Module Drop-Ins for Courses in Science & Religion

Dear Professor or Student of Science & Religion:

At the Center for Theology and the Natural Sciences (CTNS) we have for some time encouraged faculty in undergraduate institutions, seminaries, and university graduate programs to integrate the dialogue between Science and Religion into existing disciplinary teaching. Students both in the sciences and in Religious Studies or Theology would benefit with this broadening of horizons.

What we offer here is a number of individual Modules on selected topics which could easily be dropped-in an existing syllabus. In a 3-credit science course dealing with physical cosmology or evolutionary biology, for example, the faculty person could simply drop in a module on astrotheology or the evolution controversy. In a university or seminary setting, a professor of Hebrew Scriptures might select one or both of these same two modules as well. Each module is designed for one week's study out of a quarter or semester, whether the class meets
once for three hours or twice for ninety minutes. Below is a list of the modules included here. Try one or two and let CTNS know how well it works: CTNS.org.

Introduction to the Science & Religion Dialogue
Animals in Science and Theology
Astrobiology, Astrotheology, and Contact with ETI
Big History (completer course)
Creation, Big Bang Cosmology, and the Fine Tuning of the Universe
Ecology & Ethics
The Evolution Controversy
Genetics, Stem Cells, CRISPR, and Bioethics
Islam and Science
Judaism and Science
Neuroscience & Theological Anthropology
Physics and Divine Action
Transhumanism: Theological Responses
Module
Introduction to the Science & Religion Dialogue

Science Module for existing university or seminary level courses.
Drop in to a course syllabus (with modifications) in
Cosmology or Evolutionary Biology
Homiletics
Religious Studies
Metaphysics: Epistemology
Introduction to Theology
Systematic Theology: Methodology
1 week's assignment for 3 hours of class meeting

WAYS OF RELATIONG SCIENCE & RELIGION
Is science at war with religion? It certainly looks like it. But, a closer examination will show that the situation is complicated. Genuine science is not at war with authentic religion. Scientism, a naturalistic ideology built on science, is certainly at war with all non-scientific forms of belief, including Christianity and other religious traditions. Nevertheless, individual religious adherents committed to Christianity, Judaism, Islam, and many classic religious traditions function every day as research scientists, sometimes celebrating how the natural world sings poetically to its divine creator.
It will be illuminating to adumbrate eight ways or models that Science and Religion relate. Four fit the warfare image: (1) scientism, (2) scientific imperialism, (3) ecclesiastical authoritarianism, and the culture war over (4) evolution. Four others fit the non-warfare image: (5) the two books, (6) the two languages, (7) ethical cooperation, and (8) hypothetical consonance leading to creative mutual interaction.

DLO (Desired Learning Outcomes)
Added to the set of DLOs for the entire course. The student should also demonstrate...
1. knowledge of alternative models for relating science with religion;
2. ability to describe issues at stake;
3. awareness of non-warfare consonance and the prospects for a cooperative future.

REQUIRED READING
http://tedstimelytake.com/theological-briefs/
Peters, Ted, "Science and Theology: Where Are We?" pp. 15-44 of Science, Theology, Ethics.
Ashgate 2003. ISBN 0-7546-0825-5 (PBK); 0-7546-0824-7 (HBK)
When God and Science Meet. https://t.e2ma.net/webview/j9xff/36773e1470005b34a5abce3b44fe9b

RECOMMENDED READING (Select)
http://jaar.oxfordjournals.org/content/82/2/307.full.pdf?keytype=ref&ijkey=zvqicMweLCVaLS6

This comprehensive volume is valuable for almost all modules.

OHRS 4 Polkinghorne, "Christianity and Science"
OHRS 5 Nasr, "Islam and Science"
OHRS 8 Atkins, "Atheism and Science"
OHRS 3 Samuelson, "Judaism and Science"
OHRS 5 Nasr, "Islam and Science"
OHRS 8 Atkins, "Atheism and Science"
ORRS 48 Stenmark, "Feminist..."
OHRS 22 Pannenberg, "Contributions from Systematic Theology"

