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## **Evolutionary Genomics, Inc. Receives \$100,000 Grand Challenges Explorations Grant for Innovative Global Health Research by Dr. Walter Messier.**

Evolutionary Genomics, Inc. (EG) announced today that it has received a US\$100,000 Grand Challenges Explorations grant from the Bill & Melinda Gates Foundation. The grant will support an innovative global health research project conducted by Dr. Walter Messier, EG's Chief Technology Officer, titled "Evolutionary-Based Host Target Therapeutic Approach Sidesteps HIV/AIDS Drug Resistance".

Dr. Messier's project is one of 104 grants announced by the Gates Foundation for the first funding round of Grand Challenges Explorations, an initiative to help scientists around the world explore bold, new solutions for health challenges in developing countries. The grants were provided to all levels of scientists in 22 countries and five continents.

To receive funding, Dr. Messier showed in a two-page application how his idea falls outside current scientific paradigms and could lead to significant advances in global health if successful.

A fundamental issue for treatment of HIV/AIDS is that within weeks of administering a new AIDS drug, mutant resistant viruses can be found in treated patients. EG's unorthodox approach to address this problem has been to look to the chimpanzee model for solutions. Generally, humans and chimpanzees are susceptible to the same illnesses. However, it is well known that chimpanzees do not develop AIDS when infected with HIV-1. Chimpanzees have adapted to the HIV-1 virus and are able to limit the effects of viral infection, in spite of the fact that HIV-1 also mutates rapidly in chimpanzees. EG scientists believe that identification of chimpanzee AIDS suppression mechanisms will permit the development of potent drugs that have a novel mechanism of action and will not lose efficacy as the virus mutates. EG's ultimate objective is to develop drugs to treat HIV-1 infected patients that will prevent progression to AIDS and that may potentially work in combination with other drugs to completely eliminate the virus. The hypothesis EG is testing is that chimpanzee HIV suppression is the result of molecular adaptations in certain proteins. EG scientists, led by Dr. Messier, have identified proteins that have undergone adaptive evolution in chimpanzees and have characterized how these

adaptations have altered the performance of the adapted chimpanzee proteins such that they suppress HIV production. EG plans to screen for potential drug compounds that will interact with the equivalent human proteins to achieve the same performance and virus suppression. This project will build on previous work, in which EG scientists, in collaboration with Dr. Charles Dinarello of the University of Colorado Health Science Center, showed that one particular chimpanzee protein, when transfected into human cells, suppresses HIV-1 production up to 80% compared to control human cells. Like all EG's previous work, this project will take place without any experimentation on, or direct use of, chimpanzees.

Dr. Messier's use of techniques and algorithms derived from the field of molecular evolution led to his development of EG's Adapted Traits Platform, which EG has successfully applied to increasing yields of corn rice and wheat.

"We are grateful to the Gates Foundation for the opportunity to move this research forward, as we feel that ultimately, our approach has real potential for novel therapeutics for HIV/AIDS", said Ginny Orndorff, EG's President and CEO.

"I congratulate each individual who took the initiative to share their idea with us to help fight the world's most serious diseases," said Dr. Tachi Yamada, president of the Gates Foundation's Global Health Program. "The number of creative approaches we received exceeded our highest aspirations. Projects from this initial pool of grants have the potential to transform health in developing countries, and I will be rooting for their success."

### **About Grand Challenges Explorations**

Grand Challenges Explorations is a five-year \$100 million initiative of the Gates Foundation to promote innovation in global health. The program uses an agile, streamlined grant process – applications are limited to two pages, and preliminary data are not required. Proposals are reviewed and selected by a committee of foundation staff and external experts, and grant decisions are made within approximately three months of the close of the funding round.

Applications for the second round of Grand Challenges Explorations are being accepted through November 2, 2008, and topics for the third round will be announced in early 2009. Grant application instructions, including the list of topic areas in which proposals are currently being accepted, are available at [www.gcgh.org/explorations](http://www.gcgh.org/explorations).

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