

**The Arlin M. Adams Center**  
FOR LAW AND SOCIETY

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**Susquehanna University**

Established in 2001, the center focuses on the law and its impact on institutions and people, providing a rich learning and experiential resource for students, faculty, visiting scholars and members of the community.

The family of Sigfried and Janet Weis and The Degenstein Foundation of Sunbury, Pa., with support from the Annenberg Foundation, founded the center in honor of prominent Philadelphia jurist Arlin M. Adams whose distinguished legal career includes 17 years on the bench of the 3rd U.S. Circuit Court of Appeals.

The center explores the significant place law occupies in our everchanging social, political, economic and cultural life. It provides a forum for thought-provoking examination of contemporary issues in areas such as human freedoms and civil rights, social responsibility, technology and privacy, and constitutional interpretation.

Susquehanna's emphasis on undergraduate liberal arts education and preprofessional studies offers an ideal home for the Adams Center. The center supports activities and resources that expose students to the theory and practice of law through internships and field experiences, networking, professional seminars, independent study, research projects, and enhanced library resources. The interdisciplinary programs and activities of the Adams Center enrich and inform civic life in the Central Susquehanna Valley and nationally.

## Welcome Remarks

President L. Jay Lemons

Good evening, one and all. Welcome to Stretansky Hall and this program and this series of events hosted by the Arlin M. Adams Center for Law and Society. A brief word of history about the Adams Center. It was created in 2001 through generosity of the Degenstein Foundation based here in Sunbury, Pennsylvania and with support, also, from the Annenberg Foundation, another point of connection of Professor Miller. The Center honors Judge Arlin Adams, a distinguished and nationally respected jurist, attorney, and public servant who served on the United States Circuit Court for the Third Circuit for a period of 17 years. The Judge has had a very long, very proud, and a very distinguished history of association with Susquehanna which dates back, at least in a formal way, to his service as a Woodrow Wilson fellow on this campus. Judge Adam has an honorary degree and he has an association with some of this institution's great friends that goes back many, many more years. I am particularly happy and proud tonight that two of Judge Adams' law school classmates, men who worked with Judge Adams, who served with Judge Adams in a variety of ways, are here tonight with their wives. John Zeller and his wife Martha, where are you, John and Martha? I'm not seeing you. John and Martha are back here about in the middle of the house in the center. And then Judge Adams' friend Sidney Apfelbaum and wife Carol. For those of you who don't know, Sidney is a trustee left with the responsibility of stewarding the resources of Charlie Degenstein, and I hope all of you know and understand the importance of that great work in the life of the institution. In fact, the Adams Center was born between a sofa in my office and the door, which could not have been six feet apart, because there was a discussion about establishing a lecture in honor of Judge Adams. And before Sidney and his son Michael reached the door, a lecture series became a center. We are so very, very proud of being the home of the Adams Center and to you, Sidney and Michael and Jeffry, we are enormously grateful for your support and for the vision of creating a public forum for discussion of really important topics. Tonight's program will certainly amplify the rich opportunities that have come because we have the Adams Center. Its mission is to explore the intersections between the law and various other disciplines in our society which inevitably surface in contemporary thought and discussion. The work of the Adams Center is guided by a steering committee comprised of Susquehanna faculty. Three members of the faculty work very closely with our director. They are Professor Michele DeMary of political science, Professor Tom W. Martin from the department of philosophy and religion and classical studies, and Professor Rick Davis from the Sigmund Weis School of business. Would the three of you please stand, and let's acknowledge you and thank you for your leading role in guiding us. Finally, it's a happy pleasure for me to offer a very brief introduction of the first full-time director that the Adams Center has had. Again, through the generosity of a gifts and a commitment from the Degenstein Foundation, Susquehanna was fortunate to recruit to central Pennsylvania and to Susquehanna University Mr. Al Sobel as our director. Al came to us having previously served as the president and chief executive director of the office of the American Judicature Society, which is devoted to trying to work with and help judges in the effective administration of justice. Al brings a great deal of energy

and enthusiasm to anything that he does and he has certainly done that in ways that mesh superbly with the principles and practice of law and the values of a liberal arts education. It pleases me that tonight we can bring together members of the larger greater Susquehanna Valley community, but with a huge collection of the Susquehanna students here, because it is for each of you that these programs really matter. So with that let me thank you for coming, let me thank you for your attention and your interest in the topic. Al Sobel, please come forward and more formally introduce our program. Thank you.

## Introductory Remarks

Allan D. Sobel, Director

The American public has grappled with the relationship and the tension between science and religion since the founding of this nation. The fact is most of us believe in both science and religion. While science today is a vastly successful discipline, religion continues to play an important role in the lives of most Americans, offering answers to questions that science cannot answer, questions like why are we here, what is the purpose of the universe, and how should we act? For the most part, the law stays out of these discussions. The law stays out of these issues in our religious institutions. In our family settings, in all of our private settings we are free to have whatever religious beliefs we would like without regard to what science might have to say.

And, on the other hand, scientists, when they do science, are free to do whatever they want, essentially, without regard to what some or a majority of the people in this United States feel is moral and proper. It's only when there are issues between religion and science that affect public institutions that the law has something to say, because our federal and state constitution prohibit public institutions from establishing religion. The most persistent issue of this type to come before the courts has been the tension between Darwin's theory of evolution and creationism. In 1925, a public school science teacher by the name of Scopes stood trial in Tennessee for violating the law that made it unlawful to teach any theory that denied the story of divine creation as taught in the Bible and to teach instead that man has descended from a lower order of animals. He was convicted, but the conviction was reversed on appeal because of a technicality. It's a famous case. It's referred to as the Scopes Monkey Trial case, but it's a case that really resolved nothing. In the late '60s, the United States Supreme Court struck down an Arkansas statute that forbid the teaching of evolution in public schools as a violation against the ban against establishing religion. That decision, coupled with a decision in 1987 by the court which struck down a Louisiana statute that forbid the teaching of evolution without also teaching creation science, was thought by many to be the end of this public tension between religion and science. However, in recent years intelligent design theory has emerged, which contends that the world is too complex not to have been designed by an intelligent creator. Some consider intelligent design theory to be merely a repackaging of creationism to make it a scientific theory. In fact, in *Kitzmiller vs. Dover Area School District*, an action that was brought in Federal Court in Pennsylvania, that was the contention of the Plaintiffs, who brought an action against the school district that required ninth grade biology teachers to read a statement to all of the students in their classes which, in effect, denigrated the theory of evolution and recommended that they consider looking at materials that talked about intelligent design theory. The Court determined that intelligent design theory, and so ruled, was merely another way of teaching creationism. And the Court went on to find, based upon expert testimony, that evolution was a theory that was not contradicted within sound science and, in fact, was totally consistent with the belief in a supreme being. The Plaintiffs' lead expert in the Dover case was Dr. Kenneth Miller, who is with us tonight. He is here to help us understand the reasons for the tension between science and religion and the relationship between the two

disciplines. Is the problem that religion at one point staked out too much territory before the fund of knowledge available to our society had grown to the point that we learned about evolution and other scientific concepts or is the problem that science claims too much, that it claims that all truths are those truths that are proven by the scientific method and disregard truths that other disciplines might help us find? According to Pope John Paul II, the relationship between science and religion must be defined through an interchange between the two disciplines. He made a statement in 1988, which I think frames well our conversation for tonight, when he said, "In the process of dialogue we must overcome every regressive tendency to any unilateral reductionism, to fear and to self-imposed isolation. What is critically important is that each discipline should continue to enrich, nourish, and challenge the other to be more fully what it can be and to contribute to our vision of who we are and who we are becoming. While science and religion can and should support the other as distinct dimensions of a common human culture, neither ought to assume that it forms the necessary premise for the other. The unprecedented opportunity we have today is for a common interactive relationship in which each discipline retains its integrity and yet is radically open to the discoveries and insights of the other." After Professor Miller concludes his remarks, we hope to present just such an interchange between members of various academic disciplines that will be moderated by our Chaplain, Chaplain Mark Radecke. Dr. Miller holds a Bachelor's Degree of biology from Brown University and a Ph.D. in biology from the University of Colorado. He has taught at Harvard and at Brown University since 1980. He is the author of approximately 75 scholarly articles and papers and numerous books, including Finding Darwin's God: A Scientist's Search for Common Ground between God and Evolution. He is the coauthor of the most widely read high school textbook on biology in the United States. He has received numerous teaching awards, including the Walter M. Annenberg Distinguished Professor of the Year award. He is a firm believer in evolution and a firm believer in God. He also knows how to maintain control if the need arises. You should know he is an umpire who works NCAA fast pitch softball games. I ask you to join me in welcoming Dr. Kenneth Miller.

## The Dialogue

Dr. Kenneth Miller

Thank you very much. It's an honor to be here. I appreciate it very much. I appreciate the very kind introduction. One never knows how one is going to be introduced, so I always bring my own introductory slide along. I am a cell biologist. That means I work on biological membranes. I use the electronic microscope. I publish in journals like "Cell" and "Nature," and so forth. My first job in a sense is that of a researcher. My second job is one many of you all will have at some point in the future and many of my colleagues already do, which is I'm a I teach a cell biology course in the fall and in the spring I teach what is often the single largest course at Brown, which is an introductory biology course. Just to give you an idea of the size of the course, those are not my students. Those are my teaching assistants. So that gives you an idea of the size of the course. I notice there are a lot of college students, a lot of young people in the audience. I always get really nervous when I speak in front of students of your age because a lot of you already know me and you probably don't like me. And the reason for that is if you used any of these books when you were in high school, I wrote them. I'm the guy who is responsible for the strain in your back when you carry these things back and forth. It's a really funny thing about becoming public enough when you write a book that people use. I live in a little town in Massachusetts called Rehoboth, Massachusetts. It's only about 6,000 people. And for a long time people in the town who knew me knew me through my involvement in youth sports, because for about six years I was sort of the commissioner of the girls' softball program. Everybody knew Miller as sort of the softball guy, but a lot of people didn't know what I did for a living. One day our local high school, Dighton-Rehoboth Regional High School, adopted the book with the elephant on the cover. My picture was in it. All of a sudden all the parents would look at this and say, "Oh, my God, that's Ken Miller." So one day about two months into the year I was picking my daughter up after field hockey practice at the school and in front of the high school Bonnie Kelly was there. Bonnie Kelly is a woman I knew through softball. She flagged me down and she said, "Ken, you wrote the book they are using in the high school." I got a big, dumb look on my face and I smiled. I assumed I was about to be complimented. She says, "You know, the funny thing is, you don't seem that smart." I asked my wife about that and she reminded me that in the state playoffs I had pinch hit for Bonnie's daughter and that might be one of the reasons why she thought I wasn't very smart. Allan was also kind enough to mention a book I wrote a few years ago on evolution and religion called Finding Darwin's God: A Scientist's Search for Common Ground Between God and Evolution. This is something I've been interested in for a long time. When I was finally persuaded to write a book, I thought, you know, like a little book. It would be an unusual thing for a cell biologist to have on his CV. And I sent Mom and Dad a copy and my brother, and so forth. To my absolute astonishment, this book struck a responsive chord among a lot of people and it has now gone through 25 printings in paperback. And Harper Collins, the publisher, has just introduced a second edition of this book sort of post Dover trial. If you are interested in issues of science and religion, I hope very much you would be willing to take a look at this, because these are exactly the things I tried to address in the book. Now, in a sense the theme for our whole get-together is

simple. That is, we live in interesting times. As an example of that, it was only about five years ago that a county in Georgia, Cobb County -- second largest school district in Georgia -- decided to buy new biology textbooks for their students. They bought, I guess, the book they thought was the best available. But a few members of the school board got worried that these books were dangerous. They decided they were so dangerous that they couldn't be given to kids unless a warning label was pasted on the cover of the book. And the warning label said, Evolution is just a theory; not a fact. Don't take it too seriously. Don't get upset, and so forth. As good, public-spirited citizens, I'm sure you all want to know, what book was it that was so dangerous that it required a warning label. Well, yes, it was our book. We were the culprits. And here is what that warning label said. It said, "This textbook has material in revolution. Evolution is a theory; not a fact, regarding the origin of living things. This material should be approached with an open mind, studied carefully, and critically considered." This eventually became a court case. My first time ever in court was, in fact, dealing with this particular issue in Atlanta in Federal Court. But after the sticker went on, a reporter for "The Atlanta Journal Constitution" called me up and she said she wanted to interview me. I said, "Yeah. That will be fine. And she said, "Dr. Miller, are you outraged by those stickers they put on your textbook?" I thought, Why does she put it that way? And I thought to myself, I bet I know what she's doing. I think she's trolling for a quote. She wants me to say something inflammatory so that she can write an article that is headlined Author Criticizes or Author Outraged or, even better, Northern Author Attacks Board of Education. So I decided I didn't want to give her the satisfaction, so I said, "No. No. No. I like the sticker." She said, "You do?" I said, "I think the stickers are great. They just don't go far enough." She said, "What do you mean by that?" I said, "Well, yeah. The book has material on evolution. In fact, the cover of the book says, Unit Five, Evolution. Evolution is a theory. She said, "Is evolution a theory?" I said, "Of course. Chapter 16 of that book is called 'Darwin's Theory of Evolution. There is no agreement that evolution is a theory. But when you say it's a theory; not a fact, that gives a false impression, because it makes students think that theories and facts are opposite things." She said, "Well, aren't they?" I said, "No. Let me give me you an example. Suppose a young person went to the University of Georgia and decided they were going to major in, let's say, physics. One of the subjects they have to study to get a physics major is called atomic theory. Now, I want you to think about that subject. Why do they call it atomic theory? Is it because we are not really sure atoms exist and some day if we get a lot of good evidence maybe we'll change the name of the subject to atomic facts? "Well, the answer is, of course not. What a theory does to science is to provide a unified explanation. Atomic theory provides a unified explanation for hundreds of thousands of experimental and observational facts. Theories in science never become facts. Theories in science explain facts. That's why theories are actually at a higher level of understanding than fact.

