

Volume VI, Issue I Fall 2006

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# Dr. Newberg to Lecture October 5th: "Why We Believe What We Believe"



Dr. Andrew Newberg will launch the Canyon Institute for Advanced Studies 2006-2007 Public Lecture Series on Thursday, October 5, 2006. The title of his talk is "Why We Believe What We Believe." Debra Fisher, Managing Editor of the Canyon Institute for Advanced Studies newsletter, recently spoke with Newberg to learn more about his research and its implications for humanity.

In addition to being an Associate Professor in Radiology and Psychiatry, Dr. Newberg is also an adjunct professor in the Department of Religious Studies at the University of Pennsylvania. Dr.

Newberg has been involved in the study of mystical and religious experiences as well as the more general mind/body relationship in both the clinical and research aspects of his career. He is the Director of the University of Pennsylvania Center for Spirituality and the Mind and has published extensively on brain function, brain imaging and the study of religious and spiritual experiences.

**Canyon Institute for Advanced Studies:** *Tell me about the emerging field of neurotheology.* 

**Andrew Newberg**: I define the term "neurotheology" very broadly. For me, there are two parts. First there is the "neuro" part, which should be expansive in the sense that it includes the study of the human brain, the study of human psychology, and how the brain and body interact through various functions and processes. I also believe in a very integrated approach to thinking about the brain; it needs to be integrated into the rest of our physiology, our entire body. Integration is also a factor in terms of how our brain interacts with our environment, including our social interactions. I prefer to expand the concept of "neuro" to a very large area that includes not only the brain, although that is one of the primary areas of focus, but all these other aspects and how they relate to the brain and the brain's function. On the theology side, I also use a broad definition. We can discuss specific theological concepts and principles, but we can also talk about religion in a more general sense. We can talk about various aspects of religious experiences, such as meditation and prayer, as well as the differences between religion and spirituality. By thinking of neurotheology in this broader sense, we have an opportunity to examine a wide array of issues and the many interactions and complexities that arise from within these issues.

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## From the Director's Desk



Before beginning this column, I perused the topics and biographical sketches of the speakers for the 2006-2007 Canyon Institute for Advanced Studies (CIAS) Public Lecture Series featured in the information brochure. This close reading was aimed at discerning if a connection existed between the topics of each of the distinguished scholars: Dr. Andrew Newberg, Dr. Lanny Schmidt, Dr. William Hurlbut, and Dr. Denis

Lamoureux. I anticipated finding a link between their areas of research since each scholar's work represents a distinct scientific perspective, and theology is a core consideration in how they approach that work. What I didn't expect was that my mind would be drawn into the recesses of the brochure's frontpanel photo. Over and over again, I kept flipping back to the photo of the cloisters at the University of Glasgow in Scotland.

The cloisters' fluted columns and transverse ribbed vault are characteristic of the neo-gothic architecture of European university campuses. The design of the space is certainly appealing to the eye, but it was not just the splendor of aesthetics that kept drawing me back to the photo. It wasn't the form alone that held my attention; I was thinking about the cloisters' functionality.

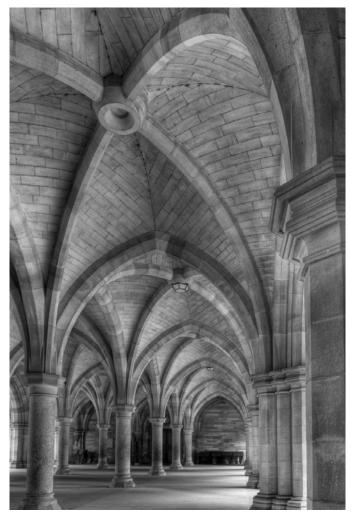
Historically, cloisters have been designed to function as the covered walkways running alongside the inner facade of buildings that form a quadrangle—an open garden-like courtyard—typically found in European monasteries, cathedrals, and, later, universities. Oftentimes, cloisters have a colonnade on one of the four sides of the courtyard wherein a series of majestic columns are placed at intervals, creating a patterned place for passage, gathering, studying, or quiet reflection. This particular photo appears to be of the colonnade-side of the University of Glasgow's cloisters.

