# INSECT SCIENCE & PUBLIC POLICY

ENTOMOLOGICAL SOCIETY OF AMERICA
SHARING INSECT SCIENCE GLOBALLY

## DISEASE PREVENTION

*Entomological research is critical to limit and prevent the spread of many arthropod-borne diseases.*

- More than 100 vector-borne pathogens cause disease in people globally, more than a quarter of which are present in the U.S., according to the U.S. Centers for Disease Control and Prevention (CDC).
- Each year, nearly half a million Americans are diagnosed and treated for Lyme disease, caused by bacteria transmitted through tick bites.
- Invasive *Aedes* mosquitoes are now widespread across the U.S. and threaten to set off outbreaks of dengue, chikungunya, Zika, and other diseases. *Anopheles* mosquitoes spread malaria and are found in more than 30 states. West Nile virus is spread by *Culex* mosquitoes, found in all 50 states.

## FOOD SECURITY

*Entomological research plays a primary role in increasing crop yields while protecting the environment and ensuring national and global food security.*

- The U.N. estimates the world's population will grow to 9.7 billion by 2050.
- Pollinators like bees provide over $200 billion in economic value to global agriculture and contribute to the production of an estimated 70% of all the food we eat. Entomologists aim to fully understand the complex challenges faced by bees and the diverse factors that endanger bee health.

## MILTARY READINESS

*Entomological research keeps U.S. military personnel safe from insect-borne diseases.*

- Malaria, dengue, typhus, yellow fever, leishmaniasis, and other major diseases have affected the health and readiness of U.S. troops in every major conflict since the Civil War.
- Insects have caused more deaths in wars than conventional weapons.

## BIOLOGICAL RESEARCH

*Many genetic technologies are achieved by studying insects.*

- The i5k Initiative is sequencing the genomes of 5,000 insects and other arthropods to improve our ability to manage arthropods that threaten our health, food supply, and economic security.
- Pest suppression technologies that reduce populations or keep pests from reproducing are critical components of maintaining public health, food security, and economic stability.

## HOUSEHOLD PESTS

*Entomological research underpins management of pests in homes, schools, restaurants, and beyond.*

- The U.S. has seen an alarming resurgence of bed bugs due to increased resistance to pesticides, increased human travel, and a lack of public knowledge about bed bug control. One of most frequently visited EPA webpages is "Do-it-yourself Bed Bug Control."
- According to the EPA, cockroach droppings and shed skin can trigger asthma and allergic reactions.

## MUSEUM COLLECTIONS

*Insect collections in museums are treasure troves of knowledge for many uses.*

- Museum collections support identification services and help experts determine whether exotic insects intercepted by Homeland Security and the U.S. Department of Agriculture are native or invasive species, and if they are pests.
- Collections can also help enable the identification of beneficial insects that can be introduced as natural enemies to invasive pests.

*The **Entomological Society of America** (ESA) is the largest organization in the world representing entomologists and individuals in related disciplines. Founded in 1889, ESA is a not-for-profit professional society with more than 7,000 members affiliated with educational institutions, private industry, government agencies, and museums. ESA's public and science policy initiatives focus on the importance of entomology in a variety of societal challenges. Learn more at [www.entsoc.org](http://www.entsoc.org).*

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