September 22, 2014

Dan Correa
Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Ave NW
Washington, DC 20504

RE: Strategy for American Innovation
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Dear Mr. Correa:

Please accept the following comments submitted on behalf of the Entomological Society of America (ESA) in response to the Request for Information on the upcoming update to the Strategy for American Innovation.

ESA is the largest organization in the world serving the professional and scientific needs of entomologists and individuals in related disciplines. Founded in 1889, ESA has almost 7,000 members affiliated with educational institutions, science agencies, private industry, and government.

Overarching Questions

(1) What specific policies or initiatives should the Administration consider prioritizing in the next version of the Strategy for American Innovation?

Increased investment in pollinator health research should be a stated priority in the next version of the Strategy for American Innovation because of the importance of pollinators to the nation’s food security and economy. According to U.S. Department of Agriculture (USDA) estimates, pollination by managed honey bees is responsible for over $15 billion in increased crop value per year; the value increases to $29 billion per year when other pollinators are included. In recent years, pollinator populations have been declining in the U.S., but there remains an incomplete understanding of the diverse and complex factors that threaten the health of pollinators.

Earlier this year, the White House issued a Presidential Memorandum creating a federal strategy to promote the health of honey bees and other pollinators. As part of this initiative, the President directed the establishment of a Pollinator Health Task Force composed of representatives from several federal agencies. The Task Force was asked to develop a National Pollinator Health Strategy, including a Pollinator Research Action Plan.

We believe the recommendations of the forthcoming Research Action Plan should seek to incorporate input from the stakeholder community, including relevant professional scientific societies. The Research Action Plan should be considered a first step in the necessary national prioritization of pollinator health research; the next step should involve strategic, increased investment in this area across the appropriate federal agencies. The Strategy for American Innovation...
Innovation should highlight pollinator health research needs and begin to outline a plan to invest in and coordinate multi-agency efforts to address this challenge.

**Innovation Trends**

*(7)* What emerging areas of scientific and technological innovation merit greater Federal investment, and how can that investment be structured for maximum impact?

Over the past few decades, a resurgence of vector-borne infectious diseases, such as dengue, Chikungunya, West Nile Virus, and Lyme disease has become a growing threat to human health in the United States. In addition, new and emerging vector-borne diseases, including huanglongbing disease of citrus and leaf roll and red blotch disease of grapes, are also impacting the agricultural industry.

Greater federal investment is needed to support the development of innovative tools and strategies for combating vector-borne diseases. Specifically, support for new vector-borne research is needed to understand the global factors fostering emerging, resurgent, and new diseases; to develop scientifically based models to track and predict the spread of vectors and disease; to examine the biology and ecology of disease vectors; and to test new methods of prevention, control, and therapeutics.

For maximum impact, investing in an initiative to address vector-borne diseases across the federal government should establish greater partnering and coordination between federal health, agricultural, and environmental agencies.

**Skilled Workforce Development**

*(13)* What emerging areas of skills are needed in order to keep pace with emerging innovations or technologies? What are successful models for training workers with these skills to keep up with emerging innovations?

To keep pace with the growing need to address vector-borne diseases, a strong pipeline of scientists trained in medical entomology is required. The outbreak of West Nile virus in the late 1990’s and early 2000’s illustrated the importance of maintaining support for experienced medical entomologists at the federal, state, and local level, as well as the need for Centers for Disease Control and Prevention (CDC)-sponsored training programs. Federal investment by CDC and the National Institutes of Health should support training programs at institutions of higher education to attract and train medical entomologists.

Furthermore, as pest-related challenges become increasingly diverse and complex, workforce development for the next generation of Integrated Pest Management (IPM) scientists and practitioners is critical to ensure human health and environmental protection. Despite support from the industry and the IPM research and extension community, no specific IPM training plan or funding exists to address this need. As recommended by the October 2013 USDA National Road Map for Integrated Pest Management, there should be a Federal Agency IPM Training Program in order to develop this cadre of trained individuals with enhanced management skills. Furthermore, there
should be federal support for IPM education programs in academia to train the next generation of IPM scientists and practitioners.

Entomologists with expertise in insect identification are needed to accurately recognize pests that pose potential threats to human health, agriculture, and the environment. This is critical not only for monitoring the appearance of insect vectors of disease, but also for detecting invasive species with the potential to devastate crops, rangelands, and forests, resulting in significant economic impacts. In addition to supporting training programs in this area, resources must be provided to maintain and provide trainees access to biological specimen collections.

**National Priorities**

(24) Which new areas should be identified as “national priorities,” either because they address important challenges confronting U.S. security or living standards, or they present an opportunity for public investments to catalyze advances, bring about key breakthroughs and establish U.S. leadership faster than what might be possible otherwise?

Broadly, the ability to secure a safe and nutritious food supply should be identified as a national priority. To meet this growing societal challenge, the federal government must invest in and coordinate multi-agency efforts 1) to protect pollinators that are critical to the economy and to the production of some of our most nutritious food crops, 2) to prevent and control the spread of invasive insect species and pathogens that can destroy food crops, and 3) to develop and implement advanced Integrated Pest Management and biologically-based control practices.

In addition, the need to track, predict, and address the threat of emerging infectious diseases – including those spread by insect vectors – should also rise to the level of “national priority.” With an increasingly globalized world and a warming climate, infectious diseases cannot be treated as a problem only affecting other countries. To position the United States as a leader in providing innovative solutions to these diseases worldwide as well as to ensure the nation is properly prepared for natural and manmade threats to the homeland, a comprehensive federal strategy for multi-agency investment in emerging infectious diseases is required.

Sincerely,

Frank Zalom, Ph.D.

President, Entomological Society of America
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