Canyon Institute for Advanced Studies is like this colonnadeside of the cloisters. We represent an unbounded appendage that connects other academic and religious structures. We are connected to higher education institutions worldwide through the lives of their scholars who walk in the covered in-between spaces of our interdisciplinary center. There are no entrance or exit signs; there are no "slow-traffic-move-to-the-right" or "pass-only-on-the-left" signs posted on the majestic columns of scholarship. There are no walls to hold back the elements that both draw and repel. Yet, under our covered walkway, scholars and students, people of faith, and people of no faith gather, study, and reflect for a time before passing through to the next place. When they depart, they take with them expanded vocabularies, new thoughts, and remembrances of the connections made in the patterned shadows of the interspersed columns. Canyon Institute functions like the cloisters at the University of Glasgow, and our subtle grandeur is expressed through the soaring imaginations and worthy deeds of those who pass through on their way to somewhere else.

I look forward to gathering with you in the coming months as we learn from and with our visiting scholars, who are also connected to one another through the presentation of their work to us. Dr. Andrew Newberg will start us off this year by introducing a new domain of research—neurotheology. Please join me in welcoming Dr. Newberg on Thursday, October 5th as he lectures from his recently released book *Why We Believe What We Believe: Uncovering Our Biological Need for Meaning, Spirituality, and Truth* (2006, Free Press). Dr. Lanny Schmidt will follow on October 19th with his lecture titled "Faith and Science and the Book of Job."

BILL K. WILL.
Bill R. Williams

Bill R. Williams Director



The Cloisters at the University of Glasgow, Scotland

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### Dr. Andrew Newberg: Why We Believe What We Believe

CIAS: You stated in a previous published interview that your research has generally been received fairly well. However, you described your sensitivities to two extreme groups—those who want to get rid of the notion of God and religion altogether and those who hold fundamental religious beliefs and really don't want to have anyone approach religion and spirituality from a scientific perspective. How would you respond to the following question posed by a representative of each group: What does your research offer that is of value to me?

AN: To the person who wants to get rid of the notion of God and religion, on one hand, I would encourage him to set aside his own individual beliefs in order to consider the broader societal issues. The reason for studying these issues is that religion and spirituality are highly prevalent throughout society, throughout history, and are still a major factor in how the human world works. Given this prevalence, it becomes very important for all of us to understand how the human mind and brain are associated with various spiritual and religious experiences and formal belief systems. It is helpful to have a better understanding of what religion and spirituality is all about so that we can look for ways in which to effectively deal with the negative consequences of religion. Also, to the extent that religion has a positive effect on society, we ought to examine how best to enhance the positive influences in such a way as to bring about greater value to society as a whole, even though such efforts may not have anything specifically to do with the individual person who may be an atheist.

On the other hand, I still think the fundamental questions that we all face are related to an overall understanding of our lives and deriving meaning from our lives. These are basic, critical questions about what it means to be human that both spiritual and non-spiritual people must answer. This area of research sheds light on all the belief systems that we hold whether or not they are religious per se; some of the more recent research that I will be discussing during my October 5th lecture deals with aspects of social beliefs, religious beliefs, political beliefs, and moral beliefs. Therefore, this area of research even holds value for the person interested in getting rid of the concept of God. There are many other aspects of beliefs and how the brain works that can enhance a person's understanding of his own beliefs and the biases he holds.

To the person who holds fundamental beliefs and is opposed to the interaction of science and faith, I would address the same issues of greater societal good and the personal benefits of examining how the human brain works so each person can develop a better understanding of her own beliefs and personal biases. Additionally, I would address this person's underlying concerns based on fears that the aim of this research is to get rid of relig-

ion. My perspective is that this should not be the aim of the neuro-physiological study of religious and spiritual experiences and beliefs. Research should be focused on the extent to which this area of study might help people better understand how being spiritual and religious affects them on a personal level. This understanding might be additional information that would be important to a person's overall understanding of who she is and why religion and spirituality is important to her. This area of research should not be aimed at proving that a general religion or specific belief is right or wrong; the focus is on helping us understand where human beliefs come from and how we can direct our beliefs in the most productive ways.

**CIAS:** What major advances have occurred in your research in recent years?

AN: There are a couple of areas that come to mind. First, we have continued to develop our model, and as we do additional studies of people engaging in different types of religious or spiritual practices, we are learning about the complexities of all these different kinds of practice. We are learning that there are specific features of the individual practices and there are global features as well. Findings related to these distinct and global features are very important. There is growing interest and supporting evidence that suggests we are beginning to understand not just general areas of the brain's activity, but that we can actually look at specific neurotransmitters or chemicals in the brain and how they are affected by various religious and spiritual practices.

Second, the newest area I am exploring related to beliefs is an area that has never been explored in great detail from a neuro-physiological perspective. We generally accept that we all have beliefs, but we have never really understood what beliefs are, how they come about, or how specific experiences and practices may affect a person's belief systems after the fact. These are the questions on which we are presently focused. Beyond the varying experiences and practices people may have, we want to understand how those experiences and practices ultimately affect their overall beliefs, not just their religious and spiritual beliefs. We are concerned with all of the beliefs that are related to their overall living. For example, we want to investigate how a person's thinking about social interactions, about morals, and about politics may be intimately interwoven with his beliefs associated with religious or spiritual perspectives.

**CIAS:** Does this area of investigation extend into the area of aesthetics—why we think one thing is beautiful and another thing is not?

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## Dr. Andrew Newberg: Why We Believe What We Believe

AN: Absolutely! Later in October I will be giving a talk at a conference about sacred architecture and we will be talking about just that—how visual objects and architecture and various visual stimuli affect the human person. What makes us feel that certain thing's are, as you said, "beautiful" versus other things that are not visually pleasing? The wholeness and integratedness becomes an important part of such aesthetic judgments. But another important aspect is the color and various lines and shapes that affect the brain in one way versus another. I have actually argued for an aesthetic-religious continuum, which includes a sense of wholeness as one of the most important elements.

CIAS: Whereas many scholars would agree that biology has been the frontier of human discovery in the 20th century, some are arguing that the area of brain-based research will be the frontier for the 21st century. Do you agree with this projection, and is there evidence that supports this statement?

AN: Well, certainly we are getting better and better at developing the techniques to study the human brain, and I would agree that it is, in a way, our next important frontier of science. After all, it is our brain that really helps us determine all the beliefs that we hold and how we actually understand reality. It is our brain that we take with us everywhere to analyze the world, evaluate what is going on around and within us, and direct our behaviors. So the brain is, in many ways, the most critical and important part of ourselves that we need to understand. And of course the brain really is at the heart of the problems we all face as humans—problems in terms of terrorism, in terms of violence and antagonism, in terms of psychological abuse, and even in terms of criminality. It ultimately comes down to the human brain. On an every day level, all of us need to think about what our brains are doing and how we can help to enhance the brain's function through different practices and approaches to supporting ourselves and positive behaviors. We need to think about how the things we eat, the things we do, our sleep patterns, and other activities relate to the brain's function for the purpose of understanding when brain functions go in directions that have destructive ends and how we might be able to resolve such problems in a positive way.

CIAS: Given your present knowledge in the field of neurotheology, might it be possible to envision a future when regions of the brain where "spiritual activity" occurs can be chemically altered to trigger a spiritual experience in a person? Might the same advancements allow for the suppression of spiritual experiences?

**AN:** This is a very interesting and important question. I guess I look at this whole field as a very huge puzzle with lots of pieces to it. On one hand, for thousands of years people have been utilizing various pharmacological

agents to help induce spiritual states. We see this in shamanic cultures throughout the world. An important aspect of these practices is that they are not viewed as artificial; rather they are viewed as windows and doors into the spiritual realm. But clearly the artificial possibilities exist: people do utilize those kinds of substances to help get themselves into various spiritual experiences and states.

We also know that various drugs will help to suppress spiritual states. We know that some of the drugs prescribed to suppress overall brain activity will also suppress, or have the potential to suppress, various elements of religious or spiritual experience. This is a very important area of study. We have to be very careful about advocating for the wide use of these kinds of substances because we do not know all the different ramifications of how they work or the potential negative side of them, which includes their uncontrollability and the possibility of addiction. But this still could be a valuable area to research because we know where the drugs go in terms of neurotransmitters, in terms of parts of the brain, and that can help us better understand various aspects of religious and spiritual experiences. Could we someday find better ways of helping people get into spiritual states? I certainly would not rule out that possibility, but we have to move forward very cautiously.

**CIAS:** And then there is a dark side of this issue. In the wrong hands, this knowledge could be used as a tool to eradicate a particular religious perspective.

AN: Absolutely there is this danger. My colleagues and I have always talked about the negative side of not just pharmacological approaches but ritual as well. Rituals can be extremely wonderful, powerful, and positive. But they can also be extremely negative, leading to violence, aggression and exclusivity. So we need to understand what the differences are between rituals that are compassionate and inclusive and those that are antagonistic, violent, and exclusive. We just simply do not know the answer to that question yet. But we do know that one thing rituals do is help us to focus our minds and to focus our attention on a specific belief system or doctrine. We know that the more we perform rituals, the more our attention is brought to them and the various aspects of them, the more these rituals become our reality.

For example, if a particular ritual that we focus on is positive and compassionate, then the more compassionate we become, viewing all human beings as being one family and so forth. On the other hand, the more we focus on violence, hatred, and the view that other people are out to get us, the more that becomes our reality. So our reality is often defined by how our brain and our mind are brought to focus on specific beliefs. And again, that reality can be either positive or negative.

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**CIAS:** This seems to be an ethical area requiring interdisciplinary dialogue. Who should be at the table of discussion?

AN: We have recently launched a Center for Spirituality and the Mind at the University of Pennsylvania. Through the center, we have brought together faculty members from almost all the different schools at the university, including medical, nursing, social work, law, psychology, cognitive science, philosophy, and religious studies. We don't have a theology department per se, but obviously theology and pastoral care are important areas to include in this discussion. These ethical issues are so broad and so multidisciplinary in nature that I see overlap into virtually every field of study from which there could be some relevance to our understanding of these topics.

**CIAS:** Do you imagine an optimistic future for humanity in the area of brain-based research?

AN: I am certainly an optimistic person by nature. I look at this whole field of study optimistically. Part of the answer to this question is that we are at a stage of infancy with being able to understand the human mind and all its diversity and richness. As such, I think we have so many wonderful opportunities to study what it means to be a human person by looking at the human mind and brain and seeing how they relate to many aspects of who we are—socially, cognitively, emotionally, spiritually, and so forth. It is certainly my thought and hope that by deepening our understanding, we will find a way of developing a greater sense of compassion and perhaps universality in the belief systems that we hold. I'm not referring here to universality to the extent that we all have to have the same belief system, rather I am talking about developing an understanding about the limitations—how each of our belief systems and the brain itself, in many ways, restrain our ability to understand our world. We need to look at the world from lots of different perspectives and be open to lots of different ideas and turn to our collogues and friends from all different walks of life and different academic and personal approaches in order to really do the best we can to understand what it means to be human and how we can be the best believers and the best human beings we can, all the while striving to understand the best paths that we can each individually take to optimize and maximize who we are. That is certainly where I would love to see this research go. I would also like to point out the potential trappings and downfalls that we might fall into along the way, whether intentionally or unintentionally, because we follow paths that lead toward negative emotions, negative attitudes or destructive behaviors. Hopefully, we will find ways of helping people avoid such negative trappings by bringing their focus and attention to the more positive and optimistic side. With the future ahead of us and with the many technologies developing at a quick pace, I am hopeful that we will get closer to really understanding what we are as human beings and the meaning of our lives. In many ways, we have outgrown a lot of our belief systems, and hopefully

we will find better ways and more sophisticated ways of addressing the fundamental questions that we all have.

CIAS: You just had a new book published that shares the title of this lecture, Why We believe What We Believe: Uncovering Our Biological Need for Meaning, Spirituality, and Truth. Realizing that you will be unable to cover all the material in the book during a one-hour lecture period, what aspect of the text will you focus on during your upcoming lecture on October 5th?

AN: While there are several very important points that surfaced in our research that are covered in the book, one of the most important ones is the notion that the beliefs we hold are developed in our brain through a number of different factors: environmental influences, which include how we perceive the world and how the world comes to us through our senses; social interactions that begin in infancy with our parents and expand to include our friends, peers and colleagues as we grow; cognitive abilities, specifically how the brain can think about various ideas and attempt to understand the world in certain ways; and our emotions—both positive and negative—that help shape the belief systems that we hold. Our beliefs arise out of these various factors that are a part of how we as human beings live and develop those beliefs.

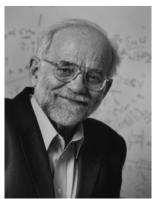
The second thing is that the more we focus on a particular set of beliefs or a particular belief, the more the belief becomes our reality. It is part of how the brain works: the more neurons are connected to each other and the more those connections are enhanced, the stronger they become and the harder it is to break them in the future. The classic statement now is that the neurons that fire together, wire together. And that is very true both in terms of how the brain works and ultimately in terms of how the beliefs that we hold develop and take hold within our brains. So the more we focus on good or bad beliefs, the more that becomes our reality.

The third thing that we are going to be able to talk about is the various new brain imaging studies that have we have done in which we have looked at the atheist brain in action, a person speaking in tongues and what happens in her brain, as well as activity related to other types of practices. We now have a much broader array than we have ever had before to talk about the rich complexity of the spiritual dimension of human beings, and we will be talking about this complexity and how our practices relate to the various belief systems that we hold.

Finally, we will discuss the realization that all of our brains have many, many limitations and biases that affect how we look at our world. By understanding those limitations and biases, we ultimately can find ways of becoming better believers. This does not mean we need to find the right belief system, rather we ought to turn our focus to how we can better choose which beliefs to follow and how we can develop a flexibility in that belief system that can enable us to do well and be productive and positive throughout our lives.

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# Dr. Lanny Schmidt to Lecture October 19th: "Faith and Science and the Book of Job"



Dr. Lanny Schmidt will lecture on Thursday, October 19, 2006, and the title of his talk is "Faith and Science and the Book of Job." Debra Fisher, Managing Editor of the Canyon Institute for Advanced Studies newsletter recently caught up with a busy Dr. Schmidt to discuss his views on the battleground issue of faith and science.

Professor Schmidt's research at the University of Minnesota fo-

cuses on various aspects of chemistry and chemical engineering relevant to technological applications. Reaction systems of recent interest are catalytic oxidation processes to generate products such as hydrogen, syngas, olefins, and oxygenates. Applications include direct conversion of alkanes and renewable fuels into chemicals, the production of hydrogen, fuel reforming for fuel cells, and development of new clean technologies. Professor Schmidt has published over 320 papers in refereed journals and has supervised approximately 75 dissertations and 15 masters' theses at the University of Minnesota. He is a member of the National Academy of Engineering.

**Canyon Institute for Advanced Studies:** You characterize the relationship between faith and science as being situated on a battleground. Can you explain this?

Lanny Schmidt: My point is that I am a scientist and an educator, and I encounter students who are faced with the decision to choose between the faith perspective they were raised with and the science that they engage as young adults in the academic world. When this dichotomy exists—this battlefield—students are forced to choose between science and faith. My experiences as a researcher working with young scientists in the lab and as an educator instructing students in the classroom have been that students choose science. Simply stated, the battleground model is a recipe for disaster for faith.

We can see how faith loses out on the battlefield with a quick review of recent human history. In the 20th century the first test-tube baby, Louise Brown, was born in Great Britain. Throughout the world, the science that made her conception possible was enthusiastically acclaimed in both the medical and academic arenas. Yet the Christian community adamantly objected to this use of science on moral grounds. Now, almost ten years later, infertile couples benefit from this science on a regular basis. Today, we accept this technology as a wonderful way for Christian couples to become parents. Venturing back to the 19th century, Charles Darwin and his theory of natural selection was at the center of the anti-religious debate. Yet today, regardless of

religious beliefs, this theory is considered a cornerstone of biology. Taking another step back in time, my mother once thought the earth was flat.

**CIAS:** As a researcher in the fields of chemical engineering and materials science, what do you perceive is the most radical change our society is undergoing at present?

LS: We are realizing that the next battleground issue will likely be related to brain-based research because we are quickly learning how to chemically control the brain. We are already using chemicals to treat depression and to suppress the desire to gamble. The question being asked is: Will we use chemicals to eliminate faith? Here again, I believe we are unnecessarily setting up totally phony battleground issues. Faith is all consuming, just as science is all consuming. They are not two different worlds.

It is important to note that in biblical times, there was no separation between science and faith (e.g., the question of why Job got boils). Our faith hasn't changed, but science has changed our world. In the area of faith, we don't have any more answers than Job did about why he was plagued with boils. We now have doctors who can treat boils, but the fundamental questions are still the same. I'm reminded here of the old hymn by Isaac Watts, "Oh God, Our Help in Ages Past." The final verse of this hymn is as bracing today as were the verses of the Psalm (90:1-2) upon which it was based:

O God, our help in ages past, Our hope for years to come, Be thou my guide while life shall last, And our eternal home.