"But," I said, "the sentence that really bugs me actually is the third one." She looks at that. She said, "Are you against having an open mind?" And I said, "No. No. No. Read that like a 14 year old. You know what that says to a 14 year old? What that says when it says, 'This material' -- that means evolution, of course -- is that we're certain everything in this book is absolutely correct except

for this one subject. That's evolution and that's a little shaky. And you want to keep an open mind on it."

So she said, "You object to that as an evolutionist?" I said, "No. I object to that as a cell biologist. Because you know what it tells a student using this book? It says, You don't need an open mind to study cell biology. You only need that for evolution. You don't have to study carefully for biochemistry. You only have to do that for evolution. And you don't need critical analysis to study ecology. You only need that for evolution."

I said, "Look. I tell you what I will do. No charge. I will rewrite the sticker for Cobb County and maybe I'll keep them out of trouble. Here is my proposed rewrite: This textbook has material on science. Science is built around theories which are strongly supported by factual evidence. Everything in science should be approached with an open mind, studied carefully, and critically considered."

Alas, they didn't take me up on the offer. They got sued by the parents in the district. They went to court and they lost, and those stickers are gone. Nonetheless, this, as you heard from the introduction, didn't settle things. Anti-evolution activity is a nationwide phenomenon. If you are interested in doing a little background on this, two years ago, the summer of '05, "Time Magazine" had a cover story called "The Evolution Wars." They reported how many Americans reject the theory of evolution. According to some surveys it's most of us.

What our president has said about the theory of evolution -- and there is President Bush. Although my co-author and I, we got a real kick out of which textbook they superimposed President Bush's face on. That is our book. And we were very excited by that, because we are always looking for new cover artwork for our book. And in two years the State of Texas is going to be adopting new biology books. You know, I think that might be the cover. So we will see what we can do.

But this really is a national issue. In just the last couple of years I've testified in Federal trials on this issue here in Pennsylvania and, as I just mentioned, in Georgia.

Also, in the last elections, in '06, evolution was the issue in statewide elections in two other American states. Those two states were Kansas and nearby Ohio. These were state school board elections and evolution was the issue in both of these states.

Now, you might wonder, because you haven't had this yet in Pennsylvania, what does an election look like when evolution is the issue? Well, this is the front page of "The Plain Dealer," the larger newspaper in Ohio, about 10 days before the election. And on the front page it said, "Normally low profile contest in spotlight." What they were talking about was the state school board race. It was a race between a woman named Deborah Owens Fink, who is a marketing professor at the University of Akron and the leader of the anti-evolution forces on the Ohio Board, and her opponent. And her opponent had a very memorable name. Her opponent was Tom Sawyer. Stands out well on the ballot. Now, how was the issue characterized? A talk show host in Cleveland told his listeners this about the election, "If you believe in God, creation, and true science, vote for Deborah. If you believe in evolution, abortion, and sin, vote for her opponent."

Now, I see a lot of analysis of the November election, but I haven't seen anybody who totaled up the sin vote. But if this talk show host was right, apparently in Ohio the sin vote won. Pro evolution state school board candidates swept the slate in Ohio and it turns out pro evolution school board candidates also won the election in Kansas.

I have always been convinced that the American people, when science takes its case to them, will make the right decision in electoral politics. That's exactly what happened here.

Now, this hasn't stopped being an election issue. Now, let me remind you, it was only a couple weeks ago when there was a presidential debate among candidates from a major party and the wise guy moderator decided to have a little fun and said, "I'm curious. Is there anybody on the stage that doesn't believe in evolution?" Well, three hands went up. There you can see the guys. And then every one of these candidates then subsequently explained it.

Now, my favorite explanation actually came from Mike Huckabee, the former governor of Arkansas. And I rather like Governor Huckabee for a couple of reasons. One is, I think he's got a great sense of humor. He's got the best sense of humor of anybody in the race. I enjoy listening to him. And for all I know, he might make a very good president.

But I was struck by how Governor Huckabee explained his stance on this. I was particularly struck by one of the things he said. That is, "If anybody wants to believe that they are the decedents of a primate, they are certainly welcome to do it." I thought about that for a long time. I've never met Governor Huckabee. I hope some day maybe I'll be passing him in the airport, and if I get a chance and the Secret Service doesn't wrestle me to the ground, I'll wish him well and tell him I enjoy hearing from him. I'll wish him luck in his campaign. But then I'll say, "Governor, I have something to tell you and I tell you this simply as a biologist. Governor, you are a primate."

Now, why do I say he is a primate? Well, it turns out we human beings are classified as primates. Any biologist will tell you that. Now, you might want to know, Whose fault is that? Who's to blame for us humans being included as primates? Is it that awful guy Charles Darwin? Is he, the monkey guy, is he the guy who said we're primate?

The answer is no. It wasn't Darwin at all. It was Carolus Linnaeus, the father of modern scientific classification. Linnaeus was a creationist. In fact, I hope some you still study Latin. At the frontis piece of his book on classification he wrote, "Deus creavit, Linnaeus disposuit." And that means -- at least somebody understands latin -- God creates, Linnaeus arranges. Because he regarded his job as arranging God's great creation.

So Linnaeus -- and remember he was certainly a creationist. He lived 150 years before Darwin. He recognized that the nature of our bodies, our own biology makes us primates. In fact, there is a copy of his book at the library at Brown and here is a copy of the page in which the order of primates is detailed. You will notice the genus homo -- that's our genus -- is located right there. He was the one who recognized that, in fact, we are primates.

So if any of you happen to run across Governor Huckabee, please tell him no matter what he thinks about evolution, he is indeed a primate.

Now, why is evolution under such profound attack? This booklet for me is personal. When I lecture my freshman biology courses -- it's Monday, Wednesday, Friday at 11:00 -- I am usually done a little bit before noon. It's right on the campus green I wrapped up on Wednesday, answered student questions. I realized it was Ash Wednesday and I walked across the green to the chapel right on the other side and went to Ash Wednesday services.

And on my way out I saw a student in my class and the student said, "What are you doing here?" I said, "Same thing you are." She

said, "But you can't," and I said, "You know, when they hired me the Dean told me I was free to come and go. I think I'm allowed to be here." She said, "No. I'm going to give you a book tomorrow. The book will explain why no person who calls himself a Christian can possibly be an evolutionist." I had just finished lecturing on evolution.

And this was the book she gave me. It depicts evolution as the ultimate lie, as the apple in the mouth of a servant. Now, it's written by Ken Ham. I don't know if that name rings a bell, but he is the president of the largest anti-evolution organization in the United States. Number One. They're not a fringe group. They're called Answers in Genesis. These are the guys who just opened a brand new \$27 million creation museum in northern Kentucky. This is the way in which they depict evolution.

Now, a lot of people would say evolution is under attack because it's wrong, because it's a shaky scientific theory. I don't think that's the reason. Biology is a discipline that is a subject composed of many disciplines. If you were going to attack one thing or take one thing out of the biology curriculum, why would you take out evolution? You have a lot of other stuff to take out. Why not take out cell biology or physiology or, for God's sakes, why not take out organic chemistry?

As you can see, there might be some support for that. Although I have to say I do apologize in advance to any chemists who may have slipped into the audience. I didn't really mean it. You can go to Answers in Genesis website and they will give you the answer. They don't depict evolution as being shaky. They depict it as being the rock solid foundation of everything that is wrong with society; lawlessness, homosexuality, pornography, and abortion.

If that's not graphic enough for you, same guys, same organization, they have this cartoon sort of showing what's going on in this war between creationism and evolution. I show this not to make fun of these guys, but to make a very serious point. Every one of my scientific colleagues will ask me, Ken, you know these guys. How about if we show them this fossil or this really cool experiment that was just published in Nature? Tell them that. Maybe that will convince them.

For those people I pull this cartoon out of my drawer and show it to them. If you actually believe that evolution was founded by Satan, flies the flag of humanism, and is responsible for divorce, pornography, abortion, and racism, there is no experiment, there is no fossil, there is no piece of evidence that will ever convince you that evolution is right. This hostility is engrained. That's why I say it's a cultural war and not a scientific argument.

It's also important to note that the whole idea of intelligent design is built on the idea of portraying evolution as inherently hostile to religion. This gentleman is Phillip Johnson. He was a Berkley law professor and he is generally acknowledged as the founder and intellectual leader of the intelligent design movement. He calls the strategy of intelligent design the wedge strategy. And when he describes what he wants the wedge strategy to do -- and this is the idea of intelligent design -- he says, "Our objection is to convince people that Darwinism is inherently atheistic. That will shift the debate from creation versus evolution to the existence of God versus the nonexistence of God. We can introduce the people to the truth of the Bible and the question of sin, and finally introduce them to Jesus."

I think all Christians should want to introduce people to Jesus, but most of us don't want to do it in the science classroom. That's exactly what Johnson has in mind.

Still, I'm always struck by how quickly any discussion about evolution turns to a discussion of religion. And I am going to give you an example of one of those educational channels that you watch all the time to supplement your education here at Susquehanna. I want to show you this erudite conversation between the intellectual host and his guest. Watch how quickly this turns to the discussion of religion. Now, we're winging it here on the sound, so this is the point where the sound should go up. (A video was played from The Colbert Report.)

Well, I hope you enjoyed watching it as much as I did being on the show. This is probably -- Mr. President, this is probably a very sad commentary on the state of higher education of America. Nothing I've ever done in my whole scientific career has gained more credibility for me with my students than being on The Colbert Report.

Nonetheless, the views that I expressed in that sort of brief interview are actually pretty much main stream within science. A surprisingly large number of people in science have come out to make exactly that point. Evolution is not inherently contradictory to religion.

Now, I'd recommend my own book, but I don't want to be pumping up my own sales. I want to recommend another one. And this is a book called The Language of God by Francis Collins. Now, Francis Collins is one of the most famous biologists in the world. He is on the short list -- believe me -- for a Nobel Prize. He is the head of the Human Genome Project. He also happens to be a deeply committed Evangelical Christian. And last summer he published a book, The Language of God: A Scientist Presents Evidence for Belief. Francis Collins is an uncompromising evolutionist and also, as I say, is a deeply committed and sincere Christian.

Again, if you are wondering how does a scientist balance these two things, Collins' book will give you the answer. And Collins' answer is very straightforward. If two ideas are not in conflict, they don't have to be resolved. He argues that religion and science fundamentally are not in conflict. So, again, I couldn't recommend that book to you more highly and Francis Collins in scientific stature is second to none. Let's go back to Pennsylvania. As many of you may know, what precipitated the issue in Dover was the attempt by Dover teachers to recommend a new biology textbook to their board of education. Once again, guess which one it was. One of the members of the Dover Board looked at the book and said he didn't want this book because it doesn't offer creationism. In other words, he told people in a public meeting, "We want in the public school curriculum." When informed by the teachers there was no such book, Dover decided to instruct the teachers to prepare a curriculum on intelligent design.

This is a headline on MSNBC on the internet about the school board okaying challenges to evolution. On another internet website, the Washington Post, the day after the school board voted this way, this was the score board outside the Dover High School. It said, "Intelligent design, 1; Darwin, nothing."

I really like that because, as an old baseball player, I looked at that and I thought, well, first of all, at least they made us the home team. We are at the bottom. And I also recognize it doesn't matter to let the other team get ahead by a few runs as long as we get to bat at the bottom of the ninth. And, lo and behold, we did get to bat in the bottom of the ninth.

Now, what was going on at Dover? Is this sort of an isolated thing? The answer to that, surprisingly, perhaps, to some of you is no. What was happening in Dover is that the school board was following a play book called Intelligent Design in the Public School Science Curricula authored by people from the Discovery Institute in Seattle, Washington. This was a play book that basically said, Here is how you get intelligent design into your public schools. And one of the things they recommended was that you buy for your students an intelligence design textbook called Of Pandas and People. I recommend that, because this turned out to be critical to what actually happened in Dover.

