Press Release:

CTNS awarded $200,000 to study the **S**cientific **A**nd **T**heological **U**nderstandings of **R**andomness in **N**ature: project SATURN.

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Berkeley, CA. The Center for Theology and the Natural Sciences (CTNS) has been awarded a $200,000 research grant from Calvin College.[1] The purpose of this grant is to study the scientific warrants for and theological implications of randomness, propensities and indeterminism in nature. We call this project SATURN, Scientific and Theological Understandings of Randomness in Nature, to stand for such natural phenomena as the self-organization of the rings of Saturn out of apparently random processes and gravitational interactions.

To date, scholars in the theology and science community have made a strong case for three closely related claims: 1) that God acts at the atomic and subatomic levels of nature, 2) that such divine action makes objective differences in the course of nature, and 3) that God does so without violating or suspending natural processes. Such divine action is referred to as NIODA or non-interventionist objective divine action. The key to making this claim is a compelling philosophical interpretation of quantum mechanics in which atomic and subatomic processes are taken to be causally open (i.e., indeterministic).

The purpose of this new grant is to study the possibility that discoveries in the natural sciences over the past decade point to indeterminism at many more levels in nature ranging from macroscopic physical and biological processes of daily life to the universe as a whole. Areas of research include:

- the macroscopic expression of quantum entanglement (in which once bound quantum particles, when separated over enormous distances, continue to show simultaneous correlations in their properties)
- subtle propensities (tendencies) in apparently random processes in physics and biology
- dynamic self-organization in large-scale physical systems (such as terrestrial meterology and the rings of Saturn)
- the emergence of new properties and processes in complex biological systems which can causally effect the functioning of some properties and processes at lower levels in these system (strong emergence) and the effect of the system as a whole on its underlying parts (top-down/whole-part causality).
- the capacity for autopoiesis (self-regulation in complex, thermodynamically open systems such as the biological cell)

[1] Calvin College received its funds through a major grant from the John Templeton Foundation.

- the universe as understood in terms of quantum cosmology (a quantum-mechanical approach to cosmology) and superstring theory / multiverse cosmology (in which our universe is part of a vast collection of possible universes referred to as the "multiverse").

If this possibility for widespread indeterminism in nature is valid, could it be that God acts in many, perhaps *all*, levels of nature without intervening in them or violating and suspending these processes? Theologians refer to routine divine action in and through the ordinary and regular processes of nature, such as the annual seasons and the bounty of food and the joy of human fellowship, as general providence. Now this new non-interventionist view of divine action throughout nature can be seen as a form of special providence, signifying particular events of sacred significance in personal life and human history, but yet events not warranting the term "miraculous." Of special significance here would be the claim that God's action makes specific differences in the evolution of life, a view often called "theistic evolution."

The SATURN project will bring together a dozen scholars in the natural sciences, philosophy, history of science, and theology for a public event available online and a private research conference at CTNS. The results will be published as an edited book and articles in scholarly and popular journals. New courses will also be created for seminary and doctoral students incorporating this new research.

Details. The SATURN project builds upon the accomplishments of the collaborative research program of CTNS and the Vatican Observatory (VO). During the 1990s and 2000s, VO/CTNS convened a series of international and ecumenical conferences in theology, philosophy and science. Many of the resulting publications made a strong case for nature as indeterministic and thus for the intelligibility of non-interventionist divine action both throughout the 13.8 billion year history of the universe and the 3.85 billion year evolution of life on earth. (See http://www.ctns.org/books.html.) Scientifically the case for NIODA was made primarily in terms of quantum mechanics and its indeterministic interpretation as advanced originally by Werner Heisenberg and as adopted currently by most physicists.

The SATURN project will enquire whether there is increasing evidence for extending this indeterministic interpretation beyond the domain of subatomic physics to include many other areas of nature. A much broader view of indeterminism in nature might offer fascinating new theological insights regarding:

- the relation between randomness, divine providence and God's foreknowledge of future events
- the relation between eternity and time
- God's relation to suffering, disease, death and extinction during the evolution of life on earth

It will encourage scientists to recognize that their research is consistent with their faith and that their scientific labor is a genuine form of religious vocation. Finally it will challenge those atheists who seek to misuse science to support a materialist agenda.

Participants include physicists Gerald Cleaver and George Ellis, historian Ted Davis, philosophers Alicia Juarrero and Nancey Murphy, theologians Niels Gregersen, Joshua Moritz, Alan Padgett, Ted Peters, and Kirk Wegter-McNelly, and theologian and physicist Robert Russell (Principal Investigator).

The program runs from July 1, 2013 through June 30, 2015. There will be a conference in Berkeley in October 2014. This will include a half-day public conference to be video-taped and made available on the project website and a three-day private research conference. A book-length publication is anticipated from the research as well as the creation of new courses to be offered for both seminary and doctoral students.

The mission of CTNS is to promote the dialogue and creative mutual interaction between theology and the natural sciences through research, teaching and public service. Founded in 1981, its international membership receives the scholarly quarterly journal *Theology and Science*. CTNS supports the Ian G. Barbour Professor of Theology and Science in Residence at the Graduate Theological Union, Berkeley. The GTU is an ecumenical consortium of Catholic and Protestant seminaries that offers M. Div., M. A., D. Min. and Ph. D. degrees, as well as an inter-faith community with Centers for Judaism, Islam, and Buddhism. CTNS is an Affiliate of the GTU.

For more information please contact CTNS at www.ctns.org or call us at 510-848-8152. Detailed information on how to register for the public conference and access the online materials will be available in the Spring of 2014.