The things we can and will be able to do in the area of biology, as well as those things we will be able to do in the near future in the area of brain-research, will be equally spectacular. Things are changing faster and faster and faster. For example, look at how quickly stem-cell research has developed, and it is likely that in the next 20 years, we will unravel the mystery of how the mind works. It is important to remember that you can't have the science without having the challenges. The idea that I want people to think through is how these scientific advances will challenge their faith—externally and internally. Here I'd like to comment briefly on my research, which is based on renewable energy. I investigate how we can improve our individual lives and society as a whole through the advances of science. This is what I do professionally. But this topic about how our faith will be challenged in the future and how we will choose to respond to these challenges is far more important to me.

**CIAS:** You commented that "Faith properly understood is timeless," and you offered the book of Job as an example of the

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### Faith and Science and the Book of Job

timelessness of faith. Do the lessons from Job's life apply as much to a person without a defined faith perspective as they do for a Jew or Christian?

**LS:** What I learned from my fundamental background is that faith is a personal matter. You must develop your own faith without relying on your parents, spouse, or the church. Every person has to find a personal reason for doing what he does. Science, however, is cultural. Science is society; faith is me.

We all have faith. It is part of the human condition. You can't get up in the morning without faith. There is a core need to understand who we are and the meaning of life, and it is part of the human makeup to be curious about why things happen the way they do. We have the same problems Job had: good things happen, bad things happen, and ultimately we will all die. Every person has to work this out for himself. What is important is to think carefully about the questions you ask so that you don't get the wrong answers.

#### 2006-2007 Public Lecture Series

Oct. 5, 2006 Andrew B. Newberg, M.D. *Why We Believe What We Believe* 

Oct. 19, 2006 Dr. Lanny D. Schmidt

Faith and Science and the Book of Job

Jan. 18, 2007 William B. Hurlbut, M.D.

Stem Cells, Embryos and Ethics:

Is There a Way Forward?

Feb. 22, 2007 Dr. Denis O. Lamoureux

Beyond the "Evolution vs. Creation
Debate"



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Recordings from CIAS Public Lecture Series are available for purchase. Prices for CDs and DVDs are \$10.00 (USD), which includes shipping and handling within the USA; outside of the United States, please add \$3.00 (USD). Please phone 602.639.6206 or e-mail info@CanyonInstitute.org to inquire about a full listing of available lecture recordings or to place an order.

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Dr. David F. Siemens, Jr. Dr. Norbert Samuelson

Dr. Jeffrie Murphy

Dr. Fred Hickernell

Dr. Mary Puglia/Rev. Carl Alzen

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Dr. Peter Flint

Dr. John Walton Dr. Hava Tirosh-Samuelson

#### Topic

Ethics in a Pluralist Society

Ultimate Foundations of Ethics: Beyond Values, Rules and Denial Implications of Evolutionary Psychology for Jewish Ethics

Vengeance, Justice and Forgiveness

Treasures of the Sand: God's Gift in Scripture & Modern Technology

Revelations of the Human Genome Project

Isaac Newton: Dissenter and Hermetic Philosopher A Mathematical Analogue for a Model of the Trinity

Do We Live in a Right Stuff Universe: The Roots of the Design vs. Naturalism Debate

The Cross and Creation The Icy Galilean Satellites Origin of the Moral Law Cosmology and Creation

Gaps Matter

New Scientific Technologies Reveal the Secrets of the Dead Sea Scrolls

Genes, Genesis and God

Finding a Footing on a Slippery Slope: The Ethics of Embryo Cell Research Biocultural Evolution in the 21st Century: The Evolutionary Role of Religion Conflicts and Confederacies between Mathematics and Christianity: Parables for

our Road Ahead in Science and Technology

The Dead Sea Scrolls and the Bible: New Evidence from Ancient Texts

What Philosophers Don't Seem to Know about Knowledge

Genesis and Evolution: Integration

Genesis and the Big Bang

Jesus in the Dead Sea Scrolls and The Da Vinci Code

Reading Genesis 1 with Ancient Eyes: What Does it Mean to Create? Beyond Conflict of Science and Religion: The Case of Judaism

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A Christian interdisciplinary research center, bringing together minds and resources to:

- Investigate and research issues emerging from new discoveries and advances—particularly those that redefine
  the boundaries of our knowledge and of its limits—to
  better understand their implications for us in the common ground of faith and discipline;
- Develop insights that lead to a more integrated view and understanding of the world around us, and of our stewardship of its emergent challenges;
- Disseminate information and perspectives to assist people of faith in the global community in developing sound, coherent, and informed foundations for engaging the exciting opportunities that lie before us.

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