

6<sup>th</sup> World Congress on

# Cell & Stem Cell Research

February 29-March 02, 2016 Philadelphia, USA

## Connotation of life beyond molecular biology

Simon Berkovich  
George Washington University, USA

Modern science resolutely rejects the long-standing belief that understanding of life needs some 'vital' force besides fundamental physics concepts. However, an essential part of biological processes still cannot find a concrete physical explanation. So, physics that does not provide an explanation for biology is not just incomplete, it merely employs an incorrect paradigm. Therefore, right understanding of biology may help to straighten physics rather than vice versa. The essence of biology lies in information processing. Likewise, it is also supposed The physical world is made of information with energy and matter as incidentals. Scientific views often go in parallel with contemporary technologies; correspondingly, at different times living organisms were compared to mechanical apparatuses, hydraulic systems, clock devices, chemical factories, electrical machines, computers etc. Nowadays, the information revolution fosters cloud computing. This inspires to consider the Universe as an internet of things. Such kind of an arrangement is realized in the construction of Holographic Universe arising from our cellular automaton model of physics. Workings of interactive holography attain a clear explanation for the strangeness of quantum mechanics, particularly, for the most inconceivable property of non-locality. Further, in contrast to quantum particles, macromolecules can acquire a content addressable access to holographic memory, leading to the capabilities of sophisticated behavior. Thus, the Holographic Universe presents an operational framework for biological processes. Instruction sequences for biological objects include signals for information control and impacts for material actuations. Revealing a physical facility that could intervene in this process may provide a new approach to medical treatment.

## Biography

Simon Berkovich has received his MS degree in Applied Physics from Moscow Physical-Technical Institute (1960) and PhD in Computer Science from the Institute of Precision Mechanics and Computer Technology of the USSR Academy of Sciences (1964). He has several hundred publications in various areas of physics, electronics, computer science and biology. In 2002, he was elected as a Member of the European Academy of Sciences for an outstanding contribution to computer science and the development of fundamental computational algorithms. In 2014, he won the GWU Technology Transfer Innovation Competition. In 2015, he was awarded a status of Emeritus Professor.

[berkov@gwu.edu](mailto:berkov@gwu.edu)

## Notes: