



An Entomology Agenda to Improve the Human Condition



Paradoxically, insects are arguably the most dangerous yet beneficial creatures on the planet. While certain insects are responsible for spreading deadly diseases, destroying crops, and damaging property, others are necessary for life on Earth due to their roles as pollinators, decomposers, and providers of other natural services.

Entomologists have the unique ability to enhance the quality of human life while simultaneously protecting the environment and genetic biodiversity. Medical entomologists are discovering ways to mitigate insect vectors of diseases such as malaria, which is responsible for the death of one child each minute according to the World Health Organization. Other entomologists who study interactions between insects and plants are improving food security by protecting crops and are preserving natural habitats by hindering invasive species that are increasingly being spread by international trade and climate change.

Since insects do not respect national borders, the best approach for addressing insect-related challenges is through collaborative, international efforts. The success of the long-term program to eradicate screwworms from the U.S.-Canadian border to the southern border of Panama is just one of many examples.

As the largest insect-science society in the world, the **Entomological Society of America (ESA)** is leading a global initiative to engage and empower other entities worldwide to take on grand challenges we face in the coming decades. The effort is bringing together top scientists, policymakers, industry groups, NGOs, funders, and other organizations to create alliance-based coalitions to implement sustainable solutions to some of the world's insect-based problems.

The initial project in 2017 will focus on the *Aedes aegypti* mosquito—which transmits yellow fever, dengue, chikungunya, and other diseases—and how it can be reduced and sustainably managed in the Americas. Collaborative, multidisciplinary efforts are now underway and will culminate during the next International Congress of Entomology (ICE)—an event held once every four years—that will take place in Orlando, Florida in 2016. The aim is to assemble an international coalition that has expertise on modern mosquito management systems, standing with local authorities to implement these systems, and the organizational persistence to continue the program for decades into the future.

This initiative represents a paradigm shift, enabling members of the scientific community to become proactive partners in leading solutions to global problems. Future grand challenges will focus on building coalitions to increase agricultural production sustainably in Africa, tracking and preventing invasive species around the world, and protecting and improving the health of pollinators and other beneficial insects.

The Entomological Society of America will lead this collaborative effort by building partnerships and sustainable funding and implementation models. ESA invites entomological societies and other entities worldwide to take part in these efforts. For more information, please visit www.entomologychallenges.org.



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Board of Advisors

As the largest insect-science society in the world, the Entomological Society of America is leading a global initiative to engage and empower other entities worldwide to take on Grand Challenges we face in the coming decades to which entomology can make a unique and powerful contribution. Our Board of Advisors brings together esteemed individuals from different disciplines and perspectives to advise us on the direction and strategy of the Grand Challenges initiative.



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