**This comprehensive volume is valuable for Science classes.**
OHN 21 M. Reimers and B. Oakley, "Empathy, Theory of Mind, Cognition, Morality, and Altruism"
OHN 30 J. Roughgarden, "Homosexuality and Evolution: A Critical Appraisal"
OHN 33 F.J. Ayala, "Human Evolution and Progress"
OHN 35 F.J. Ayala, "Adaptive Significance of Ethics and Aesthetics"
OHN 39 T. Borchert, "History and Diversity of Religion"
OHN 41, T. Peters, "Universal Humanity, Religious Particularity, and Scientific Reductionism"


**This anthology is available in multiple languages.**
Traditional Chinese, 科學與宗教 Chung Hwa Book Company, Ltd., in Hong Kong, 2003
Simplified Chinese, 橋：科學與宗教 China Social Sciences Press, Beijing, China, 2002
Portuguese, *Construindo Pontes Entre a Ciência e a Religião*
   Translated by Luis Carlos Borges; Supervised by Eduardo Cruz
   Edicoes Loyola in Sao Paulo, Brazil, 2004
German, *Brücken bauen Naturwissenschaft und Religion.* Vandenhoek & Ruprecht in Goettingen, 2006
Indonesian Bahassa, *Menjembatani sains dan agama*
   Forwards by Prof. Dr. H.M. Amim Abdullah and Pdt. Prof. E. Gerritt Singgih, Ph.D.
   Translated by Jessica Christiania Pattinasarany. Gunung Mulia in Jakarta, Indonesia, 2004
Module
Animals in Science & Theology

Science Module for existing university or seminary level courses.
Drop in to a course syllabus (with modifications) in
   Evolutionary Biology
   Biology or Zoology
   Religious Studies
   Theological Anthropology
   Introduction to Theology
   Systematic Theology: Methodology
1 week's assignment for 3 hours of class meeting

ANIMALS IN SCIENCE AND THEOLOGY

Both scientific and theological anthropology these days emphasize relationality—that is, we *Homo sapiens* cannot be who we are apart from our relationship to one another, to the environment, to the plant world, and to the animal world. We are interdependent.

Just what should be the moral status of the animals around us and upon whom we are dependent? Do animals have intrinsic value, or only utilitarian
value? Do animals share with human beings the imago Dei, the divine image? Should animals be baptized by Christians?

DLO (Desired Learning Outcomes)
Added to the set of DLOs for the entire course. The student should also demonstrate...
1. knowledge of current conversation regarding the relationship of humanity to animals.
2. ability to describe issues at stake;
3. at least a tentative moral stand toward the animals with whom we share our planet.

REQUIRED READING

Either,
Joshua Moritz, "Animals and the Image of God in the Bible and Beyond"
Dialog 48:2 (Summer 2009) 134-146.


Or,


Or,
This comprehensive volume is valuable for almost all modules.
OHRS 52 Celia Deane-Drummond, "Theology, Ecology, and Values"
OHRS 55 Nancy Howell, "Relations between Homo sapiens and Other Animals"

Or,
ISBN 978-0-415-49244-7 (hbk) or 978-0-203-80351-6 (ebk).
This comprehensive volume is valuable for almost all modules.
RCRS 45 Ellison Banks Findly, "Animals as religious and soteriological beings: A Hindu perspective"
RCRS 46 Gregory R. Peterson, "Animals and Christianity,"
Module:
Astrobiology, Astrotheology, and Contact with ETI

Science Module for existing university or seminary level courses.
Drop in to a course syllabus (with modifications) in
Astronomy or Astrobiology
Christian Education
Systematic Theology: Creation, Anthropology
1 week's assignment for 3 hours of class meeting

ASTROBIOLOGY, ASTROTHEOLOGY & CONTACT WITH ETI

Outer space vibrates with spiritual meaning within the human soul. Astronomy and astrobiology along with related space sciences thrill us with expectations and even hopes of finding microbial life within our solar system and intelligent life on exoplanets elsewhere in the Milky Way. If we earthlings find that we share our universe with other living neighbors in space, how will this impact our theology of creation and the human condition?

This unit introduces the cross-over discipline of Astrotheology. *Astrotheology is that branch of theology which provides a critical analysis of the contemporary space sciences combined with an explication of classic doctrines such as creation and Christology for the purpose of constructing a comprehensive and meaningful understanding of our human situation within an astonishingly immense cosmos.*

The agenda of astrotheology asks: (1) Will confirmation of ETI cause terrestrial
religion to collapse? (2) Can the scope of God’s creation include the entire cosmos? (3) What can we expect when we encounter ETI? Should we take UFOs seriously? (5) How can religious leaders prepare theologically and ethically to greet our new space neighbors?

