

New Evolution in Action Gallery Opens at MSU Museum

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Evolution is happening around us in an observable way: that is the focus of a new series of exhibits at the Michigan State University (MSU) Museum.

The MSU Museum has a new gallery, Evolution in Action, that explores evolution of biological systems and technologies – evolution in living things, and also in computers and engineering. A new exhibit, “50,000” reveals an ongoing experiment where scientists have observed bacteria growing, competing, and evolving for 50,000 generations in only 23 years.

In 1988, Richard Lenski, Hannah distinguished professor of microbial ecology, and his research team began an experiment of *E. coli* bacteria: from a single bacterium – the common ancestor – Lenski started 12 populations of bacteria in separate flasks. The populations began evolving in separate but identical environments for over 50,000 generations. Now, for more than 23 years, researchers have followed the growth, reproduction and evolution of these bacteria. The bacteria in all 12 populations have become bigger and faster growing. A major finding: one of these populations has even evolved the ability to consume a new food resource. Researchers, including Lenski and a number of MSU graduate and undergraduate students, investigate how these bacteria are successfully competing and winning as they evolve.

“This research, and its presentation to the public through educational exhibits, challenges us to think about evolution in new ways, as it happens around us,” notes Gary Morgan, MSU Museum director.

“50,000” was developed in partnership with the new BEACON Center for the Study of Evolution in Action based at MSU. Here, researchers approach evolution in an innovative way, bringing together biologists, computer scientists and engineers to study evolution as it happens and apply this knowledge to solve real-world problems.

“Diseases develop resistance to antibiotics. Animal behavior changes in response to climate change. Computer viruses change nearly every day, making antiviral software quickly out-of-date,” said Erik Goodman, BEACON Center director and MSU professor of electrical and computer engineering. “The biological world is full of complex interactions and data, and BEACON unites evolutionary biologists and computer scientists more closely than ever before.”

Another Evolution in Action exhibit in the west gallery explores the evolution of social behaviors in hyenas as they cooperate, form coalitions, and compete with lions. Meanwhile, future exhibits could include topics such as evolving robots that develop ever-more sophisticated collaborative behavior.

For more information on this and other MSU Museum exhibits, visit <http://museum.msu.edu/?q=exhibit>.

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