

Worldviews and the Origin of Life:

Two main topics were addressed at the first workshop. The first topic was that of “Worldviews and the Origins of Life.” Under this heading, three presentations were delivered. The first, by Dr. Jack Szostack, a Harvard Medical School professor of molecular biology, addressed the ability to generate new living organisms in the laboratory. According to Szostack, the way that ideas about the origin of life are tested is through laboratory synthesis. Szostack described the work carried out in his lab, which aims at producing “synthetic life” – a life form derived outside of the original lineage of life on Earth. Szostack characterized the scientific search for origins as a puzzle to be solved by a combination of theoretical and experimental investigations. In his presentation, Dr. Szostack remarked that the emergence of a naturalistic explanation for the origin of life will become part of the Copernican-Darwinian tradition, in which humanity, life and the earth have been progressively removed from any special place or consideration. Szostack doubted that the forthcoming naturalistic explanation of origins would have a profound philosophical or theological impact for scientists and others who already believe that life is a chemical process; as the pieces of the puzzle fall into place, the reactions may include surprise at the nature of the explanation, but not at the fact that an explanation has emerged. In contrast, Szostack believes that those who deny the possibility of a naturalistic origin of life will likely not be influenced by any particular scientific advances. Szostack emphasized that educational steps should be taken to prevent the unsettling possibility that advances in origin of life research might contribute to what he characterized as the increasing philosophical polarization of our society between non-religious naturalism and anti-science fundamentalism.

On the more philosophical side, Dr. Holmes Rolston, Colorado State University distinguished professor of philosophy presented on what he considers to be the six big questions of originating life. First, says Rolston, the “information” that biologists place as a second element in Einstein’s universe of matter-energy is problematic. Where does it come from and what is its nature? Second, the idea that life may be intrinsic to physics and chemistry, and possibly “everywhere,” may be contradictory, imposing progress on top of the idea that the origin of life is the result of a random process. Third, Rolston discussed the idea of possibility space – were all possibilities present at the beginning and winnowed down by actions, or were new possibilities created throughout the course of evolutionary history? Fourth, life often co-opts earlier constructions for novel purposes. Is information is generated in these new possibility spaces? Fifth, life seems to go against entropy, building up complex, somewhat stable biomolecules. Rolston asks, how were such molecules preserved from spontaneous break-down and aligned along an up-hill track to originate life? Finally, Rolston asks about anthropic biology. Some physicists and astronomers claim that the universe has been “fine-tuned” for life. Do biologists, with their random, blind process of emergence and evolution, contradict this?

Dr. Ernan McMullin, Philosophy Professor Emeritus at the University of Notre Dame, was the third and final speaker on the “Worldviews and the Origin of Life” topic. For his presentation, Dr. McMullin discussed early Christian notions of the origins of different kinds of organisms. According to McMullin, early Christians had two different sources to

draw on when speculating on the origins of living kinds. These were the Bible and Greek philosophy. McMullin discussed Augustine's seed principles. Augustine believed that the origin of life account found in the book of Genesis was a metaphor. The Creator, rather than introducing each kind into the world abruptly, brought the universe into being in a single act of creation in which the "seeds" of each natural kind were present in the initial moment. Each "seed" would later mature when the conditions were right, launching a new natural kind.

By Matthew Shindell