DLO (Desired Learning Outcomes)

Added to the set of DLOs for the entire course. The student should also demonstrate...
1. knowledge of basic agenda of Astrobiology and Astrotheology;
2. ability to describe issues at stake;
3. awareness of theological and ethical implications.

REQUIRED READING


Peters, Ted, "Twelve Ethical Issues in Exploring Our Solar Ghetto"

RFECOMMENDED READING

This comprehensive volume is valuable for almost all modules.
RCRS 10 Grace Wolf-Chase, "Astronomy: From star gazing to astrobiology"
RCRS 11 Gerald James Larson, "Hindu cosmogony/cosmology"
RCRS 13 Antje Jackelén, "Cosmology and theology"

ADDITIONAL RESOURCES


SETI Institute, http://www.seti.org/
METI, meti.org
CTNS Website: ctns.org
Ted Peters' Website: TedsTimelyTake.com
Biologos: http://biologos.org/blogs/chris-stump-equipping-educators/series/this-week-in-creation
Big History Course (Complete)

This is not a module. Rather, this skeletal syllabus suggests how to structure an existing or new course in Big History. It may also be valuable for an introduction to Humanities or even Evolutionary Biology. What we offer here is a basic description of the entire course, including the specific drop-ins dealing with the question of God within a scientific account of natural and human history.

BIG HISTORY

The course description for the entire course might look like this:

This course on Big History will place World History and the question of God within the larger setting of Big Bang cosmology, evolution, and the future of Planet Earth. Beginning with the Big Bang nearly 13.8 billion years ago, the story Big History tells is an evidence-based account of emergent complexity, with simpler components combining into new units with new properties and greater energy flows. Nature has a history, just as the human race has a history. And what happens in nature exerts a big impact on what happens in the course of human events and the evolution of human consciousness. Within this framework, this Big History course will ask the question of God just as did our ancestors in China, India, Israel, and Greece during the first millennium before the common era. Studying history is a sure way to study what goes on within the student's own mind.
DLO (Desired Learning Outcomes)
Added to the set of DLOs for the entire course. The student should also demonstrate...
1. knowledge of the story of the cosmos as Big History tells it;
2. rudimentary knowledge of the Axial Age and its religious insights;
3. awareness of reasons how the experience of transcendence forms the human soul.

REQUIRED READING for the entire course.


Notice in the table of contents of *Big History* how this basic text is organized according to historical thresholds. Construct the course syllabus according to the progression of this text and simply add relevant chapters from *God in Cosmic History*. Here are some examples for a syllabus.

SKELETON of the SYLLABUS STRUCTURE.

**Unit 1**
*Big History*, Chapters 1,2,
*God in Cosmic History*, Chapters 1,2,3

**Unit 2**
*Big History*, Chapter 3,4
*God in Cosmic History*, Chapters 4,5,6

**Unit 3**
*God in Big History*, Chapters 10,11
WEB RESOURCES ARE RICH. ADD SOME TO CLASS SESSIONS.

Visit the International Big History Association website for excellent additional resources. http://www.ibhanet.org/

Narrated by physicist and educator Neil deGrasse Tyson, this made-for-television reiteration of Carl Sagan's series on the cosmos provides an informative visual treat. The big bang bangs on the screen, and the viewer relives cosmic history in this imaginative yet scientifically sound story.


Module
Creation, Big Bang Cosmology, and the Fine Tuning of the Universe

Science Module for existing university or seminary level courses.
Drop in to a course syllabus (with modifications) in
Cosmology or Evolutionary Biology
Religious Studies
Scripture: Genesis
Introduction to Theology
Systematic Theology
1 week's assignment for 3 hours of class meeting

CREATION & BIG BANG COSMOLOGY

Did God create the physical universe out of nothing, *creatio ex nihilo*? Is God's creative work continuing, *creatio continua*?

