cold in its tracks. Historically, the claim of consensus has been the first refuge of scoundrels; it is a way to avoid debate by claiming that the matter is already settled. Whenever you hear the consensus of scientists agrees on something or other, reach for your wallet, because you're being had.

Let's be clear: the work of science has nothing whatever to do with consensus. Consensus is the business of politics. Science, on the contrary, requires only one investigator who happens to be right, which means that he or she has results that are verifiable by reference to the real world. In science consensus is irrelevant. What is relevant is reproducible results. The greatest scientists in history are great precisely because they broke with the consensus.

There is no such thing as consensus science. If it's consensus, it isn't science. If it's science, it isn't consensus. Period.[11]

OBJECTION #5:

ID DOESN'T GO FAR ENOUGH/ISN'T HONEST ENOUGH TO ADMIT THAT ITS DESIGNER IS THE CHRISTIAN GOD

ID does not identify the designer. Why not? Is it for lack of honesty, as this objection suggests? No. The *identity* of the designer goes beyond the scientific evidence for design. Most advocates of ID are in fact Christians, but many Jews, Buddhists, Muslims, Hindus, and agnostics also see evidence for design in nature. (David Berlinski's recent book *The Devil's Delusion*[12] is a case in point.) The evidence of science can identify a designer consistent with the God of the Bible (one that is powerful, creative, skilled, and so forth), but science alone cannot prove that this designer is the Christian God or, for that matter, the God of any other religious faith.

In the foreword for our book *Understanding Intelligent Design*, apologist Josh McDowell offers a helpful comparison between ID and archaeology. To make the strongest case possible for the historical resurrection of Jesus, the deity of Christ, and the reliability of the Scriptures, for example, McDowell often uses recent findings from the field of archaeology. Regardless of the religious conviction of the

archaeologist, the findings still can be used to support the biblical accounts of history—we owe some of the most significant archaeological finds that support the Bible to non-Christians.

As McDowell suggests, we ought to think of ID scientists in the same way as these archeologists. Should we dismiss an archaeological find because it happens also to be consistent with Judaism, Islam, Mormonism, or some other religion? Of course not. Regardless of their religious beliefs, ID theorists are finding evidence for design in the natural world that is consistent with the biblical view of creation. If they don't identify the designer in their academic work, it is because such claims go beyond the scientific data.

OBJECTION #6:

ID IS CREATIONISM IN A CHEAP TUXEDO

Darwinists and the media regularly confuse ID with traditional creationism. Why? To discredit it. In their minds, creationism has no intellectual credibility. To refer to ID as creationism is thus meant to ensure that ID likewise will be denied intellectual credibility. This is why Leonard Krishtalka, professor at the University of Kansas, famously referred to ID as "creationism in a cheap tuxedo."[13] Creationism and ID, however, are distinct.

Creationism holds that a Supreme Being created the universe. Creationists come in two varieties: *young-earth* and *old-earth creationists*.[14] Young-earth creationists interpret Genesis as teaching that creation took place in six twenty-four-hour days, that the universe is between six- and ten-thousand years old, and that most fossils were deposited during Noah's global flood.

Old-earth creationists, on the other hand, allow a wider range of interpretations of Genesis. They accept contemporary scientific dating, which places the age of the Earth at roughly 4.5 billion years old and the universe at 13.7 billion years old. They accept microevolution as God's method of adapting existing species to their changing environments, but they reject macroevolution (the large-scale transformation of one species into a completely different species).

ID, though often confused with creation science, is in fact quite different from it. Rather than beginning with some particular interpretation of Genesis (as young-earth and old-earth creationists typically do), ID begins with investigating the natural world. ID looks for patterns in nature that are best explained as the product of intelligence. Given what the world reveals about itself, ID proponents reason that a designing intelligence best explains certain patterns in nature.

The great difference between ID and creation science, then, is that ID relies *not* on prior assumptions about divine activity in the world, but on methods developed within the scientific population for recognizing intelligence.[15] Even Judge Jones in the *Kitzmiller v. Dover* trial mentioned earlier recognized that ID proponents do not base their theory on "the Book of Genesis," "a young earth," or "a catastrophic Noachic flood." Despite incessant comparisons in the media with creation science, ID is actually quite different from it (although the majority of ID proponents believe in some form of creation, and, indeed, many of them are Christians).

OBJECTION #7:

ID IS RELIGIOUSLY MOTIVATED

According to many critics of ID, design proponents oppose evolution not because they have fairly assessed the evidence for it, but because they are religiously motivated. In particular, critics suppose that design theorists worry that Darwinism undermines traditional morality. Now, it *is* true historically that Darwinism has been used to undercut traditional morality. History professor Richard Weikart, for

instance, details how Darwinism has been used to justify eugenics, abortion, and racism in his must-read book *From Darwin to Hitler*.[16]

Although the tension between Darwinism and traditional morality is undoubtedly fascinating and noteworthy, design theorists reject Darwinism for a more basic reason: its lack of scientific support. Design theorists oppose Darwinian evolution because natural selection acting on random variation gives no evidence of being able to account for the diversity and complexity of life as found in nature.

Biochemist Michael Behe, who is a Roman Catholic and perhaps the best-known design theorist, has repeatedly declared that his opposition to Darwinian evolution stems not from religious reasons, but on account of the scientific data. Behe had no theological problem wedding Darwinian evolution with his Catholic faith. The issue for Behe was the lack of evidence for evolution and the positive case for design.

Even if design proponents were religiously motivated, how would that render their findings unscientific? Why is motivation even relevant? The motivation of scientists is immaterial to the status of their research. Cambridge physicist Stephen Hawking hopes his work in physics will help us understand the mind of God. Nobel laureate Steven Weinberg hopes his work in physics will help destroy religion: "I hope that this [i.e., the destruction of religion] is something to which science can contribute and if it is, then I think it may be the most important contribution that we can make."17 Weinberg is not less of a scientist than Hawking because of his atheistic motivations, and Hawking is not less of a scientist than Weinberg because of his theistic motivations. Likewise, ID is not less of a science because its proponents happen to be motivated one way or another.

The real question for ID is not motivation, but evidence. Philosopher Francis Beckwith explains that "labeling a point of view, or the motives of its proponents, 'religious' or 'nonreligious' contributes nothing to one's assessment of the quality of the arguments for that point of view. Either the arguments work or they don't work or, more modestly, they are either reasonable or unreasonable, plausible or implausible."[18]

OBJECTION #8:

ID IS A SCIENCE-STOPPER

Design critics regularly warn the public that allowing ID into science will either destroy science or significantly deter its progress. According to science writer Michael Shermer, for example, "The point of the [ID] movement is not to expand scientific understanding—it is to shut it down."[19]

The truth, however, is just the opposite—by rigidly excluding ID from science, Darwinists themselves impede scientific progress. Consider "junk DNA." The word "junk" suggests that useless portions of DNA have arisen together through a blind, unguided process of evolution. Evolutionary theorists thus have come to regard only a small portion of DNA as functional. By contrast, if DNA is the product of design, we would expect much of it to be functional.

Current research indicates that much of what was previously termed "junk DNA" is now known to have a function. This finding has become so well known in the scientific community that the popular press has picked up on it. In a recent Newsweek article, Mary Carmichael describes the transformation in how DNA is understood: "Researchers have realized that this forgotten part of the genome is, in fact, profoundly important. It contains the machinery that flips the switches, manipulating much of the rest of the genome….Genes make up only 1.2 percent of our DNA. The rest of the DNA, once called 'junk DNA' was thought to be filler. Recent finds prove otherwise."[20]

Design thus encourages scientists to look for deeper insight into nature, whereas Darwinian evolution discourages it. The criticism that design stifles scientific progress is therefore mistaken. The criticism applies more readily to Darwinism than to design.

OBJECTION #9:

ID IS INHERENTLY RELIGIOUS, NOT SCIENTIFIC

One of the most common tactics that critics of design employ is to label ID as religious rather than scientific. According to philosopher of biology David Hull, Darwin rejected design not just because he thought the evidence was against it, but because he thought it wasn't even scientific: "He [Darwin] dismissed it [design] not because it was an incorrect scientific explanation, but because it was not a proper scientific explanation at all."[21] Critics, accordingly, suppose design to be an inherently religious idea.

How can this be? As noted earlier, ID studies patterns in nature that are best explained as the result of intelligence. Many special or specific sciences already study such patterns and draw agency or design inferences. Examples include forensic science (agency—did that person die of natural causes, or was there foul play?) and archaeology (design—is that an arrowhead or a naturally formed rock?). It is scientifically legitimate to recognize the work of an intelligent agent, even if the identity of that agent is unknown, as is often the case in archaeology.

Critics counter that we cannot apply design to biology because we only have experience with human designers (and any designer in biology would be nonhuman). The sciences of design, however, do not apply merely to human designers. We have evidence of animals that design things. Beavers, for instance, build dams that we recognize as designed. Design also need not be restricted to Earth. The Search for Extraterrestrial Intelligence (SETI, as seen in the movie *Contact*) is a well-established scientific program that attempts to identify radio signals sent from outer space by intelligent aliens. The working assumption of SETI is that we can distinguish an intelligently produced signal from random radio noise.

Some critics discount ID because its designer is supposed to be unobservable. These same critics, however, often will turn around and postulate the "many-worlds hypothesis" (i.e., that multiple universes exist) to discount how finely tuned the laws of physics are to allow for the emergence and sustenance of life. If we are only one of many universes, critics surmise, then it shouldn't surprise us that we find ourselves in a universe uniquely crafted for our existence. The existence of multiple universes has never been observed. In fact, they are such that they can never be observed! Does this mean the many-worlds hypothesis is rendered unscientific? Of course not. Science often progresses by proposing theoretical entities that have yet to be observed and even may be unobservable, because of their explanatory power. Observability is therefore not a necessary condition for an explanation to be scientific; macroevolution has never been observed, yet it is still considered scientific.

Another common way of excluding ID from science is to charge that science only deals with what is repeatable, and nature's designs are unrepeatable. The problem is that scientists study many things that are unrepeatable, such as the Big Bang and the origin of life. Scientists have no clue how to repeat either of these events in a laboratory; yet they are clearly within the realm of science. If repeatability is considered a necessary condition for science, then disciplines such as archaeology, anthropology, cosmology, and paleontology must be excluded from science as soon as they discover some unique artifact or feature of nature. Since those disciplines are included within the realm of science despite their unrepeatability, ID also must be included. The repeatability objection therefore fails to exclude ID.

Other objections to ID's status as a science are also readily answerable.[22] The answers presented here, however, suffice to demonstrate that ID does not have to prove that it is a science—it already is. Popular atheist Richard Dawkins, surprisingly, agrees. Dawkins says, "the presence or absence of a creative super-intelligence is unequivocally a scientific question."[23]

OBJECTION #10:

ID IS AN ARGUMENT FROM IGNORANCE

Sometimes also called the "God-of-the-gaps" objection, the argument-from-ignorance objection is perhaps the most common criticism leveled against ID. In an argument from ignorance, the lack of evidence against a proposition is used to argue for its truth. For instance, a typical argument-from-ignorance might be: "Ghosts and goblins exist because it hasn't been shown that they don't exist." The proponent of this view believes the lack of evidence against ghosts and goblins is positive evidence for their existence, which, of course, is logically absurd. According to critics, design theorists argue for the truth of ID simply because design has not been shown to be false.

On closer inspection, however, it is the Darwinists who are arguing from ignorance. Darwinists frequently charge that just because it is not known how complex biological systems evolved doesn't mean that Darwinism is false. If Darwinists can't explain how complex biological systems evolved, however, what right do they have to claim that such systems evolved in the first place? Lacking an evidentially based model for how certain biological structures evolved means that Darwinists are arguing from ignorance.

In these encounters, Darwinists will often attempt to turn the tables, suggesting that ID reasons from, "Gee, I can't see how evolution could have done it," to the conclusion, "Shucks, I guess God must have done it." This misrepresents ID, however. When we examine complex biological systems, we do not infer design merely because naturalistic approaches to evolution fail. We infer design not from what we don't know, but from what we do know.

We have empirical evidence for the capacity of intelligent agents to design irreducibly complex systems such as the bacterial flagellum (the bacterial flagellum is a bidirectional motor-driven propeller on the backs of certain bacteria). Human engineers invented motors like this long before the flagellum was even discovered. If we apply the same reasoning to the flagellum as we do to human technology, it is obvious that the flagellum bears the marks of intelligence. ID is a positive argument from what we do know, not from ignorance.

Many evolutionary biologists pretend that the "house of evolution" is in good order, but occasionally a few come clean about its disarray. University of Chicago biologist James Shapiro, for instance, admits that "there are no detailed Darwinian accounts for the evolution of any fundamental biochemical or cellular system, only a variety of wishful speculations."[24] University of Iowa rhetorician David Depew likewise concedes, "I could not agree more with the claim that contemporary Darwinism lacks models that can explain the evolution of cellular pathways and the problem of the origin of life."[25]

There currently are no naturalistic explanations for the origin of life, the information content of DNA, the fine-tuning of the laws of physics, the privileged status of Earth, irreducibly complex biological structures, human consciousness, and morality. Given the lack of scientific evidence for these basic elements of life, it is more than fair to ask, "Who is ignorant here?" Naturalistic causes give no evidence of adequately accounting for any of these features of the universe. Intelligent causes, by contrast, have demonstrated this ability time and again.

It is high time not only to give ID the credit it deserves, but also to give Darwinism the discredit it deserves. Intelligent design is a young research program that still has a long way to go. Darwinism, by contrast, has become an outdated dogma ready to be consigned to the trash heap of history, and evolutionary theory, as developed by Darwin and prolonged by contemporary devotees, is essentially a relic of failed nineteenth-century economic theories about competition for scarce resources. We, on the other hand, live in the twenty-first century, an age of information where information is limitless. ID theory is the study of intelligently produced information. Despite all the protestations by Darwinists that ID is unscientific, ID is the cutting-edge of science. Get on board!

William A. Dembski and **Sean McDowell** are coauthors of *Understanding Intelligent Design: Everything You Need to Know in Plain Language* (Harvest House, 2008).

notes

1 Kevin Miller and Ben Stein, *Expelled: No Intelligence Allowed*, directed by Nathan Frankowski (Dallas: Premise Media, 2008).

2 See William Dembski and Sean McDowell, *Understanding Intelligent Design: Everything You Need to Know in Plain Language* (Eugene, OR: Harvest House, 2008); William Dembski and Jonathan Wells, *The Design of Life: Discovering Signs of Intelligence in Biological Systems* (Dallas: Foundation for Thought and Ethics, 2008); Michael Behe, *The Edge of Evolution: The Search for the Limits of Darwinism* (New York: Free Press, 2007); Benjamin Wiker and Jonathan Witt, *A Meaningful World: How the Arts and Sciences Reveal the Genius of Nature* (Downers Grove, IL: InterVarsity Press, 2006); Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet: How Our Place in the Cosmos Is Designed for Discovery* (Washington, DC: Regnery, 2004).

3 J. P. Moreland, *Kingdom Triangle* (Grand Rapids: Zondervan, 2007), 13.

4 Michael Shermer, *Why Darwin Matters: The Case against Intelligent Design* (New York: Times Books, 2006), 17.

5 See Dembski and McDowell.

6 Gregory Koukl, "Answering the New Atheists, Part 1," Solid Ground (May/June, 2008), 4, available at http://www.str.org/site/DocServer/5-6_SG_2008.pdf?docID=3021.

7 See Dembski and Wells; Gonzalez and Richards.

8 Inside Science News Service, "Physics Nobelist Takes Stand on Evolution," Story Archive (2003), American Institute of Physics, http://www.aip.org/isns/reports/2003/081.html.

9 The case of *Kitmiller v. Dover* evaluated whether teachers were required to read a four-paragraph statement to students, informing them that ID is an alternative theory to Darwinian evolution.

10 Thomas Clark and Colin Stearn, *Geological Evolution of North America: A Regional Approach to Historical Geology* (New York: The Ronald Press Company, 1960).

11 Michael Crichton, "Aliens Cause Global Warming" (Caltech Michelin Lecture, California Institute of Technology, Pasadena, CA, January 17, 2003), available at http:// www.crichton-official.com/speech-alienscauseglobalwarming.html (last accessed July 23, 2008).

12 David Berlinski, *The Devil's Delusion: Atheism and Its Scientific Pretensions* (New York: Crown Forum, 2008).

13 See this link: https://tv.ku.edu/news/2005/11/08/evolution-and-faith-a-peaceful-coexistence/.

14 Ken Ham and Hugh Ross are well-known defenders of young-earth and old-earth creationism, respectively. For a good discussion on the different interpretations of Genesis see, *The Genesis Debate: Three Views on the Days of Creation*, ed. David Hagopian (Mission Viejo, CA: Crux Press, 2001).

15 William Dembski, *The Design Inference* (Cambridge, England: Cambridge University Press, 1998), chaps. 2, 7.

16 Richard Weikart, *From Darwin to Hitler* (New York: Palgrave Macmillan, 2004).

17 "Nobel Laureate Steven Weinberg: Free People from Superstition," Free Thought Today (April 2000), Freedom From Religion Foundation, available at http://ffrf.org/fttoday/2000/april2000/weinberg.html (last accessed July 23, 2008).

18 Francis J. Beckwith, "Intelligent Design, Religious Motives, and the Constitution's Religion Clauses" in *Intelligent Design: William Dembski and Michael Ruse in Dialogue*, ed. Robert B. Stewart (Minneapolis: Fortress Press, 2007).

19 Shermer, 99.

20 Mary Carmichael, "A Changing Portrait of DNA," Newsweek, December 10, 2007, 64.

21 David Hull, Darwin and His Critics: *The Reception of Darwin's Theory of Evolution by the Scientific Community* (Cambridge, MA: Harvard University Press, 1973), 26.

22 See Dembski and McDowell, chap. 5.

23 Richard Dawkins, *The God Delusion* (London: Bantam Books, 2006), 58–59.

24 James Shapiro, "In the Details…What?" (Review of Michael Behe's Darwin's Black Box), National Review, September 16, 1996, 62–65.

25 David Depew, "Intelligent Design and Irreducible Complexity: A Rejoinder," in Darwinism, Design, and Public Education, ed. Stephen C. Meyer (East Lansing, MI: Michigan State University Press, 2003), 447.