FOR IMMEDIATE PRESS RELEASE

Origins of Life: Experiment #1.x
by Adam Brown in collaboration with Robert Root-Bernstein
June 5 – July 2, 2014
Beall Center for Art + Technology at the Claire Trevor School of the Arts
University of California, Irvine
OPENING RECEPTION: Saturday, June 7, 2014, 2pm – 4pm

ADDRESS:
Beall Center for Art + Technology
University of California, Irvine
Claire Trevor School of the Arts
712 Arts Plaza
Irvine, CA 92697-2775

www.beallcenter.uci.edu

CONTACT:
Samantha Younghans-Haug
Programs Director
(949) 824-6206
email: syoungha@uci.edu

HOURS:
Tuesday - Saturday, 12PM – 6PM
Closed Sunday & Monday

The Beall Center for Art + Technology supports research and exhibitions that explore new relationships between the arts, sciences and engineering. Since opening in 2000, the Beall Center has presented over 50 exhibitions representing over 200 artists. It reaches over 5000 visitors per year, and offers educational opportunities through its tours, Family Day events and Robotics camps. The Beall Center produces exhibition catalogs and video documentations, and it partners with several community organizations in and around Orange County.

The Beall Center received its initial support from the Rockwell Corporation in honor of retired chairman Don Beall and his wife, Joan, the core idea being to merge their lifelong passions - business, engineering and the arts - in one place. Today major support is generously provided by the Beall Family Foundation.

BEALL Donald R. and Joan F. Beall Center for Art + Technology University of California, Irvine

Origins of Life: Experiment #1.x (2010-)
By Adam Brown in collaboration with Robert Root-Bernstein

"The aim of art is not to show how or why an effect is produced (that would be science) but literally to produce it." – E. O. Wilson

The *Origins of Life* series is a working performative installation and re-enactment of the famous experiments carried out by Stanley Miller and Harold Urey at the University of Chicago in the 1950′s.

Every culture has myths about the origin of life. Science has had a profound impact on these myths in its attempt to replace them with a rational account of origins. Darwin undermined the Biblical account of Genesis by introducing the concept of evolution by natural selection at the same time Pasteur proved the impossibility of spontaneous generation. How then did life on Earth arise? Scientists such as Haldane and Oparin in the 1920s and '30s proposed that life evolved over great periods of time through a series of stages that produced first simple organic molecules, then more complex ones, then self-catalytic ones, and finally organized modules from which the first cells could emerge. Unfortunately, such hypotheses had a good deal in common with the myths they were intended to replace; myths, since there was no direct evidence for any of these steps.

Around 1950, the physicist Harold Urey proposed that it might be possible to test such scientific stories by recreating the atmosphere of the Earth and adding an energy source such as lightning to the mix. A graduate student by the name of Stanley Miller heard one of Urey's talks on this subject and proposed to Urey that they carry out such a test. Urey was reluctant, but Miller convinced him that it would make a good Ph. D. thesis. Using the best knowledge about the Earth's primordial atmosphere available at the time, Miller set up an experiment in which methane, hydrogen, ammonia and water were mixed in the presence of an intermittent electrical discharge. Within days, the experiment yielded the amino acid glycine, and within a week, alanine and urea as well. No previous experiment had yielded even one amino acid, let alone several, so Miller's experiment represented a major breakthrough. He published his results in 1953 in the journal Science and it quickly became a scientific and public icon of origins of life experimentation.

Origins of life: Experiment #1 is a continuation of Miller's 1953 experiment. This experiment has only been replicated exactly once before (by Hough and Rogers, in 1956), and it yielded the same compounds as Miller's original. No one has ever run the experiment through multiple cycles of synthesis to see if, after several weeks or months, small peptides, sugars or other important compounds result. Moreover, the number of variations run on Miller's experiment is very limited, despite the fact that the primordial atmosphere was almost certainly not the one that he replicated in his experiment. And now a great deal is known about the atmospheres of other planets and their moons. Thus, there are a huge number of permutations of Miller's experiment that can fruitfully be run by making this into an "open source" experiment in which many people can contribute and participate.

Origins of Life: Experiment #1 is an embodiment of liminal form and praxis. It is neither entirely art nor entirely science but a combination free from disciplinarity. The point in placing the re-creation of Miller's experiment as an art installation is to engage the public in the ongoing

dialogue between scientific experimentation and its social meanings. The attempt to recreate the evolution of primordial life forms has implications that transcend science itself. Drawing the public into the process of experimentation forces each person to consider the meaning of origins for themselves, and asks them to question to what extent scientific knowledge can replace the origin myths it challenges.

The Artist gives special thanks to:
Maxine Davis – Atmospheric Chemist, MSU
Thomas Palazzolo and Thomas Hudson at the *Physics and Astronomy Machine Shop MSU*
Barry Tigner – PA Electronics Shop MSU
Scott Bankroff – Scientific Instrument Facility

Adam Brown

Adam Brown is an internationally recognized conceptual artist whose work incorporates art and science hybrids including living and biological systems, robotics, molecular chemistry and emerging technologies that take the form of installation, interactive objects, video, performance and photography. Brown's creative research is informed by a background in Intermedia, a philosophy that provides a framework for breaking down and combining different models of thought and bringing together disparate disciplines, leading to the establishment of new forms of research and creative activity. To this end, most of his creative and research endeavors are collaborative in nature.

His most recent project, The Great Work of the Metal Lover (with Dr. Kazem Kashefi) is an artwork that sits at the intersection of art, science and alchemy. The piece received an Honorary Mention and was exhibited at Ars Electronica 2012 and received an Award of Distinction from Vida 14.

Origins of Life: Experiment #1.x, is a working scientific experiment using simulated lightning, heat and primordial gases that has been repositioned as an art installation (with Dr. Robert Root Bernstein). The "open source" project, which invites contributions and participation from other scientists, builds on Miller's 1953 iconic experiment. In 2011 the piece was selected as part of Ars Electronica and the Synth-ethic exhibition in Vienna. In 2012, Brown and Root-Bernstein received a grant from the National Science Foundation to continue this project.

His earlier work Bion (with Dr. Andrew Fagg) makes reference to an individual element of primordial biological energy identified as "orgone" by the scientist Wilhelm Reich (1897-1957). The interactive installation is a sensor network composed of more then one thousand, mass-produced, three-dimensional glowing and chirping autonomous robots called bions. In 2006 Brown was selected as an emerging artist to exhibit this piece in Archival to the Contemporary, Six Decades of the Sculptors Guild and that same year it was also selected for SigGraph in Boston. In 2010 the work appeared in the Brazilian Biennial Emoção Art.ficial 5.0 in Sao Paulo.

Brown's work has been written about widely in publications such as the New York Times, Wired, Nature, Sculpture Magazine, Washington Post, Forbes, The Proceedings of the National Academy of Sciences (PNAS), Discover and the Huffington Post.

Brown currently is an Associate Professor at Michigan State University where he created a new area of study called Electronic Art & Intermedia. He is also a Research Fellow at the Institute for Digital Intermedia Arts at Ball State University, and serves as an Artist in Residence for the Michigan State University BEACON (Bio/Computational Evolution in Action Consortium) project, funded by the NSF. Previously he was an Associate Professor at the University of Oklahoma, where he developed an electronic art program called Symbiotic Media. He received his BA, MA and MFA from the University of Iowa.

Robert Root-Bernstein

Bob Root-Bernstein is a physiologist, cognitive psychologist, historian and artist at Michigan State University (www.msu.edu/~rootbern). He became one of the first MacArthur Fellows (1981-1986) while working as a post-doctoral fellow for Jonas Salk at the Salk Institute for Biological Studies. His scientific research involves the origins and evolution of metabolic control systems, autoimmune diseases, and the nature of scientific creativity. He also studies, lectures and consults on science-arts interactions. He exhibits his artwork both in group and solo shows and collaborates with the VIDA award-winning transmedia artist Adam Brown (http://adamwbrown.net). Bob has written four books, including Discovering (Harvard University Press, 1989) and Sparks of Genius (Houghton Mifflin, 1999) and is at work on two more, one on artists and musicians as scientists and inventors, and the second on modern scientists as visual artists. He is an editorial board member of the journal LEONARDO, overseeing a special section on “artscience”.

Additional Info

Origins of Life: Experiment #1.x on Vimeo: http://vimeo.com/32106116
Artist Website: http://adamwbrown.net/