The Hebrew Scriptures make it clear that reality is fundamentally historical in character. Recent scientific theories such as thermodynamics and Big Bang cosmogony both attest to the contingent, historical, and dynamic character of the natural world. Physical cosmology is at minimum consonant with the biblical picture of the physical world as historical, changing, and open to newness in the future.
DLO (Desired Learning Outcomes)
Added to the set of DLOs for the entire course. The student should also demonstrate...
   1. knowledge of basic theological distinctions such as creation from noting and continuing creation;
   2. rudimentary knowledge of Big Bang cosmology;
   3. awareness of reasons why it appears that physical cosmology and creation appear consonant.

REQUIRED READING

Robert John Russell, “The Doctrine of Creation out of Nothing in Relation to Big Bang and Quantum Cosmologies” AAAS/DoSER website:
file:///C:/Users/Ted/Downloads/The%20Doctrine%20of%20Creation%20out%20of%20Nothing.pdf

William Lane Craig, "The Teleological Argument and the Anthropic Principle," AAAS/DoSER website:
file:///C:/Users/Ted/Downloads/The%20Doctrine%20of%20Creation%20out%20of%20Nothing.pdf

Paul Davies, "Universes Galore: Where Will It All End?" AAAS/DoSER website:
file:///C:/Users/Ted/Downloads/Universes%20Galore%20Where%20Will%20it%20All%20End.pdf
Module
Ecology, Theology, & Ethics

Science Module for existing university or seminary level courses.
Drop in to a course syllabus (with modifications) in
  Religious Studies
  Systematic Theology: Creation
  Ethics
  Environmental Studies
1 week's assignment for 3 hours of class meeting

ECOLOGY & ETHICS

More than half a century ago scientists and futurists forecasted that reckless human practices--increased agricultural and industrial production, depletion of non-renewable natural resources, human population growth, pollution growth, and release of carbon into the atmosphere--would lead to climate change and biological die-backs. Those dire forecasts are now becoming fulfilled as Planet Earth suffers from losses in its life-giving power.

With the exception of the World Council of Churches in the late 1960s and 1970s, the theological community ignored scientific prophecies; religious leaders did not take the ecological challenge seriously until the Chernobyl nuclear spill in 1986. In more recent decades, theologians have moved the health of our planet into the center of their ethical concern. By tying ecological ethics with the longstanding Christian concern for global justice, theologians today are becoming spokespersons
for the kind of economic justice that is necessary if the human race is to take responsibility for planetary health.

DLO (Desired Learning Outcomes)
Added to the set of DLOs for the entire course. The student should also demonstrate...
1. knowledge of the debate over climate change;
2. ability to describe issues at stake;
3. awareness of theological and ethical commitments.

REQUIRED READING
EITHER,
This comprehensive volume is valuable for almost all modules.
OHRS 13 Bratton, "Ecology and Religion"
OHRS 52 Deane-Drummond, "Theology, Ecology, and Values"
OHRS 53 Rolston, "Environmental Ethics and Religion/Science"

OR,
This comprehensive volume is valuable for almost all modules.
RCRS 31 Hava Tirosch-Samuelson, "Judaism and the Science of Ecology"
RCRS 32 Christopher Key Chapple, "Asian Religions, Ecology, and the Integrity of Nature"
RCRS 33 Whitney A. Bauman, "Meaning-Making Practices and Environmental History"

OR,
Pope Francis, Laudato Si.

RECOMMENDED READING

ADDITIONAL RESOURCES
CTNS Website: ctns.org
Ted Peters' Website: TedsTimelyTake.com
Biologos: http://biologos.org/blogs/chris-stump-equipping-educators/series/this-week-in-creation
Module

The Evolution Controversy

Science Module for a course in either Religious Studies or Theology
Drop in to a course syllabus (with modifications) in
Evolutionary Biology
Old Testament; Genesis
Introduction to Theology
Systematic Theology: Creation
1 week's assignment for a 3 hour class meeting

THE EVOLUTION CONTROVERSY

This module will cover the controversy over Charles's Darwin's theory of evolution in contemporary Christianity, Islam, science, and public education. The contending schools of thought will be briefly summarized, compared, and contrasted: (1) the theory of evolution as science only; (2) reductionist materialism or atheism; (3) biblical and scientific creationism; (4) intelligent design; and (5) theistic evolution.

