Tulane University researchers win grant to develop "True Blood" for mosquitoes

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Tulane University has been awarded a $100,000 Grand Challenges Explorations grant by the Bill & Melinda Gates Foundation to develop an artificial mosquito diet so female insects in research colonies don"t have to feast on human or animal blood to reproduce.

The Grand Challenges Explorations (GCE) funds individuals worldwide to explore ideas that can break the mold in solving persistent global health and development challenges. The Tulane project is one of more than 50 Grand Challenges Explorations Round 15 grants announced today by the Bill & Melinda Gates Foundation.

To receive funding, principal investigator Dawn Wesson, associate professor of tropical medicine at Tulane University School of Public Health and Tropical Medicine, demonstrated in a two-page online application a bold idea in one of five critical global heath and development topic areas. The foundation will be accepting applications for the next GCE round in March 2016.

Wesson and doctoral student Sam Jameson will be working on an artificial diet that researchers studying vector-borne diseases like malaria, West Nile or dengue can use to grow or maintain adult mosquito colonies where fresh blood isn"t available. This will allow scientists to breed large numbers of mosquitoes for research purposes.

“Adult females need blood to produce eggs,” Wesson says. “It"s a really good source of protein for egg production. So the key is finding some type of protein that will still result in viable egg production, but that is also appetizing to mosquitoes. The other key is to make it inexpensive, not reliant on refrigeration and shelf stable for months to years.”

Grand Challenges Explorations is a $100 million initiative funded by the Bill & Melinda Gates Foundation. Launched in 2008, over 1,160 projects in more than 60 countries have received GCE grants. The program is open to anyone from any discipline or organization. The initiative uses an agile, accelerated grant-making process with short two-page online applications and no preliminary data required. Initial grants of $100,000 are awarded twice a year. Successful projects have the opportunity to receive a follow-on grant of up to $1 million.