This is what was going on. There was what was going on. Easy for me to say. The school teachers in Dover, too, I think, their everlasting credit, the risk of being fired, refused to implement this curriculum. The board of education then drafted a four-paragraph statement on intelligent design. They said, "Would you at least read this to the students?" Once again, the science teachers in Dover refused.

Here are three of the science teachers from Dover. Once again, at the risk of being fired from their jobs, they refused to do it. So the school board was reduced to sending the superintendent and the assistant superintendent into the classroom to read this lesson to students while teachers stood outside in the hallway. A few days later 11 parents in the district filed a lawsuit.

This is the lawsuit, Kitzmiller vs. Dover Board of Education. This is the press coverage from the filing of the lawsuit. It was an interesting case legally, but I think on a personal level, as any of you from Dover know, this was the case that literally tore the town in half in terms of dissension and opinion on both sides.

This case moved toward trial very quickly. In just nine months it was ready for trial. A lot of magazines dubbed this the new Scopes trial or the new monkey trial.

For better or for worse, I had the honor, if that's the right word, of being the lead witness in that trial. I spent two days of that trial on the witness stand. Nothing I've ever done as a biologist ever prepared me for being in the court room, being cross-examined this way. And it was an interesting experience and one that I will never forget.

Before we go further, it's worth thinking about something. The subject of this was this idea of intelligent design. Intelligent design in the context of this conflict and trial has a very specific meaning. It's very important to understand what that meaning is.

What I would say is that theists, people who believe in God, almost by definition would say that there is a transcendent intelligence and they might even express it as a view that there is an intelligent design to the universe and the natural world. For what it's worth, that is a view that I happen to hold myself.

But that is not what is meant by intelligent design in this trial, in this struggle or in the context of America today. Rather, intelligent design is the proposition that design -- design doesn't actually mean design. It means outside intelligent intervention. It means creation - is required to account for the origin of living things. This means intelligent design is very different from the sort of general philosophical idea of design, which I would actually endorse, and makes it a doctrine of special creation. That's the important point about what intelligent design means.

Now, an interesting thing happened on the way to the courtroom. That is, as the trial loomed, advocates of intelligent design were salivating to get Darwinists into a federal courtroom. This is, in

fact, the NBC TV sketch of me being cross-examined during my testimony in trial in the Federal Court in Harrisburg.

Now, when I say they were salivating, they were excited because they said, This is the right case. We are going to argue intelligent design and even have a conservative judge appointed by President George W. Bush. This is a case we can win.

As it turns out, they put that in writing. Bill Dembski, who is one of the leading lights of intelligent design, in May of 2005, on his blog published something he called The Vise Strategy: Squeezing The Truth Out Of Darwinists. Now, what Dembski said was that he was "eager to see the day when we have subpoenas and evolutionists can be compelled to be deposed and interrogated at length" - in other words, at trial. "There are ways for this to happen and the wheels are in motion. In other words, what I propose, then, is a strategy for interrogating the Darwinists to, as it were, squeeze the truth out of them."

In case you think he was just kidding around - and you can't make this stuff up -- here are the pictures that Dembski put on his website. It's a little Charlie Darwin doll with his head in a vise being squeezed. And he thought that's what's going to happen in the trial.

Now, Dembski was so excited about the prospect of apparently going to trial that when the lawsuit was actually filed, he signed on as an expert witness to defend the board of education. He was one of eight people who did this.

I should add, this is not a trivial thing, to sign on as an expert witness for one side of a case in Federal trial. You don't just say, Here I am. You have to write what is called an expert statement. Mine was 50 pages long, single spaced, just like a Master's thesis. Dembski did the same thing. You have to file this information. Before trial you have to be deposed by the other side.

On May 25th, 2005, I was deposed by lawyers for the other side on a single day for nine and a half hours with a court stenographer present. It was an interesting experience.

A week later Dembski was supposed to be deposed. The attorneys went to Memphis, Tennessee, where Dembski was at the time in the hotel room that had been set aside. They had a court stenographer there. He wasn't there. An attorney walks in and said, "I'm Dr. Dembski's attorney. Dr. Dembski has withdrawn from the case. Have a good day." So he pulled out of trial.

The next person -- this was the guy who said he can't wait to get these guys in the courtroom. He ran away. Then the next person they were supposed to depose was Stephen Meyer, the director of the Discovery Institute of Science and Culture, the coauthor of that booklet on how to get intelligent design into the classroom. Well, guess what? We get a call from an attorney who says, "Dr. Myer has withdrawn from the case."

So one at a time the people who said they would be there to back up the Dover Board turned around and withdrew from the case, leaving just these three guys, including Lehigh University Professor Michael Behe to actually show up in court. And I give all three of these guys credit, because at least they backed up their promises. Dr. Behe certainly did that.

Now, the trial began in the end of September, 2005, just almost exactly two years ago tonight. As I mentioned, I was the lead witness in the trial. The reason for that is in a trial it's the Plaintiffs who have to prove their case first. So we had to go on first and show what

was wrong. The other side got to bat at the bottom of the inning. They got to come on last.

The goals of my testimony in the court basically were three fold. One, I wanted to define evolution as a scientific theory, I wanted to describe some of the evidence that supports it, and then I had to undermine the testimony of people on intelligent design.

I don't mean undermine in a sneaky way. Because the Plaintiffs make their case first and then the defense comes in, it meant that the advocates of intelligent design would come after me and I would not get to rebut them. Basically what I had to do in my testimony was to explain what they were going to say, why it was wrong, and why even their counter arguments would turn out to be wrong in a way, hopefully, the Court, which is to say the judge, would understand. You don't do this casually. In fact, in working with one of the attorneys, I developed an outline of my testimony, a whole series of slides. Lawyers are funny. Lawyers don't called slides slides. They call them demonstratives. So we had to prepare demonstratives.

This was actually sort of our plan for how I was going to be questioned. Here would be my slides - my demonstratives and so forth. Basically an outline of my testimony was where evolutionary theory came from, what it is like, support within the scientific community, the fact that it's testable, why intelligent design isn't science. Then I wanted to deal with specific intelligent design arguments. Then I wanted to take that textbook *Of Pandas and People* and show it was filled with errors; not just typographical errors, but deliberate errors designed to distort what evolution says. Also, I was going to be asked why intelligent design ought not to be in the classroom.

Now, the result of all of this -- and there were six expert witnesses for our side; our case went on for almost two weeks -- was that simply intelligent design collapsed - there is no other word for it -- as anything even resembling a scientific theory. I want to give you sort of a glimpse of what I mean by that.

Specifically dealt with in the trial were three of the arguments you hear all the time raised against evolution: That there were no transitional fossils, which evolution would require, and the complex systems like the bacteria flagellum or the cascade of proteins that clots our blood simply couldn't be explained by evolution. I will show you one of these first. This is the old argument about there being gaps in the fossil record. A few years ago the National Academy of Sciences tried to deal with that. They said that, Look, there is so many intermediate forms that have been discovered between fish and amphibians, amphibians and reptiles, all along the primate line, that you often can't tell where the transition occurs from one species to another. That's the very definition of an intermediate form. We wanted to give people specifics; not quotations. So Kevin Padian, a paleontologist from Berkeley, took the stand and he gave example after example after example of transitional intermediate forms of the fossil record. One of the ones that clearly stuck in the Judge's mind was this. We have known for a long time that Cetaceans, swimming mammals, dolphins, evolved into land-dwelling animals from 80, 90 million years ago. The earliest Cetacean fossils have unmistakable marks of their land origin.

But critics of evolution always like to say, Oh, yeah. Where are all the intermediate forms? If you guys are right, there should have been an organism that lived sort of like halfway between land and water. A few people have even ridiculed the idea that you could have such an animal, that an animal that could live on both land and water

would be too clumsy on land and too slow a swimmer to actually be viable. It's ridiculous that an animal like that could ever exist.

They stopped saying that about a decade ago when paleontologists dug up skeletons of organisms that looked remarkably like organisms they said could never have existed. This is one of those skeletons. Again, I hope you still study Latin.

This organism is called *Ambulocetus natans*. Write that down. *Ambulocetus* is the walking whale. *Natans* is who swims. And this was the walking whale who could swim. This guy is a perfect intermediate form right in the middle of his transition.

So what did evolutionists do? Did they say, Cool. We got the intermediate form. We win. Bye? The answer is no. We wanted to understand the whole story. So paleontologists flocked to the area in the world, the Indus River valley, where these guys were found. They found more of these. Then they found a second species and then a third and then a fourth, to the point where we now have a total of six transitional forms linking these terrestrial mammals with marsupial descendents. Now, this is an extraordinary discovery or series of discoveries in just the last decade and a half.

A couple months ago I spoke in Connecticut. I was very, very careful to say this wonderful diagram comes from a book by the science writer Carl Zimmer. The reason was he lives in Connecticut. I was afraid he might show up and would be a little upset if I didn't acknowledge this was, in fact, his diagram.

Well, as it turns out, he was there. Happy I did this. And he came up to me afterwards. He said, "Ken, thank you for mentioning my name, the fact that I did this, but I have to tell you something. There is a mistake in that slide." I said, "Oh, man. What did I do now?" He says, "The mistake is it is out of date. And he handed me a review article that was more recent. He said, 'You ought to correct your slide.' I have to tell you, he's right.

So the notion that there are six intermediate forms, I'm sorry to tell you, is wrong. The more recent data actually shows there are 23 that link these species. What we have is this explosion of evidence documenting the evolutionary transition to the point where Hans Tuisit at Ohio State has actually written an article saying, You know, we know so much about the evolution of whales we should consider them to be poster children for macro evolution or, as one of my friends who is much better at phraseology than I am told me once, "Ken, the next time you get into an argument with these guys, don't make it long winded. Put it this way. Just get up there and say, 'I'm only going to say one sentence. We have the fossils. We win. End of story.'" I think that's a very good way to summarize the scientific situation.

Now, fossils weren't the only thing. There is this biochemical argument. No one has done a better job of advancing this biochemical argument than Michael Behe at Lehigh University, a card carrying biochemist. One of Michael's favorite examples is the bacterial flagellum, which is this absolutely gorgeous, complex machine made up of about 40 different proteins. It's an acid powered reversible rotary engine. Living things invented the rotary engine a long time before Wankel did and a long time before Mazda decided they would be cool to put it in sports cars. This is an extraordinary machine. It requires about 40 different proteins.

Dr. Behe says it is irreducibly complex. What does he mean by that? Well, the first thing to understand is that irreducible complexity is a claim that it could not have evolved. He said an irreducibly complex system cannot be produced by numerous successive

slight modifications - in other words, evolution -- from a precursor system because -- and this is the critical sentence -- any precursor to an irreducibly complex system like this one that is missing a part is, by definition, nonfunctional.

The argument is you have no function in this system until all 40 parts are assembled. Since evolution can only evolve a couple of parts at a time if they have no function, natural selection can't know that 10 million years down the road it will have enough parts and, therefore, this would be a functional system. If all that were true, that would have one heck of an argument against evolution. I'm quite serious about that.

David DeRosier, a structural biologist, has written this machine -- this is a diagram of the bacteria flagellum -- more so than any other molecular motor, almost resembles a machine designed by a human. That kind of quotation makes intelligent design people get very excited, for good reason.

Now, the essence of their argument is summarized in this slide. If you have a complicated multi-part biochemical machine it has a function. In other words, it does something. Like flagellum moves, spins around. It will be favored by natural selection. But the individual parts that make it up have no function on their own. So, therefore, natural selection cannot shape these parts. Therefore, you can't get here from there because evolution cannot shape these parts.

Now, how do evolutionists answer this? The answer is actually very simple. It goes back to Darwin himself. That is, what we think is that the complex machine is actually made up of simpler machines that do other things that when they are combined produce an entirely new function. The components of these machines originate with functions of their own. That's not evidence, but just an argument.

But here's the cool thing about that. This kind of argument leads to a test and the test is if the irreducible complexity argument is correct, you know what? The parts of these complex machines should be absolutely useless on their own. But if the evolution explanation is correct, the parts of these machines should, in fact, be functional for other purposes, other jobs. All we have to do is look at these things and see which of these guys is right. It's an actual test.

Well, you can do it. Again, remember the claim, the idea is that the bacteria flagellum could not have evolved because its unique set of protein parts is irreducibly complex. The simplest thing one can say about that argument is it is wrong. It is wrong in a most spectacular way. It is actually made up of parts that are homologous to other systems that do other things than flagellum motilium. Ten of these proteins make up something called the type three secretory systems, which is a molecular syringe that nasty bacteria use to make us sick. This syringe exists in bacteria that don't have flagellum. So the notion, once again, that you have no function until all the parts are assembled is wrong.

It also turns out when you look at the other proteins in the flagella they are in other systems involving another kind of secretion called type two, signal transduction systems, ion transport systems, and axial proteins, which actually are related to other parts of the flagellum. So it turns out when you actually do the research a very careful analysis of what's actually out there supports evolution theory and not this intelligent design creation model. This is one of the ways in which the argument fell apart.

Another way in which the argument fell apart was on the point of new genetic data. Two weeks before the trial began -- if you ever doubt

the existence of God, I am going to prove to you the existence of God. Two weeks before the trial was scheduled to begin Nature published the DNA sequence of the chimpanzee genome. As soon as I saw this I got very excited. I called up the attorneys, who were getting ready for the trial, and I said, "Gentleman, we have a gift from God and we have to bring this gift from God into the courtroom."

Now, why do we want to bring it? Because the data in here was astonishing. Here's a quote from the lead author of the article. "More than a century ago Darwin and Huxley proposed that we have recent common ancestors with the great apes. Modern molecular studies have spectacularly confirmed this prediction." And indeed they have.

But the problem here -- and I realize there are a lot of lawyers in the room. The problem here is this was complicated molecular data and we had to explain this in language that it was so simple that even a lawyer could understand it. So we had to work very hard on this and I want to show you how we did this. I want to show you the slides we actually used in the courtroom.

We have known for years genetic evidence, biogeography, physiology, so forth, that we indeed share common ancestry with the great apes like gorillas or chimpanzees. But there's something weird about this. We humans have 46 chromosomes. All the other great apes have 48 chromosomes. Now, the biology students in the room know those 46 chromosomes are actually 23 pairs of chromosomes. You get 23 from mom and 23 from dad. A baby chimp gets 24 from mom and 24 from dad.

So how did we -- if we share common ancestry with these guys, how did we drop from 24 pairs down to 23? Is it possible, for example, that in the line that led to us a pair of chromosomes just got lost and our lineage got discarded, and we went on with our evolution?

The answer to that is no. Any primate geneticist will tell you it's impossible. There are so many important genes on every primate chromosome that the loss of both members of a homologous pair would be fatal. It would be fatal in us, fatal in the gorilla, fatal in the chimpanzee.

So that the only possibility is that in the line leading to us two chromosomes that are still separate in these other guys got accidentally stuck together to form a single fused chromosome. That would drop us from 24 pairs down to 23. This kind of fusion occurs all the time. It even has a name. It's called proton sodium translocation. That's the explanation.

But here's the cool part. If that's true -- this is what makes evolution a science -- it's testable. What I mean by "testable" is if that really happened, then somewhere in our genome we should find a chromosome that is literally held together by scotch tape that has two pieces of chromosome stuck together. If we don't find them, evolution is wrong at least with respect to our species and common ancestry.

And that's the test. Evolution, being scientific, always subjects itself with this sort of test. Therefore, we actually have the opportunity to see if evolution is right by looking at the human genome and seeing if we have a fused chromosome.

How would we find that? How would we recognize one? Again, biology students in the room, you can explain this to other people. The tips of chromosomes have very special DNA sequences. They are only found at the tips. They are called telomeres. In this diagram I colored them in as blue. Near the center of most chromosomes there is an equally special DNA region called the centromere. I colored that in in red.

If one of our chromosomes was formed by the fusion of two other chromosomes in the recent past you know what we should have? We should have a chromosome that has a telomere in the middle, where they don't belong, and, furthermore, a chromosome that should have two centromeres. If we don't find that, then evolution with respect to our species is wrong. If we do find it we have powerful confirmation of our common ancestry.

So do we have it? The answer is it's chromosome number two. This is the issue of a scientific article from Nature which appeared in 2005. I'll read this quickly. "Chromosome two is unique to our lineage. It emerged as a result of a head-to-head fusion of two chromosomes that are still separate in other primates."

Where is the scotch tape? The scotch tape is between DNA basis 114,455,822 and 830 -- and we know exactly where it is. The telomeres are there and we have two centromeres. The two centromeres correspond to primate chromosome 12 and primate chromosome 13. Centromere 13 has been inactivated. This makes the fused chromosome more stable and mitosis -- again, the biology students can explain exactly why that is.

But the important point here is, we've got it. It nails it. Is there any way you can explain these facts? Ladies and gentlemen, these are facts. These are hard, cold facts. Is there any way you could explain this if the human species was somehow created specially or intelligently designed? The answer is no, unless you posit the idea the designer wanted to fool us into thinking we had evolved by giving us a chromosome two that was rigged to make it look like we evolved. If you are going buy it, I have a bridge I would like to sell you in Brooklyn. Or as one of my friends put it, the same guy who made the fossil bumper sticker, do it this way. We have the genes. We win. End of story.

Now, the Dover trial itself had interesting legal aspects. I have to tell you -- because I've already made one cheap lawyer joke and I'll make another -- I didn't have much respect for the legal profession, to be perfectly honest. Part of it was because when I was in grad school I roomed with a law student. I didn't think too much of him. That colored my opinion of the entire profession.

But I have to tell you by the time the Dover trial was done, I thought that the legal profession is one of the most noble professions of all. And these three guys, all Pennsylvania people, on the screen are part of the reason why.

One of them is Vic Walcheck, who is the litigation director for the ACLU from Pennsylvania. Vic, like me, is a wise ass New Jersey guy. Big Bruce Springsteen fan. We hit it off immediately. We worked together. I love this guy. We are going to be friends for life.

The other two guys are high powered Philadelphia lawyers from a big, nasty, affluent corporate law firm who convinced their law firm to let them take this case on - Eric Rothschild and Steve Harvey -- on behalf of the Dover parents pro bono, for free. They weren't guaranteed to be paid anything for this because they thought it was the right thing to do.

Until I saw these guys at work in the trial I never understood what the skill of an attorney was. In this trial I saw skill.

I want to show you what the skill was. This is part of the cross-examination of William Buckingham, who was one of the members of the Dover Board. He was the guy who had said -- and you saw the newspaper article, that we need creationism in the book. However, as it turns out, if he had admitted that his intent was to put creationism in the schools they would have lost the case that afternoon. The reason for

that is that meets something called the lemon test in the law. If the intent of an act of government is to advance or hinder religion, it's unconstitutional on its face.

So Buckingham went into court and said under oath, I never said anything about creation. Never said it. Here's what he said. "With respect to creationism" -- this is the attorney -- "is it your testimony that creationism was never said by any Board member at any meetings; is that correct?" "That's true." "And it's your testimony that creationism was never said to any reporters after any Board meeting?" "That's true." And it is your testimony that you never talked about creationism, none of the Board members ever talked about creationism? Is that your testimony?" He then said, "Yes."

Now, the interesting thing is despite what he just said, the local newspaper had article after article saying, book was rejected because it didn't offer creationism. Buckingham said he wants a book that balances Christian view of creationism with evolution. So despite his sworn testimony that he didn't say it, the newspaper said he did.

So the attorney asked him quite logically, "If you were being misquoted, why didn't you object to that?" In other words, he basically said, Well, those are all lies. The newspaper reporters are all liberals. Everybody knows that liberals lie. Therefore, they made up these quotations. But I never actually said any of them.

But then he was asked, "Why didn't you object to being misquoted?" He said, "You know, I never read any of those newspaper accounts, so I didn't know about them." Then the attorney -- and as I say, this is a good attorney -- then the attorney reaches into his pocket and says, "I have your subscription to that newspaper right here. This was delivered to your house every morning." He then fell back a little further and said, "Well, yeah, I only read the sports section, so I never really notice that sort of stuff."

So then what happens is the attorney decides -- this is the skill of an attorney -- the attorney decides he is going to leave no doubt in the Court's mind that this is the testimony before he goes further. "So there were six articles in the local papers delivered to your door every day reporting on this meeting and you didn't read any of them?" "That's true. Didn't read any of them." "And nobody even told you that the statements were being attributed to you? No one told you that the paper said this; right?" "I don't remember anyone telling me that, no."

So he is now on record saying, Never read them. Never heard about them. Don't know anything about what was in the newspaper. We are going to need the sound up again. Then the lawyer says, "Roll the videotape." (A video was played of William Buckingham.)

So there he was saying he had never said creationism, and there he is live and on tape saying creationism. So the attorney then comes to him -- and remember the bit about the newspaper; never read them, didn't know any of that stuff -- the attorney then says, "That was you speaking, wasn't it?" He says, "Well, what happened is I was walking away from my car in the building. Here is this lady and here is the cameraman. And I had on my mind all the newspaper articles saying we were talking about and I wanted to make doubly sure of this and, pure and simple, I made a human mistake." Freudian slip; right, Mr. Buckingham? Like I said, that's a good attorney, because it's an attorney who shows the deviousness of a witness in the witness' own words. And in the space of 10 minutes he had said, I never read the newspapers, and then he said, I made the mistake because I had in my mind all these darn newspaper articles.

The Judge, in fact, in his own decision was just amazed by this. One of the things was he said he found it incredible -- these are his words -- "that people who so proudly brag about their religious convictions in public would come into my courtroom and lie under oath." I didn't realize Federal judges could call people liars, but that is indeed exactly the word that he used.

Now, one of the other things that happened in the trial is it exposed intelligent design as a religious doctrine masquerading as science. I want to show you how that was done. The Dover Board could, in fact, point to that four-paragraph statement. You can skim it if you want. There is nothing in there about God, nothing in there about Genesis, nothing about Jesus. It doesn't sound religious.

So how did we show that their intent was, in fact, religious? The answer was it was the expert witnesses for the other side. They were just put on the stand and said, Tell us all about your views. Michael Behe has said that intelligent design means not designed by the laws of nature. He also went on and said it's implausible that the designer is a natural entity. That means he must be supernatural.

Scott Minnick said for intelligent design to be considered science we've got to change the ground rules of science so that supernatural forces can be considered as part of science. Steve Fuller said the whole project of intelligent design is to change the ground rules of science to include the supernatural.

In fact, they knew they would say this, because it was in writing. And when I was on the stand the attorney asked me, "Dr. Miller, do you claim to be a Catholic?" That's the way he put it. I said, "Yeah." And then he said, "If you are a Catholic, why do you have a problem with supernatural forces?" And I said, "Catholic, heck, I am a Boston Red Socks fan. Talk about the supernatural. I can't think of any explanation for the 2004 baseball season that doesn't involve the supernatural. You'd be surprised," I said, "in my part of the country how many people think that the only reason the Red Socks came from three games down against the Yankees, which no team ever had done in the entire history of baseball, down 0 and 3 and win a seven-game series, is probably because God was just tired of George Steinbrenner and wanted to teach him a lesson. And, you know, for all I know -- I figured that might be a good line in Philadelphia area.

For all I know -- actually, it turns out often it's a good line in New York. For all I know, that's the correct explanation, but it's not scientific for the very simple reason that it's not testable. There is no natural means by which we can determine God's intent on the eve of the American League divisional series or the American League playoffs.

But the interesting thing and what was really conclusive was this book, *Of Pandas and People*. When you open the book it sounds very scientific. Here is the definition of intelligent design. "Intelligent design means various forms of life began abruptly through an intelligent agency with their distinctive features already intact; fish with fins and scales, birds with feathers, beaks, and wings," so forth. Sounds very scientific. Now, here's the interesting thing. Before the trial started the attorneys subpoenaed the publishers of that book. I thought this was a useless thing to do. They asked the publishers, "Have you ever published this book under a different name? If you have, could you get us a copy of the earlier versions; page proofs, editorial copies, stuff like that?"

Two boxes of stuff came. And the attorney called me up one day and said, "Ken, you were wrong. We got this material and here's what's

in it," and they described it to me. I had to sit down, I was just laughing so hard. All I could think of, didn't these guys learn anything from the Nixon administration? You can't leave this stuff around. You've got to burn it. You've got to get rid of it. Well, here is what they should have burned. This book had been published earlier under a different name called Biology of Origin. That's why we didn't know about it. Biology of Origin read paragraph for paragraph almost exactly the same as Of Pandas and People, except for one subtle change. Look at the subtle change.

"Creation means various forms of life began abruptly through an intelligent creator with their distinctive features already intact; fish with fins" -- it's the same paragraph. All they did was to paste the word designer over the word creator. These guys took Microsoft Word and they fired up find and replace, and they simple replaced every instance of creator with designer.

And if you think I'm kidding about this, Barbara Forrest from Southeastern Louisiana University went through all of these previous editions. She counted up the number of times the books used the word creation -- that's in red - and the number of times they used the word design. That's in blue. Earlier versions all about creation; nothing about design.

Watch this. Bang. All of a sudden in 1987, creation drops to zero and design takes its place. Clearly something remarkable happened in 1987. I'll bet you that a very large proportion of this audience knows exactly what happened in 1987. This is a time line of litigation on the teaching of evolution in the schools. 1987 was Edwards vs. Aguillard, a Supreme Court case that basically determined creationism was inherently religious and, therefore, inappropriate for the public school classroom. What did these guys do? They had a book on creationism. Creationism had just been outlawed by the Supreme Court. They got together and they thought, What are we going to call it? What are we going to call it? How about intelligent design? And that's where intelligent design came from in this book.

So anyone who tells you that intelligent design is a genuinely new idea, it is distinctive from good, old-fashioned scientific creationism, remind them of how the intelligent design textbook in Dover was produced. It was produced by taking a creation book and pasting the word designer over the word creator. And that shows the link between those.

This was especially persuasive to Judge Jones and his decision is something I point to as recommended reading for all of you. It's very easy to find that decision, incidentally. All you have to do is go into Google and type Kitzmiller vs. Dover, even just Kitzmiller, and this decision, in fact, is the very first decision that comes up. And if you're even too lazy to read it then, you can always go to Wikipedia, because the case has its own Wikipedia page.

And I have to tell you, a couple of my friends, personal friends, who knew I was involved in this actually got the decision, got the decision -- one of them is an attorney -- and read it, and called me up and said, "This is the funniest court decision I have ever read. Did all the stuff the judge talks about actually happen during the trial?" The answer is yes. And he said, "This is so theatrical. Parts of this trial should be made into a movie." Well, actually, two movies. Paramount Pictures is working on a screen play right now based on the Dover trial. Nova, the PBS science series, has already shot a two-hour special on the Dover trial with the courtroom scenes reenacted by actors. It is going to air nationally on the evening of November 13th.

So if you don't want to read the book you can wait for the movie, and it will be on TV very quickly.

Now, I think I've already gone on my 60 minutes of allotted time, so let me cut it short right now. I was trying to figure out how to end things tonight in terms of on the right note to approach my understanding of this case and how it fits with my understanding of religion. I found the best summary of this I have ever seen. It was written by Charles Krauthamer, who is the most conservative columnist writing for the Washington Post. And that's saying something, especially since George Will writes for the same paper.

Krauthamer, when the Dover trial was over but before the Judge's decision, wrote a column entitled "Phony Theory, False Conflict. Intelligent design foolishly pits evolution against faith." I love the way that Krauthamer put this. He said, "How ridiculous to make evolution the enemy of God. What could be more elegant, more simple, more brilliant, more economical, more creative, indeed more divine than a planet with millions of life forms distinct and yet interactive, all ultimately derived from accumulated variations in a single double stranded molecule pliable and fecund enough to give us mollusks and mice, Newton and Einstein, even if it also gave us the Kansas Board of Education." Thank you very much.

## Panel Discussion

Thank you very much, Dr. Miller. That was a very enlightening series of remarks. Without further ado, I will call the Chaplain up to introduce the panel members.

CHAPLAIN RADECKE: Good evening. Like millions of Christians and other adherents of monotheistic religions around the world, I profess faith in a God who is, in the language of my particular tradition, the Father Almighty, creator of heaven and earth, and I believe that creation is intelligently designed, the exception to prove the rule being the platypus and the fact that chocolate is fattening. Because that affirmation, however, is creedal and true in a way that science can neither verify nor falsify, I don't find it to be in tension with the theory of evolution.

My role tonight is two fold. One is to moderate the discussion that will follow each of our panelist's remarks -- and I dressed for that roll by wearing my blue-striped umpire's clergy shirt -- and to introduce our panelists, which is my pleasure to do now.

Roberto Refinetti is professor and academic dean of the University of South Carolina's coastal satellite campus in the town of Walterboro near Charleston, South Carolina. He is editor in chief of the "Journal of Circadian Rhythms," co-editor of the journal "Sexuality and Culture," and author of the book Circadian Physiology, currently in its second edition.

Dr. Refinetti was born and raised in Brazil, where he earned Bachelor's degrees in psychology and philosophy. He earned his Doctorate in biological psychology at the University of California, Santa Barbara and held post-doctorate research appointments at the University of Illinois and the University of Virginia before joining the faculty of the College of William and Mary in Williamsburg, Virginia and later the faculty of the University of South Carolina. He is also an adjunct faculty member at the University of Messina in Sicily, Italy.

Dr. Refinetti's early interest in philosophy has never subsided, but the bulk of his professional activities has been in physiology, particularly the study of biological rhythms in lab animals. He has produced more than 150 journal articles and several books. He is a member of the Philosophy of Science Association, as well as the Society for Neuroscience and the American Physiological Society. He was named the South Carolina Governor's Distinguished Professor in 2004 and was conferred the South Carolina Trustee Professorship in 2006.

Dr. Warren Funk is a professor of philosophy at Susquehanna University. He earned a Bachelor of Arts in philosophy at St. Olaf College, a Bachelor of Divinity from Lutheran Theological Seminary, and a Ph.D. from Columbia University. His areas of interest are teaching introduction to philosophy, philosophy of religion, aesthetics, American pragmatism, and the philosophy of Ludwig Wittgenstein.

Dr. Thomas W. Martin is an assistant professor of religion at Susquehanna University. He earned Bachelor's and Master's degrees from Oral Roberts University, and a Doctor of Philosophy at Oxford University. He teaches courses in biblical studies, specializing in the New Testament, as well as courses on religious studies and the science-religious dialogue. His course in science and religion is a Templeton

Foundation Award winner for course development in science and religion. In 1998 he received a grant from the Templeton Foundation/American Scientific Association for the development of a guest lecture series on the science/religion interface.

He is an ordained pastor of the Upper Susquehanna Synod of the Evangelical Lutheran Church of America. Before coming to Susquehanna in 2003, he served for several years in a parish setting and taught at Midland Lutheran College and the University of Nebraska at Omaha.

Finally, Dr. Matthew H. Persons is an associate professor of biology at Susquehanna. He earned a Bachelor of Arts degree from Albion College, and M.S. and Ph.D. degrees from the University of Cincinnati. He teaches introductory biology, animal behavior, comparative vertebrate anatomy, and invertebrate zoology. A behavioral ecologist, his research interests include spider and insect interactions.

Would you please welcome these panelists.

DR. REFINETTI: Dr. Miller presented an eloquent argument, to say the least. How do you support that there is a scientific basis of evolutionary theory? Judge John Jones will be speaking here next month. The issue two years ago, the judicial decision you just heard about that intelligent design theory is religion, not science, and should not be taught in biology classes in public grade school.

While I fully agree with Dr. Miller's view and Judge Jones' decision that intelligent design should not be taught in biology classes, I believe that it should be taught somewhere else in the curriculum. I will briefly explain first why I think it should be taught in grade school and college, as well. Then I'll tell you in what class I think it should be taught.

For the sake of intellectual honesty -- and I'm sure you understand after hearing Dr. Miller's talk -- I will assume that no one is really interested in intelligent design per se and that the real issue is teaching creationism. So the question is, why should creationism be taught in public schools?

And I'll start by reminding you surveys routinely show that 70 to 80 percent of Americans follow some religion. Christians in the nation who believe there is a conflict between creationism and science account for less than half of the U.S. population, but these forms of protest have a long tradition in America. One might say it was the core of the United States when it started. So I believe that ignoring them will be not only unacceptable to those who profess the religion, but is also historically misleading for everybody else, to not realize that actually that conception that to ask for creationism to be included in the classroom had a very important role in the history of the United States. That would be the reason for including it.

Students should learn that many Americans believe in creationism and those who believe in creationism, just as important, should be allowed the opportunity to discuss possible ways to reconcile that creationism with science. Leaving creationism out of the curriculum will leave ignorance where there should be knowledge and debate, so that's why I think it should be.

Now, where should it be? It cannot be biology, because creationism is not science. It's rather religious faith and a faith that is taken as a statement of fact, again, by fewer than half of all Americans.

My recommendation would be somewhere in an area generally called science inquiry as opposed to the specific contents, the science content as they call in the curriculum. This would actually stimulate critical thinking, which is something college professors nationally say

is more important than the material in high school. I base this comment on the national curriculum survey conducted by the ACT -- or the producers of the ACT test.

Just before my five minutes -- we only have five minutes for short comment here. I just wanted to make justice to my background in both science and philosophy, and make a short comment here.

As a scientist, I never doubted that science can lead us small step by small step towards greater knowledge of the world. But as a philosopher, I never doubted that the naturalist perspective, this idea that science is going to study the real world as opposed to something that might be behind the world, I never doubted that this is just one of many philosophical clusters.

If I would follow this philosophical line of my thoughts, I can think why, then, can't we think of science as a form of philosophy or both, as a form of religion? If that is the case, then it would be appropriate to give creationism as much room as science in the high school curriculum.

Dr. Miller mentioned briefly -- and we don't have time here to go in to demonstrate -- the science and religious are fundamentally different and that religion is a poor guide for the mysteries of nature, just as much as science is a very poor guide for religious faith. We cannot do that now.

But I would like to just point a little bit how dangerous it would be to treat religion as science and to see that danger, we just need to go back a few days when we celebrated, with sadness, the anniversary of 9/11 and the terrorist attack in 2001. Slightly fewer than 3,000 people died that day. We all remain in awe at the senseless loss of human life and yet we don't even think about the fact that 40,000 Americans -- not 3,000, but 40,000 -- die not once, every year in automobile accidents. Why do we ignore which by now would be a quarter of a million people who died since 2001 and we think so much about those 3,000 people?

The answer, of course, is there was premeditation in the killing of those 3,000. Nobody tried, no one wanted that half a million people -- quarter of a million people to die in car accidents. It happened. In the case of 9/11, Al-Qaeda terrorists intentionally killed 3,000 people.

So now my reasoning here is it's not hard to predict that many more than 3,000 people will die if advances in biomedical research were halted because we were not teaching our students correctly -- we are leaving evolution out of biology -- and they will become poor physicians, poor scientists and eventually, and not totally intentionally but in a way intentionally, because we are intentionally changing the curriculum, we end up causing thousands and thousands of lives. Many more people die than in 9/11 and for the same reason, religious faith.

No one is ever going to deny in that case was Muslim faith. Here creationism is Christian faith. But still it would be for the same reasons.

I think this repugnant thought of killing thousands and thousands of Americans in the name of religion can be prevented only by preserving the separation of church and state, by keeping creationism away from the biology classroom. And just to complete it here, I think there is no great coincidence that the First Amendment of the U.S. Constitution specified first that the government should not adopt a religion and only second that the government should not abridge the religious freedom. In other words, freedom of religion and, therefore,

freedom to advocate creationism is the right only after freedom from religion is assured to all citizens.

CHAPLAIN RADECKE: The next panelist from whom we will hear is Dr. Warren Funk.

DR. FUNK: I would like to make three points. Depending upon the time and your generous listening, I may only make two of those.

First let me comment in a way that I think agrees with both the burden of aspects of Dr. Miller's presentation as well as Dr. Refinetti's comments, that it seems to me that the relatively recent development of a theory or theories of what has been described to us this evening as intelligent design and its basis historically in ideas about a creationist doctrine, particularly in the United States, is not something, if we have our thinking hats on correctly, that we should see as a chapter in history and science. Rather, it's a chapter, one of the latest chapters in a very, very long book that, in fact, historically goes back not merely to the Scopes trial in 1925, but to the post Civil War era, when Americans, having gotten through the Civil War, began waking up not merely to the publications of Darwin's Origin of the Species, but to the final second shoe dropping, so to speak, for religionists, the book on the Ascent of Man that really did create a great deal of interest across the board among intellectuals and academics in the United States.

I was plead for not viewing intelligent design or creationism as a dimension of the history of science, much less anything having to do with science. Rather, it's a chapter in the long history of American religion, perhaps American culture, and maybe even American politics of the country.

Consequently, the place, it seems to me, where students of any age ought to encounter intelligent design and creationism in curricula in American schools at whatever level, directly or indirectly, if at all, is in the critical examination of pertinent topics and courses like history, perhaps American history or intellectual history, and literature, in philosophy and perhaps sociology, anthropology, psychology classes that in one way or another deal with topics about our human expression of religious elements and purposes of convictions and the critical examinations of those things as they may, in fact, be seen to manifest themselves in these phenomena.

I can imagine that instructors in these subjects might well find it useful to have on hand at some point a knowledgeable biologist in a position to make clear that, as I think Dr. Miller has done so effectively both in his book and his other writings and numerous presentations like the one here tonight, the failure of any version of intelligent design or creationism to pass muster as proposals for scientific research. That's point one.

Point two is that it seems to me that Darwinism or neo-Darwinism, which I understand has become something of a term of art preferred, is as well established in its broad outlines as any existent scientific theory. I think Dr. Miller has helped us handsomely in realizing that, certainly any theory in the so-called life sciences.

However, neither, in my view, Darwinian theory and pivotal conceptions of natural selection and common descent nor putative facts established by scientific investigation undertaken in light of Darwinian theory can in and of themselves either confirm or disconfirm the range of beliefs and practices typically associated with various forms of theism in Christianity, Judaism, Islam. At best, scientific investigation provides us with a descriptive component that sets a picture of what the natural world is like that contributes part of the

framework of what, in fact, any reasonable human being might be in a position to feel he or she can accept with an adequate consideration with various questions about what the world is that we find ourselves living in and how, in fact, we are to make our way successfully and appropriately and thoughtfully through that world.

Finally, let me make in a very abbreviated form my third point. That second point says Darwinian theory is, I think, one and only one element in the Constitution of what Canadian philosopher Charles Taylor has called the prevailing set of western modernist social imagery. That is, the background of typically unexpressed assumptions and convictions upon which in rather messy ways and often disorganized ways we rely in making sense of what we think, say, and do in the world. The complex emergence over a period of several centuries of this set of largely secular social imaginary is what can very often challenge the plausibility and efficacy of beliefs and practices associated, among other things, with religious convictions, Christianity and other religions of the West that, in fact, express themselves in theistic forms. Such, in fact, ways of describing the world can often appear to and, in some cases, perhaps may call seriously into question elements of traditions of belief and practice in both morality, secular and religiously founded, and religion.

Many of those who describe themselves as either struggling in faith, wrestling with issues of religious conviction or others who have lost faith or perhaps never bothered to think this was anything important to look for or even find may respond with either negligence, disinterest or, in some cases, as I think we see it in the intelligent design phenomenon, apprehension, fear or even aggressive and deceptive defensiveness and are responding to these exigencies culminating from 300 years of our history.

I guess I would like to hope, difficult as that may be, to plead for less volume and more serious and deliberate thoughtfulness about that larger context for our consideration. Our situation represents a complex quandary for many about how to make sense of the world out of our individual and social lives.

In response to that quandary, what we have often faced are voices that insist that answers to such questions are simple and obvious, individuals who think they know with certainty exactly what the answers are. I would include among those voices both some who perpetrate the kind of intellectual fog called intelligent design as well as those in what is only the most recent and perhaps historically most truculent round in the prominent public critics of religion who are prepared to describe those with whom they disagree or find credulous as diluted fools, purveyors of poison or historical ignoramuses.

I think a more sober and considerate reflection on these matters can be found in thinkers like Charles Taylor or, on the other side, someone who comes to some profoundly non-theistic conclusions, I would commend to you the work by Columbia University philosopher Philip Kitcher, whose recent book, titled *Living With Darwin: Evolutionary Design and the Future of Faith Through Struggle*, takes a rather different position than the one we heard eloquently expressed by Dr. Miller and by others who embrace the theistic position. Thank you.

CHAPLAIN RADECKE: Dr. Martin.

DR. MARTIN: Let me begin by saying what a hard act Professor Miller will be to follow, but I deeply appreciate what he had to say. I agree with my colleagues that the study of intelligent design and creationism has, at the very least, historic and sociological importance and fits somewhere in the curriculum in terms of trying to

understand the role of religion in American life and the role of religion and the way in which we try to think about ourselves. I strongly agree, however, that it does not belong in the science curriculum and I'm very doubtful about whether or not it's actually good theology.

My interest in this particular question is fundamentally sort of focused in asking why it would be that people might think God requires that my faith oppose evolution. Why is it such that the battle lines get drawn in a way in which, if I am to be a person of faith, the only way I can be a person of faith is if I totally and completely reject evolution?

Now, in that light Professor Miller's book, which if he won't stump I will, *Finding Darwin's God*, has a couple of points I simply want to underscore. One is the role of science in helping us learn about God. If God is the author of truth, a fundamental position of religious faith, then all truth, regardless of how it is discovered, has its origin in God and the things that we discover through scientific method that are true about the natural order are truth that God has put there and will not and cannot -- and simply I'm doing good Catholic Thomistic theology here -- ought not to conflict with religious truth.

Also, in Professor Miller's book he comes up with another point that I think is very, very essential, which is the basic idea that in theology God is noncontradictory. Jesus spoke about this by saying a house divided against itself cannot stand. And the sort of humor that we play with about God hiding all the fossils in the earth to have an excuse to send evil scientists to hell, that's a contradictory view of God. God isn't a liar. Those things are true. So we can't have this contradiction between God and the truth that we discovered in the fossil record or the truth we discovered in the terms of a very fundamental scientific way of looking at life.

There is a way in which I want to think about intelligent design and creationism, then, and, again, I'm inadvertently semi quoting Professor Miller in his book. But it's from a popular country western song. The title that he quotes exactly, but I want to play with, it's "Looking for God in all the wrong places."

I think that if we are looking for a place in which science and, at least in the science-religion debate that I'm familiar with, where we have the most fertile sort of place to look for God in interactions with science is an area that's often referred to as boundary conditions, the sorts of things that sit out there on the edge of science, the principles of the universe that come into play in causing these biochemical processes to be so fertile in the process of evolution as to come up with us.

Recent thinkers as diverse as the philosopher Anthony Flew and the physicist Paul Davies have both made public conversions, the one from atheism to something like deism and the other from agnosticism to deism, based on the idea that there is some sort of anthropic principle evidenced in the design of the universe to start the process of evolution.

I think that the opposition that many believers feel against evolution comes more in the idea that somehow evolution is a final and irrevocable proof that God doesn't exist. That is, I think, to push the scientific evidence beyond what the scientific evidence itself can produce.

Michael Stenmark from the University of Uppsala in Sweden has written quite a bit about scientism as opposed to science. Scientism

would be taking science itself as somehow carrying with it metaphysical materialism and metaphysical atheism.

An example of that might be Richard DocEss. That actually is a step beyond what the scientific data itself is capable of demonstrating.

CHAPLAIN RADECKE: Dr. Persons.

DR. PERSONS: I think I may be guilty as one of the floggers of intelligent design and I guess I can say that intelligent design may be charitably regard as philosophy or religion, but personally I would categorize it as an intellectually dishonest form of both.

The primary proponents of intelligent design at the Discovery Institute stated as much in their internal memos, so-called wedge documents that Dr. Miller mentioned. Given what we know about origins and motivations of intelligent design movement in its recent form, it is probably best classified as a political vehicle that attempts to reduce the influence of material naturalism -- that's a philosophical assumption by which science operates -- and methodological naturalism -- that's the scientific method, the process by which scientists know what they know -- on society and increase the influence of religion.

Now, intelligent design fails as science really on two critical counts. One, it isn't falsifiable. Two, it permits supernatural explanations. Both falsifiability and limiting explanations to natural cause are requirements of science. They are not just there because of arbitrary rules, but because not using these criteria fundamentally undermines the utility of science as a way of knowing.

So let's examine for a moment intelligent design and evolution with respect to these two requirements of science. Can evolution be falsified? Yes. It has to be in order to qualify as a science. Now, obviously, if it's true you failed to falsify it. As Dr. Miller showed with the chimpanzee and human examples in terms of ancestral relationships, it's an imminently testable idea.

In fact, biologists would get their maximum career benefits and fame by being able to refute such a long-standing viewpoint not to those that support it. From this standpoint biologists have much more to gain by refuting evolution with evidence than they do trying to prop up a theory that doesn't match objective reality. Of course, evolution theory does. So if you wanted to refute evolution you might show there is no genetic variation among individuals and populations. You could show there is no inheritability for the various traits that organisms have. You could show survival and reproduction rates of organisms are all the same in a population. You could show the total genetic makeup of a population of organisms does not change over multiple generations. There are many other ways that you could falsify the facts of evolution.

Now, despite the many ways in which evolution could potentially be falsified, there is no real evidence against it and tens of thousands of articles have been published supporting it.

Now, can the existence of an intelligent designer be potentially falsified with the scientific method? Asked another way, what scientific evidence would be required to demonstrate that an intelligent designer does not exist? No proponent of intelligent design has offered what would be required to refute the existence of the designer. Ultimately it's untestable.

Okay. So now let's address the second criteria for science to be science; not as assigning explanations of supernatural cause. The theory of evolution clearly doesn't invoke supernatural cause, which is perceived as a problem for quite a few theists, that very fact.

However, if we allow supernatural cause to explain the complexity of life, then by what logic can we not permit any supernatural cause? Why not claim I created all living organisms in a former life and made it appear as though it was caused by evolution? What possible evidence can you levy that my statement isn't true?

All supernatural claims, then, have equal validity since none are measured against objective criteria. None amenable to testing. This is precisely why supernatural causes are refused a priority in using science. By definition they aren't testable and alternate hypotheses are not distinguishable from one or another on an empirical ground.

Intelligent design provides no framework for asking scientific questions or seeking scientific answers. Instead, it provides a framework for terminating inquiry about the natural world by evoking a designer as a causal explanation, and then somehow assumes that that answer is sufficient; that you need to look no further. From the scientific standpoint, stating the structure of an organism was designed explains precisely nothing since it begs the question about where the designer came from. It's motivation, mechanisms in which it accomplishes its design.

It also merely sets the design question back one step by requiring an explanation of how the designer, which is presumably at least as complex as that which it designs, became so complex. With intelligent design one need only fail to come up with a plausible explanation for a biological phenomenon to invoke the designer explanation. It's a dream hypothesis for lazy and uncreative scientists. If, like the biochemist Michael Behe, you can't imagine why or how something is the way that it is, simply shrug your shoulders, wave your hands, and say, It was design. Thank you.

CHAPLAIN RADECKE: This is now the opportunity for members of the audience to pose questions to Dr. Miller or to any of our panelists. There are microphones in each of the aisles and we will be exercising a preferential option for students. So if there are students who have questions, these are the ones we would like to privilege and hear from first. Students with questions, please make your way to the microphones.

QUESTION: I am noticing that among this esteemed panel there are no lawyers or politicians. I'll just speak up. So I'm noticing among this panel you are all the very esteemed, very educated, but none of you are lawyers or political scientists. So I will let you answer my question anyway.

One of the things which sort of has interested me -- and I think the conversation has sort of gotten away from it at this point -- is that what we are talking about here, the entire reason for us being here in a court case. It's because a bunch of people got together and decided that it would be a good idea to teach essentially a religious philosophical idea, theory in a high school classroom, specifically a high school science classroom.

My question to all of you -- feel free to answer it however you want -- is why is this such a big deal? Why are we so afraid to talk about ideas of religion or creation or where we all came from in what is supposed to be a secular or, you know, a public environment?

CHAPLAIN RADECKE: Who would like to have that?

DR. MILLER: I think the short answer is we are not and we shouldn't be. We are not afraid of talking about this. And if the Board of Education in Dover had gotten their teachers together and said, Let's have a course on comparative religion. Let's talk about religious ideas. Let's talk about the scriptural basis of Islam or the way in

which Buddhism may or may not be considered a religion, or, Let's talk about the Reformation, let's talk about the forces that split Protestantism off from Catholicism, there is nothing wrong with that and there is nothing unconstitutional about it.

What was different and distinction about what happened in Dover was not the proposition, let's talk about these things. It was an attempt by a board of education to force -- that was the word -- to force the biology teachers to teach as science something that they knew was not scientific.

There is something interesting about this. When the Dover Board first instructed the biology teachers in Dover to say, We would like to you teach about intelligent design, Bertha Sparr, who is the chair of the science department in Dover, went back to the Board of Education meeting and she said, "I have two things to tell you. The first thing is my understanding is the Board wants my teachers to teach about intelligent design-creationism. Okay. I've looked into their scientific credentials. None of them are Board certified in intelligent design-creationism. So if you want my teachers to teach this you are going to have to identify a continuing education course where we can get this certification to actually do it in the classroom.

The second thing she pointed out is to become a teacher in Pennsylvania you have to adhere to something called the Pennsylvania Teacher Code of Ethics. One provision of that is a promise when the teacher says, I will never knowingly presented false information before a student. She said, "This stuff is false information. You could fire us if we did teach it." Therefore, that was part of the reason.

So I think, to be perfectly honest, the Dover decision is wrongly interpreted -- if you read the Judge's decision you will see this -- wrongly interpreted as saying, Let's not talk about this. We cannot discuss the origin of human beings. We cannot dispute Darwinism. That's not what the decision was about at all.

The decision was about an intentional attempt to take a religious idea, cloak it in non-religious language, do it, as one School Board member said openly, for Jesus, by putting it in the classroom. I think that's essentially the problem.

I would like to see discussions of all those things that your question presumed we couldn't talk about.

DR. FUNK: I would just like to briefly add to that it does seem to me that, from the standpoint of the legal issues involved -- and Dr. Miller, I dare say, is probably much better versed after his experience in that trial and his long experience of fighting other battles relating to the theory than am I am -- the Dover decision is part of a general matter having to do with U.S. Constitutional interpretation. And it goes to the issue of the so-called establishment clause in the U.S. Constitution in which we do not, in fact, teach religion. Particularly the teaching of religion is in short regard as specially or specifically providing government support, by virtue of the fact that these are public institutions, for a particular religion or religious tradition, and in this case the teaching of a specific religious doctrine.

Certainly the free discussion of these issues, if one were to give a specific example, I can't imagine anyone objecting to the insertion of a unit in a course in American history and an American history course that engaged the discussion of the impact of Darwinian theory on American culture, politics, and so on from a publication of the Origin of the Species through yesterday. I think it would be a very

interesting subject of discussion and one that could be perfectly appropriate and a rather robust and interesting unit in a course on American history.

