PRESS RELEASE

March 11, 2016

To understand the origin of life, the Foundation for Applied Molecular Evolution in Alachua (FL) will award funds to seven research teams internationally, in a program made possible through the support of the John Templeton Foundation.

The Foundation for Applied Molecular Evolution (FfAME) announced today the results of an international competition that seeks to award over $5 million to researchers who will advance our understanding of the origin of life. The awards were made possible under a grant by the John Templeton Foundation.

The awardees are:

• Prof. Stephen Mojzsis, from the Department of Geological Sciences at the University of Colorado at Boulder. Prof. Mojzsis will lead a team of international scientists seeking to better constrain planetary environments on Earth 4 billion years ago, near the time when life emerged on Earth.

• Profs. Charles Carter, Rihe Liu, and Eric Brustad, of the Departments of Biochemistry and Biophysics, Chemical Biology & Medicinal Chemistry, and Chemistry, all at the University of North Carolina at Chapel Hill. Their team will combine combinatorial chemistry and messenger RNA display to understand interaction between proteins and nucleic acids on the early Earth.

• Prof. Andrew D. Ellington, of the Department of Molecular Biosciences at the University of Texas at Austin. Prof. Ellington's team will develop nucleic acid replicators with standard and non-standard backbones.

• Prof. Dr. George E. Fox and Maxim Paci, of the Departments of Chemical and Biomolecular Engineering and Biology and Biochemistry at the University of Houston. The Houston team will use dynamic combinatorial chemistry to develop an understanding of interactions between proteins and nucleic acids.

-- MORE --

• Prof. Andrej Luptak, of the Departments of Pharmaceutical Sciences, Chemistry, and Molecular Biology and Biochemistry at the University of California at Irvine. Prof. Luptak will use compartmentalization and diversity science to develop multi-turnover catalysis by RNA.

• Prof. Niles Lehman, of the Department of Chemistry at Portland State University. Prof. Lehman will work with Andrew Griffiths at the ESPCI Paris Tech, France, to understand the role of RNA-RNA interactions in the emergence of an RNA world,

• In Alachua, Prof. Steven Benner and Hyo-Joong Kim will develop the chemistry of mineral-RNA interactions to join the work done under the direction of Prof. Mojzsis with work with nucleic acids and proteins in other laboratories, and to understand the scope of RNA catalysis.

Competitors were challenged to offer new ideas to resolve “paradoxes” in geology, chemistry, and biology that make the “origins” problem generally inaccessible to normal, hypothesis-driven science. These include the apparent need for life to exist in water, coupled by the fact that molecules like RNA are degraded in water. Further, experience in the laboratory and the kitchen show that when energy is put into organic material, it devolves to give disorganized tars, not Darwinian systems. A third relates to the difficulty of getting productive catalysts without getting unproductive catalysts.

“Standard research to understand the origins of life have generally avoided confronting these problems,” remarked Steven Benner, Distinguished Fellow at the Foundation for Applied Molecular Evolution, which is managing the project. “These international teams will work together to combine the best geology, the best nucleic acid chemistry, the best protein science, and the latest instrumentation, to move the field beyond the point where we are ‘casting about’ to stumble across clues to life’s origins”.

Contact: Steven Benner 352 219 3570

Foundation for Applied Molecular Evolution

13709 Progress Boulevard, Alachua FL 32615

Tel 386 418 8085 Fax 844 259 6519

-- MORE --

About the Foundation for Applied Molecular Evolution

The FfAME was founded in 2001 as a non-profit research organization to addresses “big questions”, from the nature and extent of life in the cosmos to the molecular biology of human disease. FfAME scientists also use insights made by addressing big questions to solve practical problems, including the diagnosis and treatment of disease, the extension of healthy life spans in humans, and application of the molecular sciences, bioinformatics, and engineering to commerce.

Supported by philanthropy, proceeds of technology transfer, and grants and contracts from public and private organizations, the FfAME is one of the few non-profit, private scientific organizations in North Central Florida. Its accomplishments in technology include the development of materials to measure the load of viruses in infected patients, surveillance of public spaces for Ebola, norovirus, and other infectious agents, whole genome sequencing, and new catalysts for human therapy.

On the more exotic side, FfAME scientists perform “Jurassic Park” experiments that resurrect genes and proteins from now-extinct organisms, using these to understand the evolution of life on Earth in a changing ecosystem and environment. FfAME is a long-standing member of the NASA Astrobiology Institute, where it has contributed to the search for biology on Mars, Titan, and elsewhere in the Solar System.

FfAME is also committed to public outreach and education. The book: *Life, the Universe, and the Scientific Method,* teaches scientific methods by seeking answers to “big” questions such as: Does alien life exist? FfAME staff lecture on space exploration at Cape Canaveral and elsewhere, and public lectures across the country and around the world, all across the U.S. and as far away as Australia, China and Moscow.

About the John Templeton Foundation

The John Templeton Foundation is a non-profit organization based in Pennsylvania, founded by the late Sir John M. Templeton to explore “big questions” under the motto: “How little we know, how eager to learn.” In the life sciences, the John Templeton Foundation supports projects investigating the evolution and fundamental nature of life, human life, and mind, especially as they relate to issues of meaning and purpose. Projects come from a variety of disciplinary perspectives, including the biological sciences, neuroscience, archeology, and paleontology.