The MRF Board is pleased to announce that the 2014 - 2015 grant application process is open. The deadline is October 24, 2014.

You can download the application, cover page and budget worksheet now to start the process.

The Mosquito Research Foundation funds a broad spectrum of research topics

The foundation's priorities for this round will include the following topics:

- Supporting young researchers who are building their careers in this area
- Facilitating projects that help to create and nurture relationships among a wide variety of organizations. These organizations may include:
  - Municipalities and water districts
  - Environmental organizations
  - Regional and national organizations (both public and private)
- Research that demonstrates and/or enhances the environmentally sustainable profile of mosquito and vector control districts
We have supported a vast breadth of research topics and are once again anticipating a very creative response to this RFP from researchers in the field. Here is just a small sampling of the projects previously and currently funded.

- Impact of temperature on mosquito-borne viruses
- Evaluation of molecular targets and amino acids for adulticide and larvicide development, respectively
- Assessment of mosquito traps
- Vector control and management
- Mosquito genomics

Grantee Spotlight: Mary Beth Danforth, UC Davis

Mary Beth Danforth, as a member of Prof. William Reisen's team, is one of MRF's recent grant recipients for her work on the "Impact of temperature on the transmission of West Nile virus by Culex mosquitoes." Ms. Danforth first became interested in epidemiology while working in the biotechnology division at the California Animal Health and Food Safety Laboratories at the University of California Davis. During the H1N1 flu outbreak of 2009, she was able to assist in developing a new viable diagnostic test for swine and a wide range of other animals. Ms. Danforth then assisted in implanting the diagnostic test to monitor California's poultry and livestock.

"I really enjoyed putting my scientific knowledge to work to help protect the animals and people in my state," Mary Beth Danforth recalled.

Ms. Danforth enrolled in the Epidemiology Graduate Group at UC Davis to pursue a PhD. She states, "Early on in my coursework, I was fascinated by lectures given by Dr. Chris Barker and Dr. Bill Reisen on their work in vector epidemiology: the field seemed like the perfect combination of my interests in human health, animals, and the environment."

Why Mosquitoes?

Mary Beth Danforth decided to focus her research on mosquitoes for the following
reasons. As they say, the mosquito is the world’s deadliest animal. They can transmit a large variety of pathogens, including viruses, protozoans, and filarial nematodes. All of which are detrimental to human and animal health in both developed and developing nations. In order to effectively combat mosquitoes, one must understand the local environment (ground cover, climate, and human impacts are just a few). The variability of these crucial features within a town or neighborhood compounds the complexity of dealing with mosquitoes. Mary Beth also admits to a small amount of personal satisfaction in studying an insect that has “driven her crazy many times”.

**Research Focus**

It is Ms. Danforth’s career goal to use her epidemiological research to improve public health in this country. One of the challenges laboratory-based science faces is the difficulty of accurately replicating real world conditions. The variables are too numerous and many are unaccounted for. This results in occasionally implementing public health decisions without extremely accurate data.

One such example is temperature. Previous studies of West Nile virus transmission held this variable constant. Ms. Danforth's research examines the effect of typical daily temperature fluctuations on the time it takes for an infected mosquito to begin transmitting the virus.

Ms. Danforth states that through this research, "I hope to build a more accurate understanding of how West Nile is transmitted in nature."

The study of the effects of temperature on the transmission of mosquito-borne diseases is important. Mosquitoes are ectothermic, meaning that the external temperature drives all of their biological processes. This includes the rate at which it takes a pathogen to move through their bodies and be transmissible. Mary Beth Danforth hopes to improve the ability to predict when West Nile virus will emerge and what the risk will be to humans in California, as well as places with similar climates. She also strives to spark research into the effects of cycling temperatures on other vector-borne diseases.

**The Emerging Researchers Initiative**

The Board of the Mosquito Research Foundation has launched the Emerging Researchers Initiative that will exclusively invest in the future of mosquito control research. Researchers and students considering entering the field often encounter daunting and sometimes insurmountable obstacles to launching a career in the field. For example, a lack of research funding, particularly for novel and unproven research, can lead researchers to enter other scientific fields. This ultimately shrinks the pool of scientists for research and development labs and for testing labs in the organized mosquito control
districts. MRF will be investing in efforts to aid emerging researchers to help build a future pool of staff in the industry. We will keep you posted on this exciting initiative as it evolves.

**Look for MRF at the following events over the next six months!**

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<th>Event Name</th>
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<td>Northwest Mosquito &amp; Vector Control Association</td>
<td>October 8-10, 2014</td>
<td>Coeur d'Alene, ID</td>
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<td>Florida Mosquito Control Association</td>
<td>November 10-12, 2014</td>
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<td>Northeast Mosquito Control Association</td>
<td>December 8-10, 2014</td>
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<td>Mid-Atlantic Mosquito Control Association</td>
<td>January 13-15, 2015</td>
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<td>MVCAC Annual Meeting</td>
<td>January 25-28, 2015</td>
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<td>AMCA Annual Conference</td>
<td>March 29 – April 2, 2015</td>
<td>New Orleans, LA</td>
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We want to thank a few of our new and renewing donors.

Since July 1, 2014:

- Alameda County MAD
- Antelope Valley MAD
- Madera County MVCD
- San Joaquin County Mosquito & Vector Control District
- Texas Agrilife Research
- Turlock Mosquito Abatement District

Sincerely,

Board of Directors