

## NEW HORIZONS

### **An interdisciplinary research program to support innovative explorations towards illuminating deep integrative foundational aspects of the nature of reality in physics and cosmology**

This multimillion-dollar research grants program in physics and cosmology aims to stimulate scientific discovery at the physics-philosophy interface through innovative interdisciplinary research on deep integrative foundational aspects of the nature of reality. The program will be structured mainly through a set of major international research grants competitions, linked with topical research workshops, interdisciplinary summer schools and world class scientific meetings. The Foundations Research Project in Physics and Cosmology will be a catalyst towards the creation of a new form of virtual research support network providing research support for the best and the brightest innovators in physics working at the cutting-edge of science where it engages ultimate questions.

This project follows on from an exploratory project in 2002 honoring the distinguished physicist John Archibald Wheeler in his 90th birthday year. Wheeler was renowned as a catalyst for inspiring deep long-term innovation in physics via his posing of ‘really big questions’ (RBQs) such as: “Why the quantum?”; “How come existence?”; “It from bit?”; and “What makes meaning?”

This program is inspired by Wheeler’s questing vision in physics. It also is inspired by the spiritual vision of Sir John. This vision looks with enthusiasm and respect to science for its success in unveiling deep new insights relevant in a variety of nuanced ways for addressing the kinds of ‘ultimate questions’ which form a core part of the discipline of philosophical theology.

The Templeton vision for engaging the adventure of scientific ‘deep’ discovery with the intellectual discipline of philosophical theology is shaped by a commitment to epistemic humility in ultimate matters and to the idea that the depths of reality are vast and deep from the point of view of both perspectives: “science” and “theology.” Overall, the spirit of the project is summarized by the Foundation’s motto, “How little we know, how eager to learn.” By supporting the deep adventure of science in various areas of fundamental research, the Foundation seeks to stimulate breakthroughs in human understanding. These especially are sought after in a variety of classic areas of philosophical inquiry, for example: the nature of time, the nature of quantum reality, the ‘ultimate’ nature and source of the rational structure or ‘laws’ that physics maps out, the question of the nature of mind within the physical world, and the nature of the cosmos on the largest possible scales.

### **Purpose in Biology Research Program**

If we are to understand life, we must account for all of life. Humans act in purposeful ways, and we are as much a part of the living world as the first multicellular organism. Any account of life must incorporate all of these realities. Similarly, we cannot understand human purpose apart from our context. We are part of a living world that may exhibit other evidence of purpose, from various organisms exhibiting intention to trends and fine-tuning relevant to questions of cosmic or divine purpose.

A new \$5.5 million program of the John Templeton Foundation will support research concerning whether the study of life, its origins, history, current profusion and potential future can offer any insight into the existence and nature of purpose in the universe.

Research in physics and cosmology has documented a remarkable range of apparent “fine-tunings” of the physical laws, constants, and early conditions of the cosmos with respect to life. These insights suggest to some that we inhabit, as Paul Davies calls it, a “bio-friendly” cosmos. Despite natural linkages of this work with the phenomenon of life, detailed extension into biochemistry and evolutionary biology remains limited.

This initiative is meant to help fill that gap, supporting chemical and biological studies of the potential significance of purpose in the living world (including ways in which we have incorrectly attributed purpose to living things). To what extent is purpose a fundamental feature of life rather than, as many assume, a chancy and unique feature of humans – if not, indeed, just a phantom of brain chemistry?

Many biologists are wary of viewing the living world from a perspective of purpose. Some are even reluctant to attribute purpose to humans – excluding, no doubt their own intentional choice to deny human intention. And it is sometimes argued that purpose and related concepts like teleology and design, are not properly scientific topics, that biology can only address purpose in the sense of teleonomic function. Science can study what the lungs are “for” but not how the course of evolution may be a part of cosmic purpose. But there is no need to quibble about the definition of science. These are all important questions, and they should be addressed in light of current scientific knowledge.

The connection with biological science is important. Too often the study of purpose, teleology and design, far from taking advantage of the great progress in biological science, has been set up in opposition to biology. In this program the goal is not really to ask questions like Was this designed or was it the product of natural selection? but rather to ask What can our knowledge of selection and other evolutionary process tell us about purpose or design in the history of life? Empirical, philosophical, theological and collaborative multidisciplinary research leading to a better understanding of purpose can transform our view of life. Because of the range of possible research, the program overall consists of three separate (though overlapping) requests for proposals:

- *Complex Chemistry and the Origins of Life* in which topics might include the fine-tuning ‘behavior’ of proteins and its importance in living purpose, emergent organic chemistry, origins and nature of life, and the role of purpose in the presence of chance, determinism, and various kinds of causality.
- *Evolutionary History and Contemporary Life* which will support research on such topics as grand ‘mega-’ trends in evolution indicative (or not) of purpose, and other potential sources of evidence of purpose in biology and zoology, including animal behavior.
- *Human Nature and the Origins of the Religious and Spiritual Sense* which may include origins of human cognition, what it is to be fully human, origins of the human spiritual sense, and progress of religions.