This module will be valuable to students studying the Hebrew scriptures, because the interpretation of the Bible is central to this controversy. It will also be valuable to students in systematic theology, because it amplifies the doctrine of creation and challenges the theologian to confront both creatio ex nihilo and creatio continua.

What theologians and ethicists need to take seriously within the framework of theistic evolution is the problem of suffering. Suffering is built into nature. How can religious faith in a gracious and loving God be reconciled to the indisputable fact that the evolutionary struggle for life necessarily includes disease, predation,
suffering, and death? Theologically this is called the *theodicy problem*, and even Charles Darwin addressed the issue when constructing his theory of descent with modification due to natural selection.

**DLO (Desired Learning Outcomes)**

Added to the set of DLOs for the entire course. The student should also demonstrate...

1. knowledge of the competing schools of thought and describe them fairly;
2. awareness of the particular mode of biblical interpretation assumed in the debate;
3. integration of Darwinian evolution into questions surrounding God's creation.

**REQUIRED READING**


Charles Darwin, *Origin of Species*, Chapter IV.

http://www.evolbiol.ru/docs/docs/large_files/charles_darwin.pdf

**RECOMMENDED READING**


*This comprehensive volume is valuable for Science classes.*

OHN 8 T.M. Preuss, "The Human Brain: Evolution and Distinctive Features"

OHN 16 M.V. Flinn, "The Human Family: Evolutionary Origins and Adaptive Significance"

OHN 24 W.M. Baum, "Behavior Analysis, Darwinian Evolutionary Processes, and the Diversity of Human Behavior"

OHN 30 J. Roughgarden, "Homosexuality and Evolution: A Critical Appraisal"

OHN 32 T.W. Deacon, "Human Variability and the Origins and Evolution of Language"
OHN 33 F.J. Ayala, "Human Evolution and Progress"
OHN 35 F.J. Ayala, "Adaptive Significance of Ethics and Aesthetics"
OHN 38 M. Ruse, "Social Darwinism"
OHN 39 T. Borchert, "History and Diversity of Religion"
OHN 41, T. Peters, "Universal Humanity, Religious Particularity, and Scientific Reductionism"


This comprehensive volume is valuable for almost all modules.
RCRS 22 Ursula Goodenough, "The biological antecedents of human suffering"
RCRS 23 Holmes Rolston III, "Suffering through something higher"

Websites:
Harun Yaha (Islam), http://www.harunyahya.com/
Answers in Genesis, https://answersingenesis.org/
Clergy Letter Project,
http://www.theclergyletterproject.org/Christian_Clergy/ChrClergyLtr.htm
Module
Genetics, Stem Cells, CRISPR, and Bioethics

Science Module for existing university or seminary level courses.
Drop in to a course syllabus (with modifications) in
Genetics
Systematic Theology: Anthropology
Moral Theology
Ethics
1 week's assignment for 3 hours of class meeting

GENETICS, STEM CELLS, AND BIOETHICS

From 1990 into 2003 the worldwide Human Genome Project mapped the human genome, sequencing DNA nucleotides and locating many of our genes. For a period some scientists touted that DNA provides the essence of what makes a human being and suggesting support for genetic determinism. Moral and legal issues exploded over genetic testing, abortion to eliminate certain genes, insurance discrimination, and the return of eugenics in free market form. Theologians have been compelled to re-think many inherited assumptions regarding human nature, and bioethicists have sought to persuade the larger society to love its children regardless of genetic make-up and protect those with genetic difficulties from financial injustice.

Then, the isolation of human embryonic stem cells in 1998 was greeted with a global cheer of joy over the anticipated victories of regenerative medicine. Yet,
some naturalists, evangelicals, and Roman Catholics sought to end the research game before it would begin. Why? Ethicists seemed to talk past one another in answering this question. Like a baseball roster, this unit will list the players and their positions. Ethicists and moral theologians pitch their moral arguments from within their respective frameworks: (1) the medical benefits framework; (2) the embryo protection framework; (3) the nature protection framework; and (4) the research standards framework.

Just recently, scientists at the University of California in Berkeley have made a new discovery known as CRISPR-Cas9, a form of inexpensive gene editing. As the possibility of editing the genomes of a large number of human beings as well as animal species becomes more real, an urgency for social and moral guidelines is pressing. How can moral theologians and ethicists incorporate this science into their own thinking and contribute to the wider cultural discussion?

