

12th World Congress on

STRUCTURAL BIOLOGY

May 14-15, 2018 Osaka, Japan

Ethics of synthetic biology

Krishna Dronamraju
Foundation for Genetic Research, USA

Synthetic biology is concerned with the design and construction of new biological parts, devices and systems and the redesign of existing, natural biological systems for useful purposes. The convergence of scientific fields such as molecular biology, computer science and others has rendered it a natural progression, based on existing knowledge. The fact that humanity has reached a stage of development where it seems feasible to create life, or design it to a high degree of specificity, is a significant milestone in its history. It generates important ethical questions: Is synthetic biology something good, a natural use of humanity's talents, or is it a step towards megalomania, playing God, a usurpation of his role? Is it really a natural progression, nature advancing to a state where its products can, in turn, improve nature itself; or does it challenge the dignity of nature by virtue of its unnaturalness? Is it an expression of the creative talent of humanity, thus enhancing human dignity and perhaps that of all life, or does it challenge the dignity of life itself? Regarding its potential consequences, it may, if it succeeds, lead humanity to a new level of development, a paradigm shifts comparable with the scientific or industrial revolutions, through a vast increase in scientific knowledge and subsequent technological developments in all relevant areas, including medicine, food production and fuel development. However, there is potential for serious accidents if synthetic organisms interact with naturally occurring ones, possibly affecting the future course of evolution. Synthetic biology also offers the possibility of creating ever more powerful weapons. It offers potential for both good and evil which appears to be greater than any other technology that has existed.

Biography

Krishna Dronamraju is President of the Foundation for Genetic Research, Houston, and a Visiting Professor of the University of Paris. He was a student and close associate of J.B.S. Haldane, receiving his Ph.D. in human genetics from the Indian Statistical Institute, and later worked with Dr. Victor McKusick at the Johns Hopkins University School of Medicine. Dr. Dronamraju is the author of 19 books and over 200 papers in genetics and biotechnology. He was an Advisor to President Bill Clinton's administration and was a member of the United States Presidential delegation to India in 2000. He served on the Recombinant DNA Advisory Committee of the U.S. National Institutes of Health, Washington, D.C.

kdronamraj@aol.com

Notes: