Testimony of
Frank G. Zalom, PhD, President
Entomological Society of America
On
Fiscal Year 2015 Appropriations for the National Institutes of Health and Centers for Disease Control and Prevention
Submitted to the
Appropriations Subcommittee on Labor, Health and Human Services, Education, and Related Agencies
United States Senate
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The Entomological Society of America (ESA) respectfully submits this statement for the official record in support of funding for insect-borne disease research at the U.S. Department of Health and Human Services (HHS). ESA requests a robust fiscal year (FY) 2015 appropriation for the National Institutes of Health (NIH), including increased funding for insect-borne disease research at the National Institute of Allergy and Infectious Diseases (NIAID). The Society also supports increased investment in the core infectious diseases budget and the global health budget within the Centers for Disease Control and Prevention (CDC) in order to fund scientific activities related to vector-borne diseases.

Advances in the biological sciences, including the field of entomology, help to address some of our most pressing societal needs related to environmental and human health. Certain species of insects carry, spread, and transmit an array of infectious diseases that threaten populations across the globe, including those in the United States as well as U.S. military personnel undertaking missions abroad. Insect-borne diseases can present an especially challenging health problem; few vaccines have been developed against them, and insects are often difficult to control and can develop resistance to insecticides. The risk of emerging infectious diseases grows as global travel becomes easier and environmental factors continue to change. For example, West Nile virus, which is transmitted by mosquitoes and was not present in the U.S. before 1999, infected 5,674 Americans in 2012.\(^1\) Entomological research to understand the biological relationship between insect vectors and the infectious diseases they carry – such as dengue, malaria, West Nile virus, and Lyme disease – can significantly contribute to our ability to monitor and predict outbreaks, prevent disease spread and transmission, and more reliably diagnose and treat infection. Given the important role that insect vectors play in impacting human health, ESA urges the subcommittee to support vector-borne disease research programs that incorporate the entomological sciences as part of a comprehensive approach to addressing infectious diseases.

\(^1\) CDC DVBD factsheet: [http://www.cdc.gov/ncezid/dvbd/pdf/dvbd_factsheet.pdf](http://www.cdc.gov/ncezid/dvbd/pdf/dvbd_factsheet.pdf)
NIH, the nation’s premier medical research agency, advances human health by funding research on basic human biology and disease and the development of prevention and treatment strategies. In FY 2012, about 84 percent of NIH funding was competitively awarded to scientists at approximately 2,500 universities, medical schools, and other research institutions across the nation. As one of NIH’s 27 institutes and centers, NIAID conducts and supports fundamental and applied research related to the understanding, prevention, and treatment of infectious, immunologic, and allergic diseases. One example of NIAID-funded research on infectious diseases is a recent study examining the mechanism by which certain species of mosquitoes known to transmit dengue and malaria are attracted to humans. The scientists discovered that specific types of nerve cells in the insects act as sensitive detectors of human odors. With this knowledge, the researchers were able to identify safe and natural chemical compounds with the potential to neutralize or overwhelm the specific insect nerve cells, a discovery that could have implications for the control of mosquitoes and their associated diseases.  

In another recent study supported by NIAID, researchers determined that live, disease-free ticks can be used as a safe tool for testing for the presence of Lyme disease bacteria in patients who have completed antibiotic therapy. To ensure funding for future groundbreaking projects like these, ESA requests increased funding for NIAID and encourages the committee to support insect-borne disease research at NIH.

CDC, serving as the nation’s health protection agency, conducts science and provides health information to prevent and respond to infectious diseases and other global health threats, whether naturally arising or related to bioterrorism. Within the core infectious diseases budget of CDC, the Division of Vector-Borne Diseases (DVBD) seeks to protect our nation from the threat of viruses and bacteria transmitted primarily by mosquitoes, ticks, and fleas. DVBD’s mission is carried out by a staff of experts in several scientific disciplines, including entomology. For example, among the activities supported by DVBD are the ArboNET surveillance system for mosquito-borne diseases and the TickNET system for tick-borne diseases. ArboNET is a nationwide network that monitors West Nile virus and other diseases through activities such as the collection and testing of mosquitoes, and TickNET is a partnership between 16 states to track tick-borne-diseases like Lyme disease and test preventions. Furthermore, a component of CDC’s global health budget supports activities on parasitic diseases and malaria; this includes the maintenance of a global reference insectary that houses colonies of mosquitoes from around the world to be used by the agency for studies on malaria transmission. Given the important contributions of CDC, ESA requests that the committee provide increased support for CDC programs addressing vector-borne diseases and malaria.

ESA, headquartered in Annapolis, Maryland, is the largest organization in the world serving the professional and scientific needs of entomologists and individuals in related disciplines.

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Founded in 1889, ESA has nearly 7,000 members affiliated with educational institutions, health agencies, private industry, and government. Members are researchers, teachers, extension service personnel, administrators, marketing representatives, research technicians, consultants, students, pest management professionals, and hobbyists.

Thank you for the opportunity to offer the Entomological Society of America’s support for HHS research programs. For more information about the Entomological Society of America, please see http://www.entsoc.org/.