CHAPLAIN RADECKE: I see two pastors and a professor at the microphone. We will call on them if there are no students who wish to pose a question.

QUESTION: Thank you. I first wanted to point out the obvious -- and if I am wrong, let me know -- no one here is for putting creationism or intelligent design in the science classroom; is that correct?

So, once again, one of my problems is the University's presented a lopsided propaganda to continue and perpetuate its value, whatever they may be, and limit discourse, as this decision is basically a decision of censorship. It restricts what can be said in the science classroom.

I agree. I understand Dr. Miller's statement that this was forcing this on the teachers, but what about teachers who would willingly like to share their perspective, many of which have scientific credentials?

But let me just raise the question at this point as to the validity of investigating whether something has an intelligent source or not. Is that a legitimate scientific discipline?

I claim that it is a legitimate scientific pursuit. Just taking one illustration of it, with the SETI program. The SETI program was designed to receive radio waves from outer space and we don't say that the SETI program is delving into religion by trying to sort out which signals are random signals and what can randomly be produced and what does intelligence produce.

That same analysis of things such as the DNA molecule, which many textbooks describe as a language, would lead us to some conclusions, at least conclusions that are debatable. Many of the scientists that even you cited that spoke to testify, Michael Behe received his Ph.D. at Penn, did post-doctoral work at the National Institutes of Health. Just because you say he's not scientific or you don't like his science

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DR. MILLER: Pardon me. If you are -- I never said Michael Behe was not a scientist or not scientific. So if you're going to say what I said, please be accurate.

QUESTION: Okay. You accurately said intelligent design is not science and Michael Behe says intelligent design is science. It's a disagreement between two scientists. Both should be allowed the forum of free speech to declare their viewpoints. That is what this ruling is all about, the restriction, the censorship of free speech in the science classrooms today.

But I would raise the question on the SETI program. Is that true science? Does the DNA molecule -- can it fairly be described as a language?

DR. MILLER: First of all, I don't know if Mike is here or not. I think he would be the first person to tell you that no one in the scientific community has entertained Michael's ideas more and been on the platform with him more than I have. I have debated Mike ten times, TV, radio, in person, on the internet. I am very happy to discuss these things with him. I've never run down his qualifications as a scientist. I've simply said my disagreement with Mike is I think he is profoundly wrong. He thinks I am profoundly wrong. So that's fine. That's what makes for a good discussion.

QUESTION: You admit he is a scientist; correct?

DR. MILLER: Pardon me?

QUESTION: You admit he's a scientist?

DR. MILLER: Of course. Of course. There is no question about that. He has a very good background in biochemistry. He's done a lot of important work on nucleotide biogenesis. I had the pleasure of having in my own graduate program one of his students from Lehigh, wonderful student, whom he taught as an undergrad. She thinks he was a terrific biochemistry teacher. No argument.

But here is the interesting thing about the way you put it. You said, Shouldn't Michael Behe be allowed to express these points of view? In other words, why shouldn't most people be allowed to express them? He is.

QUESTION: No, he isn't.

DR. MILLER: Excuse me. Let me make my point. He is. He is a tenured professor at Lehigh. He is a member of in good standing of the American Society of Biochemistry and Molecular Biology. Every member of that society every year -- sorry I'm so fast -- has the privilege of presenting a paper at those meetings. No one has ever prevented Dr. Behe from coming to the meetings of his own society to present his ideas on intelligent design to a scientific audience of his peers. To my knowledge he's never done it.

QUESTION: His department has restricted him now after this Dover case.

DR. MILLER: No. No. No. No. Sir, you are quite wrong. His department -- his department does not keep him from going to meetings. His department does not keep him from saying what he wants. His department does not keep him from publishing. So that's not a restriction at all.

Here's the question. The question is, is getting an idea into the science classroom a matter of free speech. Because if it is, we are going to teach flat earth. We are going to teach faith healing. We are going to teach a whole set of ideas which might have fractional support in the scientific community, but not strong support.

Let me give you the reason why I don't think these ideas have won a place in the science classroom. Here it is. The ideas of intelligent design are formulated in the language, as you've heard when I talked about them, of biochemistry and cell and molecular biology. There is a statement called a scientific statement of dissent from Darwinism that the Discover Institute circulates in which they list about seven or 800 Ph.D. level scientists that signed a statement that say they dissent from Darwinism.

Now, I ran the list of these people through the 11,700 members of the American Society for Biochemistry and Molecular Biology, 11,700 scientists. If you could convince just one percent of them, you know what? I'd say you've got a significant scientific idea. Just one percent. One percent of 11,700 would be 117.

Guess how many members of the biochemistry and molecular biology Society have signed that statement? The answer is three. And one of them is Michael Behe.

My point of view is an idea doesn't belong in the science classroom as a matter of free speech. An idea belongs in the science classroom only if can win for itself in the critical marketplace of ideas a significant following in the scientific community. And I think three out of 11,700 scientists is not a significant following.

QUESTION: Let me just raise one more point. Another dogmatic aspect of this --

CHAPLAIN RADECKE: We have several other people lined up to ask questions. We have one other panelist who would like to respond.

QUESTION: Okay. Thank you. I appreciate the opportunity.

DR. PERSONS: I just have one comment to make. That's something I already said. That is, if you are submitting intelligent design as science, it requires falsification. What scientific evidence would you accept to negate the existence of an intelligent designer?

QUESTION: I think the same process as you would use in the SETI program to determine you were determining random static rather than intelligent methods.

DR. PERSONS: So the absence of any physical evidence?

VOICE: No. Comparative analysis of the materials that would determine whether it's beyond a reasonable complexity that we can assume randomness and produce. That's what the SETI program does. It says this is space static. It will be because when the star exploded it had some way of organizing itself it would be because it's an intelligent source. If we can sort that out, that is a scientific process.

DR. PERSONS: There is a great deal of scientific fields that use what we would call specified complexity or seeking some sort of intelligent agent, but in every case they are actually looking for someone that they know to be human with the exception of SETI. So if you are looking at archeology, they are looking at prior cultures. If you are looking at forensics, they know this is a human being that presumably committed the crime. It's quite a different matter to suggest that there was an intelligent agent that created a tree.

QUESTION: I would debate that.

CHAPLAIN RADECKE: Dr. Palermo, we do have a student behind you, so if we could --

QUESTION: Several of you made a point that you would like to see or you see that evolution and intelligent design are connected. My question for you is a multifaceted on that idea.

What are we supposed to make of the Adam and Eve idea? If we started from evolutionary species, why do we need to evolve? If we are truly an intelligent design, why are we flawed?

DR. PERSONS: Can I jump in with the last one, anyway?

QUESTION: Sure.

DR. PERSONS: There is another theory called incompetent design that's been proposed. It's Donald - I believe it's Donald Weiss at the University of Massachusetts that proposed that. And he has made the argument that many of the organisms that you see and structures that you see are, in fact, quite poorly designed. Why would you put a coccyx on a human pelvis when you have to give birth through it? Why would you give an optic nerve and an eye socket to a salamander that doesn't have an eye? Why would you give a hip bone to a whale?

So the question is, if these structures had been designed, why was the engineer so poor? And those sorts of commentaries, if you will, is the danger of introducing intelligent design as a science.

DR. MARTIN: I think intelligent design is not only weak at the level of not being science -- I am going to repeat -- it's not good theology either. It suffers from the problem of what is called a God of the gaps. Wow, I can't explain what causes fire. It must be the Gods that give it to us. And then you figure out how fire works and suddenly you don't need those Gods to do anything anymore.

I think, as a believer, I want to say that God causes everything, but that's a statement of faith. It's not a scientific statement. If I'm taking a lab course and I'm doing -- I'm filling out my lab report

and I write down, Well, God did it, I think I'm likely to get an F for that particular assignment because, while that might be perfectly good theology, as a believer, to say God made that happen, how? God created life how?

Go to the Grand Canyon and look at the strata. Look at the fossils. Look at the biochemical processes of evolution. God did it. This is the way.

CHAPLAIN RADECKE: Dr. Palermo.

QUESTION: I attended a lecture on intelligent design over at Penn State a few years ago. I will say that I have less of a problem with creationism than intelligent design because creationism to me is more honest in that it poses as what it is rather than trying to pose itself as science.

And the reason I'm asking this question is because of what I see as deception at the heart of intelligent design, because the whole lecture was talking about genetics and blue eyes and brown eyes, and stuff like that, that I could follow, never having had genetics. I could see problems with the reasoning even though I never had genetics.

So I wondered if -- and it kind of bothered me to have that kind of science being presented in a university setting, because it seemed to be religion posing as science. So I wondered how you would handle it here at this University if an organization came and wanted to present at this University. It's kind of a public-private university. I don't know if that makes any difference.

But at that level is it purely a matter of free speech? There was no time for questions at the end of the presentation, so there was no dialogue. It was purely one way. And -- but I just wondered how you would -- if you were the ones to make the decision whether a group could make that type of presentation, how you would handle it. And because you don't have -- as somebody else pointed out, you don't have someone representing that perspective in this forum. How do you explain it? I just wondered if you could explain how you would handle a situation like that.

CHAPLAIN RADECKE: The question gets at the matter of some group office, department on the University or organization in the University inviting in a group that would do such a presentation?

QUESTION: I don't know if they were invited or whether they requested to come.

CHAPLAIN RADECKE: But being on campus in order to give a presentation. The second part of that is it was monological and not an opportunity for inquiry.

QUESTION: Yes. This is, of course, assuming what I said at the beginning, that if it had been creationism I myself would have objected less, because, to me, the problem I have with intelligent design -- main problem is that it seems to be acting like something -- it claims to be science when it's not using scientific methods.

DR. MARTIN: About five years ago I attended an Advanced Templeton seminar on intelligent design. Both Behe and Dembski were primary presenters and got royally grilled over the four days that this went on.

And so, first of all, if somebody is presenting ID as a scientific theory or creationism as a scientific theory, it has to be debated by the criteria of science.

In this particular instance nobody was really on so -- the people who were opposed to the idea of intelligent design were not challenging it on the basis of its philosophical concepts. They were just simply saying, How are you going to test it? And Dembski himself and Behe were

both saying, Well, yeah. That's the next step. We have to come up with some kind of research program by which this could actually be shown to take place.

In the literature that I follow they still, now five or six years later, have still failed to come up with a research program. So that, again, the ideas have to be debated on the playing field and the playing field is the accepted cannons of science.

I don't know if that really gets to your point, but I think President Lemons should probably think about that.

DR. REFINETTI: Just recently last week the President of Iran spoke at Columbia University. They asked the dean there, How can you let this guy speak at the University? He said, "Well, we have a rule. If an official student group or a department of University invites, he comes. That's what an open university is."

Of course, they come in and there is going to be arguing. Some would be in favor. Some would be against. We don't have a problem. We want to hear. We are open for debate.

The issue is in teaching. It's very different, judging whether a person is qualified to teach because of scientific decision. In this case you are bringing in for debate; right? So, again, you should definitely ask your President, but I don't see why not.

DR. MILLER: So I'll chime in to advise Susquehanna University, too. And that is, at my school we periodically have arguments, debates about who should be allowed on campus and how dare this speaker come, so forth and so on. And universities should be open places. Not open places where any group can come and carpet bag and have a forum, but where everyone wants to invite and have a speaker, that speaker should be allowed. And I mean anyone.

A student once asked me in a campus dialogue on this, "Would you allow a Nazi to speak on campus?" My answer was the most memorable talk I heard during my four years as an undergraduate -- and I was lucky enough to hear Martin Luther King speak and a whole host of other people, Kurt Vonnegut, and so forth. It was a talk that given by George Lincoln Rockwell. The younger people in the audience may not know who that is, but in the sixties he was a very influential leader of the American Nazi party. And he came and it was picketed, just like the Ahmadinejad speech at Columbia.

Let me tell you, it was the best talk I ever heard. And the reason it was the best talk I ever heard was because he was funny, he was glib, he was charismatic, he was persuasive. All of a sudden I realized how dangerous this idea really was. I never would have appreciated that if I had never had the opportunity to actually hear him speak.

I think the people in Columbia knew would have realized how out of touch Ahmadinejad was with reality until he was asked that question about, "How about homosexuals in Iran," and he says, "We don't have any of those." It's like, yeah, right.

And I think sometimes having a controversial speaker come and reveal themselves in the same way that this speaker does is the best way to counteract them. Then you can actually see what's going on.

DR. PERSONS: I just wanted to add, I guess my difficulty is when some of the proponents of more creation science rather than intelligent design use university forums that are open and they buy time outside of class rather than being invited. They use that as a set of credentials that they've been to all these universities. They've been to all these locations, which is a bit dishonest. People like Ken Ham, for example,

who even has questionable academic credentials. There is that level of deception.

But I'm certainly in favor of open forums as long as there's avenues for discussion, that it is not -- the presentation is not cut off, it's finely crafted for a particular purpose. I think that should be open.