DLO (Desired Learning Outcomes)
Added to the set of DLOs for the entire course. The student should also demonstrate...
1. knowledge of basic genetics, stem cells, and CRISPR/Cas9;
2. ability to describe issues at stake;
3. awareness of theological and ethical commitments.

REQUIRED READING


Watch for CRISPR articles at the TTT (Theologians Testing Transhumanism) site:
http://theologyandtranshumanism.weebly.com/theology--science-articles.html

ELCA: "Genetics and Faith: Power, Choice, and Responsibility:"
http://download.elca.org/ELCA%20Resource%20Repository/GeneticsSS.pdf

RFECOMMENDED READING

Vatican, Donum Vitae,


http://www.tandfonline.com/doi/abs/10.1080/14746700.2015.1056583


*This comprehensive volume is valuable for almost all modules.*

RCRS 39 Ronald Cole-Turner, "Biotechnology and Justice"
RCRS 40 Karen Lebacqz, "Justice and biotechnology: Protestant views"
RCRS 41, Ebrahim Moosa, "Muslim ethics and biotechnology"
RCRS 43 Laurie Zoloth, "Justice in the margins of the land: Jewish response to the challenges of biotechnology"

**ADDITIONAL RESOURCES**

- CTNS Website: ctns.org
- Ted Peters' Website: TedsTimelyTake.com
- Biologos: http://biologos.org/blogs/chris-stump-equipping-educators/series/this-week-in-creation
Module:
Islam and Science (Double Module Option)

Science Double Module for a course in either Religious Studies or Theology
Drop in to a course syllabus (with modifications) in
   Islam
   Introduction to Religious Studies
   Introduction to Theology
   Systematic Theology: Creation
   2 week's assignments for a 3 credit hour class

ISLAM and SCIENCE (2 Modules: a and b)

The relationship of Islam to science both pre-dates the rise of modern science in Western Europe and post-dates it. In the first module (a), "Discourse on Method," we will remember the early history in light of the concept of knowledge deriving from the Qur'an. In the second module (b), "Islam and Cosmology Today," we will look at the moving frontier of science as contemporary Islamic scholars engage it.

DLO (Desired Learning Outcomes).
   Each student should demonstrate...
1. awareness of the complexity of Islam and science discourse
2. historical perspective on Islam and science
3. an understanding of history of science, in particular history of science in Islamic civilization.
4. a grasp of Islamic cosmology
REQUIRED READING for (a) Module, "Discourse on Method"


REQUIRED READING for (b) Module, "Islam and Cosmology Today"


RECOMMENDED READING


NOTE: some of these copyrighted materials are available for easy download from CTNS for exclusive educational purposes.

CTNS thanks Muzaffar Iqbal for consultation on this Module.
Module
Judaism and Science

Science Module for a course in either Religious Studies or Theology
Drop in to a course syllabus (with modifications) in
  Judaica
  Religious Studies
  Introduction to Theology
  Systematic Theology: Creation
  1 week's assignment for a 3 hour class meeting

JUDAISM and SCIENCE

Many of the breakthrough scientific researchers of the modern era have come from
the Jewish tradition. Jewish theologians frequently appeal to the principle of
*Tikkun Olam* (Hebrew: תיקון עולם), which suggests that the world we
have inherited is not yet complete. God asks the human race,—related in the divine
image—to improve the world and thereby continue the work of creation. The
Hebrews have been commissioned by God to attend to the welfare of the larger
society, to the creation as a whole. Science and technology—especially medical
technology—make our world a better place.
DLO (Desired Learning Outcomes)
Added to the set of DLOs for the entire course. The student should also demonstrate...
-- knowledge of what some Jewish theologians say about science.