In addition, the program will establish at least six expert research consultancies throughout the world to research elements of purpose in life from a deeply interdisciplinary perspective. It also includes a competitive prize program to inspire strategically effective outreach, including design of major programs in other media (to be supported by other sources).

## **Spiritual Capital**

### *The market value of religion*

That is the relationship between markets and morality? While this might seem an odd question to some, there is a long line of thinking that recognizes the strong connection between the two—and there are signs of a renewed interest in the question today. An early example comes from Plato’s *The Apology*, in which he wrote that “Wealth does not bring goodness, but goodness brings wealth and every other blessing, both to the individual and to the state.”

Two millennia after Plato, the Scottish economist Adam Smith, author of *The Wealth of Nations* (1776) noted that there were sound economic reasons to examine the impact of religion on the free market, and vice versa. In fact Smith’s classic text on economics was a sequel to his earlier *Theory of Moral Sentiments* (1759). Smith considered widespread social morality to be essential for the proper functioning of free markets, an insight not given proper attention by Smith’s disciples. In one of the few sustained subsequent studies of the topic the great sociologist Max Weber stressed the importance of understanding the beliefs and commitments that motivate social action. In particular Weber noted what has come to be known as the Protestant Work Ethic, the idea that the rewards from diligent employment signal the blessings of God. Despite the distinguished intellectual pedigree of the markets and morality question, there has not been much research on the issue.

The Foundation has launched a major initiative to help promote an understanding of the relationship between our spiritual commitments and our economic and social circumstances. The goal is to catalyze a new

interdisciplinary research field within the social sciences, dubbed spiritual capital. Toward this end, twenty leading scholars gathered in Cambridge, Massachusetts, in the fall of 2003 to lay the foundations for this ground-breaking initiative, including Nobel-prize winning economist Gary Becker of the University of Chicago, Harvard economist and Business Week columnist Robert Barro, and Harvard political scientist Robert Putnam—the “dean” of social capital research best known for his book *Bowling Alone*.

The concept of spiritual capital draws on new research in economics and other social sciences. This research recognizes how social and economic dynamics are shaped by cultural factors. Scholars have already opened up and delved into areas of human capital and social capital, fields associated with the pioneering work of economist Gary Becker. The specific term “spiritual capital” refers to that aspect of social capital linked with religion and/or spirituality. In the last ten years, Robert Fogel (University of Chicago and 1993 Nobel Laureate in Economics) and others have explored and used the term. In one sense, then, spiritual capital might be seen as a significant subset of social capital. According to Robert Putnam’s influential work on social capital, religion is by far the largest generator of social capital in the United States, contributing to more than half of the social capital in the country.

Spiritual capital research could expand our knowledge by examining religion’s contributions to economic performance and development, by analyzing religious markets, by studying the behavioral basis of social action and more. The challenges of studying spiritual capital are significant, but the opportunities are even greater. New knowledge could broaden and deepen our understanding religion’s role in economic, social and political life.

### **Global Perspectives on Science and Spirituality**

A sabbatical-award program jointly administered by the Interdisciplinary University of Paris and Elon University and with funding from the Foundation, the Global Perspective awards fund 16 scholars with a year’s salary and benefits. Adjusted for seniority, the awards include stipends for books and materials.

Grants are open to scholars based in Central and Eastern Europe, Russia and the New Independent States, India, China and East and Southeast Asia. Funding embraces scientists, philosophers, scholars of the great traditions, social scientists and public-policy makers conducting research on science and spirituality.

After finishing their research projects, scholars prepare proposals for larger programs of activities in their country, the best of which compete for funding in Global Perspective’s second phase. The program provides help to develop the research project and prepare a national or regional proposal.

### **Website for the World’s Most Talented Scientists under 18 Years of Age**

The Foundation is developing a website and newsletter to provide an intellectually stimulating “home” for exceptionally gifted young people (ages 8-18) in the fields of biological and natural sciences, mathematics and technology. The site aims to inspire, support and challenge academically prodigious students beyond the resources available to them in their local schools and communities. Through interviews with leading scientists, a comprehensive index of external competitions, an online resource library and information on accelerated learning opportunities, the site will serve as a one-stop resource for young people worldwide with extraordinary high scientific and mathematical talent.

The program seeks to become the premier site for student with genius potential, especially those interested in scientific discovery, mystery and achievement.