CHAPLAIN RADECKE: I've heard some say that the response to a bad idea is not to cut off a bad idea, but better ideas. And that only happens when we are not afraid of entertaining the bad idea.

QUESTION: Can I just -- excuse me. I went back and forth on this. I was bothered by the credentials. But in the end I am very reassured by your responses, because I totally agree that a forum needs to exist where ideas are considered and that we shouldn't be the ones to decide which ideas can be considered. Thanks.

QUESTION: Two corrections to the panel. Professor Persons, the originator of the incompetent designer was the comedian George Carlin 30 years ago, when he asked, "If God is so smart, why does everything he make die?" Now, I'm not supposed to laugh at that because I am a theist. I'm a pastor.

I would like to pose a question of clarification to Professor Refinetti. You mentioned something in kind of passing. I hope this isn't tangential, but I think it is, to the question of the societal realm. You mentioned the place for intelligent design is in the history of the United States, especially because of, number one, the strong number of people who subscribe to theistic ideas. And I think you mentioned that the churches behind this movement are mostly made up of churches that have been with us since the founding of our nation.

I would like to raise that -- and maybe, perhaps Professor Martin and our Chaplain, who are better church theologians and church historians than I can address this -- because I think there has been a perception by the loudest in society who have been a modern movement, the modern American fundamentalist movement. By the way, show me an intelligent designer that's not an evangelical. I mean, I have yet to hear of an atheistic intelligent designer.

What troubles me is the speaking for all Christianity that this relatively new movement in the history of the church has come to embrace and speak for main line Protestants, Catholics. I don't know how Copernicus got off the hook. But the churches that were here as the foundation of this nation were European influenced, western Europe theologies which are compatible with science and also not so hostile.

This is -- what mentioned by Professor Funk, a post Civil War reactionary fundamentalist movement which may have grown recently, especially in the last 20 years, but does not represent the majority of American Christianity, though it screams loud enough that many assume it does.

I know that wasn't a question, but is that an aspect of this law and society historical moment that anybody would like to address?

DR. REFINETTI: Well, I just want to say I stand corrected. I didn't really mean to specify the denomination. It was a general comment. It might be that there are even fewer than we think who are strongly for creationism. That I assume you know better than I do.

DR. FUNK: I wouldn't want to present myself as an historical expert on these matters, but I can respond at least, I think, to a couple points. Certainly in some of its 19th century manifestations, not with specific respect to the 20th and 21st century forms of creationism and intelligent design, the negative reaction to Darwinism was actually quite mixed for much of the 19th century. There was point post

publication of the publication *The Origin of Species* where the president of Yale was negative on it and the president of Princeton was positive. Neither of those folks, both clergymen, were exactly out of the main stream of American Protestantism. That was often true of 19th century reactors at least in public forums.

The emergence, as I understand it, the connection between opposition to Darwinian thought as it might be grounded in matters of commitment to Biblical literalism and an errancy on the one hand as a part of a general view that came to be described as fundamentalism was also very much wrapped up in reactions to what were construed as liberalism both with respect to Biblical interpretation, on the one hand, and broad liberal policies with respect to the application of what was thought to be Biblical ethics and social affairs in the United States.

So one of the earliest, most outspoken opponents of the fundamentalism and to anti-Darwinian thought was Harry Emerson Fosdick, who was kind of the grand preacher of New York's Riverside Church. His main concern about fundamentalist opposition was not the desire to preserve science, but the opposition of fundamentalism essential to creative social reform.

So it's a little bit off topic, but maybe there are others who can --

CHAPLAIN RADECKE: Next.

QUESTION: My main question is throwing it back the other way. If religion shouldn't be taught so much in a science classroom, should, then, science be taught in certain religious aspects, say, like certain doctrines like altruism and animal behavior?

DR. MARTIN: Amen. Preach it, brother. I shouldn't be flippant about that. Yes, I am going to go back to the idea that if there is truth, all truth comes from God by any reasonable definition of God, that religious believers would hold to. And the meaning of that, which has been recognized since St. Augustan, fifth century - late fourth, early fifth century, is that you adjust religious doctrine according to what is known to be true about the physical universe. And Augustan got down on Christians in the fourth and fifth century who were making fools of themselves for spouting doctrines about creation that any intelligent person knew couldn't possibly be true. So yes. It should work in the direction of science influencing what we think about our religious faith, as well.

DR. PERSONS: Can I comment, also? I am a behavioral ecologist, so I study adaptive functions of behavior. A lot of areas of research that are the hottest right now are things like what is the adaptive significance of religious thinking and religious behavior? What is the adaptive value of morality? What is the evolutionary origin?

Much of that is routed in altruism, as you suggested, particularly in social animals. So you see all sorts of evidence of proto-morality and you also see some - I don't have time to go into all the hypotheses about what the function of religion is from an adaptationist's viewpoint other than to say it's an adaptation to increase cooperation among group members at the expense of outside members, so one religious group pitted against another, which is a very popular idea from some sort of social harmony standpoint.

But there are some people who are very uncomfortable with Darwinian thinking extending into ideas about religion. And beyond that, also, religion has also been examined from the evolution history of it, building evolutionary trees or phylogenies and how one religion branches off from another, speciates, if you will.

So there is all sorts of interesting research in that area.  
QUESTION: Hello. My question, I guess, relates really well to the last question. I asked -- a number of friends and family members who have issues dealing with this conflict, inner conflict. Since this whole lectures - not what it's been about, but has certain tones, it's not necessarily true that there is evolution and that mean that there is not a Judeo-Christian God in the sense that religion sees it. How do some of those of you who are theists or, more specifically, Christians deal with the contradictions of evidence just on an spiritual sense? How do you reconcile the differences between understanding of -- accepting evolution, but also you have the classic Bible stories and things that might be contradictory?

Also, Dr. Miller, what is your favorite Bruce Springsteen album?

DR. MILLER: I didn't hear that.

QUESTION: It's not important. I was just joking around.

DR. MILLER: Well, I think the question you asked -- the acoustics up here are a little weird, because -- well, never mind.

I think the question you asked was how do you deal with the contradiction of Bible stories, so forth. And one of the things you should appreciate is that people within religious life have been dealing with scientific contradictions to what you might call Bible stories way before Charles Darwin.

Give you an example. John Calvin, who wrote before Darwin was born, wrote a long commentary on Genesis. At the time a lot of people were really concerned about whether or not Genesis would really be true; not because of any evolutionary contradiction, but because of an astronomical contradiction. The Genesis is, of course, God created two lights, a greater light to rule the day and a lesser light to rule the night. Pretty straight forward. It's the sun and the moon. Everybody knew that. The problem was astronomy in the 16, 1700s had developed to the point where it became apparent the moon was not self-luminant. It's a reflection. So does that contradict Genesis, because it does say a lesser light? If the moon has no light of its own, does that mean Genesis is wrong?

Then it got even worse, because as astronomy was developed it was possible to detect moons around Saturn and Jupiter. It was also possible by geometrical means to measure diameters of those moons. They were much larger than the earth's moon. So if you had only the sun and moon worthy of mention by the author of Genesis, how do you overlook the fact there are bigger moons than our moon in our own solar system?

What Calvin's explanation was, first of all, remember what the purpose of Genesis was. The purpose of Genesis was to -- and, again, this is pre Darwin -- was to communicate eternal truths about the nature of God and man, and the relationship of creator to creation; not to present a scientific history. Calvin went on and he basically said Genesis would not have had its intended effect -- in other words, it wouldn't have worked if it had assumed -- I think this is the way Calvin put it -- had assumed facts not generally known.

In other words, if the author of Genesis had been divinely inspired to know everything we would subsequently find out about science and he had put that into the account, it would have fallen on deaf ears. You can imagine Moses coming been down from Sinai and talking about RNA and DNA and Allopatric speciation. That's not going to work. So, therefore, as Calvin realized, this was in the language of the day.

I think when we think about contradictions to Bible stories we tend to forget scripture was written in a pre-scientific age. That doesn't make it wrong. It means it communicates in a different way.

I'm sorry to go on so long, but my favorite example of this to people who are concerned about the Bible being scientifically true is not to Genesis, but to point to the book of Job, which is a book of the Bible I've read many times. It's just wonderful. Even if you are not a believer, it's a great meditation on the nature of evil.

There is a certain point in the book of Job where God loses it with Job. He just gets really mad at him. And he yells down to Job, Where were you when I laid the foundations of earth? Where you when I flung the stars into the heaven? Then he goes on, Have you seen the cisterns in which I gather the raindrops? Have you seen the store houses from which I scattered down hail and snow? Now, if you think the Bible has to be scientifically true, cisterns full of rain, storehouses full of snow, you've got a problem with meteorology if you think Job has to be literally true.

I think any Bible scholar -- and this would be true in the pre-Darwinian age; I'm sure this would be true for John Calvin -- would have said, Wait a minute. This is a metaphorical discussion and what God is telling man basically is, You don't understand me. I am working with such higher purpose don't pretend that you know everything about this universe or everything I have in mind for you, and does so in a metaphorical way.

I think a lot of the so-called contradictions in the Bible stem from our modern failure to insist on scientific literalism rather than understanding the truth in the metaphors of scripture.

CHAPLAIN RADECKE: The irony there is that that manifestation of religion grants too much; not too little to science as the only way of instructing truth, in my estimation.

DR. PERSONS: Obviously the human experience is much more than scientific explanation and natural causes of who we are. That extends well beyond religion. How do you evaluate poetry or a great painting or good literature? How do you impart meaning to your life? How do you give it purpose? Good luck trying to formulate a hypothesis to test on that, yet it's important.

So I think you need to think about that in terms of reconciling not just religion, but other aspects of what it means to be human.

QUESTION: I have genuinely appreciated this whole evening. I hope I speak for others in that regard. My question is one that goes beyond just the scope of this evening. A recent film called Jesus Camp showed young evangelical Christians being home schooled. It included the statistic that 75 percent of the children in this country who are home schooled are home schooled in families that call themselves evangelical and fundamentalistic. A current best seller is called God's Harvard, which profiles a small Christian college that is very forthcoming in its mission to educate young people similar to what we do here at Susquehanna, to promote God's agenda for the United States.

The president imposes a moral overlay on issues as varied as Terry Schiavo and stem cell research. And with the exception of the occasional forum like this, why is the church so profoundly silent on these issues? Where is the voice of the pluralism that has made this country what it is when it comes to addressing issues that are slanted, untrue, and based on lies that are told in Federal court? I will let you all wrestle with that.

DR. MILLER: Well, I will give a quick answer. That is not only silent. When Arkansas passed a creation science law in 1980, it was

immediately challenged in a lawsuit. The lawsuit is known as McLean vs. Board of Education. The Reverend Bill McLean was a Methodist minister. He was the person who initiated the lawsuit and the challenge.

So I think there actually are many people of faith, many religious traditions that have recognized dangerous trends in our society. I have to tell you, I don't think people home schooling their kids is a dangerous trend. There might be people who, if I had chosen to home school my daughters, would say they wouldn't like what I was teaching them. But I would say I am their parent. I have the right to govern their education. I think fundamentalist Christians have exactly the same right.

What I worry about is not people exercising their rights. What I worry about is a climate that I see developing in this country in which large groups of Americans, through one mechanism or another, through the public schools, through public discourse, sometimes through home schooling, may succeed in raising up a generation that is profoundly mistrustful of science. I don't mean they are not willing to take everything a scientist tells them as truth. God knows no one should be willing to do that. But, rather, they are hostile to science as a very enterprise.

And if we convince large numbers of young people in the United States that to enter the scientific profession you have to turn your back on your faith, you have to reject your values in a country where 90 percent of the people believe in God, that's going to a prescription for scientific suicide.

We live in a world where eager developing countries appreciate the value of science. We have countries like India and China. They have no qualms about teaching their kids evolutionary biology and charging ahead, because they recognize that science is the wave of the future. My deepest concern is we do not, as a country we are going to be in bad shape.

I have always been heartened by the number of religious people and churches who have been willing, in fact, to speak out on this tissue. And one of the things I would point out, one of the expert witnesses on our side in the Dover trial was a professor of theology at a major university. So I think it's important to understand there are such people. Probably not enough, but I think there have been some voices.

MR. SOBEL: First of all, I want to thank everybody that presented tonight. It was a tremendous program. I would like you all to join me in thanking our presenters.

Secondly, I want to mention to you we have two upcoming programs, one on Saturday October 6th that deals with the state of the Susquehanna River. You might also make a note of October 25th, because that evening at 7:00 o'clock, on a Thursday, we will have a second program relating to the Dover case that will look at the judicial independence and accountability issues that a judge faces when deciding a controversial case like Dover. Among the parties participating will be Judge John Jones, III, who decided the Dover case. Lastly, I offer you to join us for a reception out in the hall, and have some nourishment and have a chance to meet some of our speakers. I look forward to seeing you out in the hall.

(Whereupon, the presentation concluded at 9:40 p.m.)