REQUIRED READING (Select two or three of the following)


This comprehensive volume is valuable for almost all modules.
RCRS 8 Noah Efron, "Jews and the study of nature"
RCRS 24 Lawrence Troster, "Magic, monotheism and natural evil: Classical and modern Jewish responses to suffering"
RCRS 31 Hava Tirosch-Samuelson, "Judaism and the science of ecology"
RCRS 38 Shai Cherry, "Jewish origins: Cosmos, humanity, and Judaism"
RCRS Laurie Zoloth, "Justice in the margins of the land: Jewish responses to the challenges of biotechnology"

RECOMMENDED READING


This comprehensive volume is valuable for almost all modules.
OHRHS 3 Norbert Samuelson, "Judaism and Science"


WEB RESOURCES

Jonathan Sachs, et.al., "How Has Jewish Thought Influenced Science," Moment
http://www.momentmag.com/jewish-thought-influenced-science/
Module
Neuroscience & Theological Anthropology

Science Module for existing university or seminary level courses.
Drop in to a course syllabus (with modifications) in
Philosophy: Mind/Brain Problem
Religious Studies
Metaphysics: Epistemology
Pastoral Care
Systematic Theology: Anthropology
1 week's assignment for 3 hours of class meeting

NEUROSCIENCE & THEOLOGICAL ANTHROPOLOGY

This unit clarifies a misleading impression growing in the cognitive sciences as a byproduct to recent advances in neuroscience. The byproduct is a tendency to reduce conscious operations to preconscious or subconscious determinants. Director of the Cognitive Neuroimaging Unit in Saclay, France, Stanislas Dehaene, for example, startles us by declaring that in everyday activity we fail to realize just how much of our activity is guided by "an unconscious automatic pilot...We constantly overestimate the power of our consciousness in making decisions--but, in truth, our capacity for conscious control is limited" (Dehaene, 2014, 47). It is true, to be sure, that our neurocircuitry is responsible for this automatic pilot, but we need not jump to the unwarranted conclusion that this automaticity is exhaustively responsible for every cognitive process. It is premature to
overemphasize the brain's automatic pilot, allowing the higher levels of consciousness to drift to the margins if not off stage. It is more accurate to say: human cognition relies on our automatic pilot to clear a mental workspace wherein symbolic discourse and abstract reasoning can engage in activity the brain could not, by itself, have thought of.

This discussion within neuroscience and cognitional theory has implications for tenets within theological anthropology such as free will, the relation of the body to the soul, and resurrection of the body.

DLO (Desired Learning Outcomes)
Added to the set of DLOs for the entire course. The student should also demonstrate...
1. knowledge of deterministic claims associated with neuroscience;
2. ability to describe issues at stake;
3. awareness of theological commitments regarding body and soul.

REQUIRED READING


This comprehensive volume is valuable for almost all modules.
RCRS 26 Michael L. Spezio, "The Cognitive Sciences and Religious Experience"


RECOMMENDED READING


RCRS 29 Stephen, Kaplan, "Hinduism and the Cognitive Sciences"


**This comprehensive volume is valuable for Science classes.**

OHN 8 T.M. Preuss, "The Human Brain: Evolution and Distinctive Features"
OHN 14 S.N. Austad and C.E. Finch, "Human Life History Evolution: New Perspectives on Body and Brain Growth"
OHN 20 S. Hameroff, "The Quantum Origin of Life: How the Brain Evolved to Feel Good"
OHN 21 M. Reimers and B. Oakley, "Empathy, Theory of Mind, Cognition, Morality, and Altruism"
OHN 32 T.W. Deacon, "Human Variability and the Origins and Evolution of Language"
OHN 34 R. McDermott, "Culture, Brain, and Behavior: The Implications of Neural Plasticity and Development on Social Contexts and Political Structures"

**ADDITIONAL RESOURCES**

CTNS Website: ctns.org
Ted Peters' Website: TedsTimelyTake.com
Biologos: http://biologos.org/blogs/chris-stump-equipping-educators/series/this-week-in-creation
Module
Physics & Divine Action

Science Module for existing university or seminary level courses.
   Drop in to a course syllabus (with modifications) in
       Religious Studies
       Physics
       Metaphysics
       Systematic Theology: Creation
   1 week's assignment for 3 hours of class meeting

PHYSICS AND THE LITTLE WORLD THAT'S EVERYWHERE

As classical physics becomes supplemented with quantum physics, the
deterministic causal nexus of Isaac Newton becomes supplemented with the
indeterminate possibilities of the quantum domain. Because atoms are everywhere,
this could signal an openness and indeterminateness in the physical world that
theologians recognize as God's creation.

This module gives special attention to God's action in nature's world at the
subatomic level. Robert John Russell calls it NIODA, non-interventionist
objective, divine action.

What is NIODA? Here's the background. From 1987 through 2002 at the
invitation of Pope John Paul II, the Vatican Observatory (VO) in cooperation with
the Center for Theology and the Natural Sciences (CTNS) at the Graduate
Theological Union in Berkeley, California, addressed these and many other questions in theology, philosophy, and science. International panels selected by the VO-CTNS research project drew from a global pool of leading natural scientists, philosophers, theologians, and ethicists. Occasionally the discussion oriented itself around the pros and cons of one central hypothesis: Non-Interventionist Objective Divine Action (NIODA) which claimed that God acts objectively at the sub-atomic level— and because atoms are everywhere so also is divine action everywhere— without breaking any laws of nature. This accounts for both general and special providence in a manner that makes theology and physics consonant. By debating this hypothesis, a large number of issues raised in the dialogue shared by Science and Theology come to the fore.

DLO (Desired Learning Outcomes)
Added to the set of DLOs for the entire course. The student should also demonstrate...
1. knowledge of the contrast between classical mechanics and quantum mechanics;
2. ability to describe issues at stake;
3. grasp of the proposal for NIODA..

REQUIRED READING


RFECOMMENDED READING

Peters, Ted, and Carl Peterson, "The Higgs Boson" in Theology and Science.
http://www.tandfonline.com/doi/pdf/10.1080/14746700.2013.809948#.UpVWD-7TkII


This comprehensive volume is valuable for almost all modules.
OHRS 34 Russell, "Quantum Physics..."
OHRS 10 Wegter-McNelly; "Fundamental Physics and Religion"
OHRS 44 Ellis, "Physics, Complexity, and the Science-Religion Debate"
OHRS 35 Thomas Tracy, "Theologies of divine action"
OHRS 9 Bernard Carr, "Cosmology and Religion"
Module

Transhumanism: Theological Responses

Science Module for existing university or seminary level courses.
Drop in to a course syllabus (with modifications) in
   Evolutionary Biology
   Technology Studies
   Future Studies
   Religious Studies
   Theological Anthropology
   Systematic Theology: Eschatology
   1 week's assignment for 3 hours of class meeting

TRANSHUMANISM: THEOLOGICAL RESPONSES

Transhumanism, also known as H+, is a rapidly growing worldwide movement that synthesizes computer technology, nano-technology, genetics, the cognitive sciences, and futurism for the purposes of advancing evolution to a post-biological stage. The belief that all of evolutionary history has been oriented toward increased intelligence is a basic H+ assumption. And, because this generation has the wherewithal to amplify intelligence both in human brains and in machines, it is our moral responsibility to speed up the evolutionary process and leap forward. Armed with the most up-to-date scientific and technological knowledge, transhumanists intend to generate a Singularity, to cross a threshold after which a
new and higher level of intelligent being will take the reins of evolution and steer it forward.

The assumptions and goals of H+ have both troubled and excited religious futurists. To assume that evolution is directed toward increased intelligence cannot be confirmed by evolutionary biologists, and theological ethicists fear that H+ will undercut society's compassion for persons who are mentally challenged. Yet, some Mormons and some Buddhists are welcoming transhumanism with open arms, embracing its optimism for transformation and renewal. The subject of transhumanism provides an arena in which to wrestle with fundamental religious values and the startling possibilities of advancing science and technology.

DLO (Desired Learning Outcomes)

Added to the set of DLOs for the entire course. The student should also demonstrate...
1. knowledge of current conversation regarding transhumanism and religion
2. ability to describe issues at stake;
3. at least a tentative moral stand regarding public policy regarding H+ technology.

REQUIRED READING


**This comprehensive volume is valuable for almost all modules.**

RCRS 48 Aubrey D.N.J. DeGrey, "Prospects of the biomedical postponement of aging"
RCRS 53 Robert M. Geraci, "Cyborgs, robots, and eternal avatars: Transhumanist salvation"
RCRS 54 Noreen Herzfeld, "Human-directed evolution: A Christian perspective"

RECOMMENDED READING


NOTE: Some of these copyrighted materials for uploading into an educational setting are easily available at CTNS.