

## **Department of Entomology Draft Strategic Plan 2014 – 2019**

The 2014 – 2019 strategic plan builds on our previous plan and focuses on priorities as measured by gaps, critical issues and opportunities as we deliver on our traditional mission responsibilities in learning (teaching), engagement (extension and outreach) and discovery (research), and now our specific interest in international activities highlighted in a separate section on globalization. The original plan was developed in 2002 and revised in 2004 and 2009 to align with new College and University strategic priorities. We revised our discovery research statements to reflect recent changes in our core discovery mission (see Research Signature Areas section for details). The fundamental focus of our engagement and learning missions remain substantially the same, however new challenges and opportunities are recognized and embedded in this draft. Growth in international activities is now captured in a new section on globalization.

### **Mission**

To improve the quality of life in the state, nation and the world by advancing scientific knowledge through the development and application of arthropod and nematode science.

### **Vision**

To be a leader recognized worldwide for the solutions and discoveries generated through the application of science focused on arthropod and nematode biology.

### **Core Values**

- Be a leader in entomological science
- Encourage the highest standards of ethics and citizenship
- Operate in an open, objective, and inclusive environment
- Foster a community of scholars committed to excellence and teamwork
- Promote the synergism that comes from interdisciplinary interactions
- Value our people
- Embrace and promote diversity in people, cultures, ideas
- Actively share and disseminate our knowledge widely

## **Learning**

Goal: Provide a high quality educational experience, resources and mentoring to allow students to discover, explore and pursue their interests in Entomology and develop intellectually, socially and professionally to their fullest potential.

Expected Outcomes:

1. Students receive a superior and well-rounded education
2. Curricula that meet the evolving needs of our students and gives them a competitive advantage
3. Significant contribution to University core outcomes by providing high quality and engaging instruction in the areas of Science, Technology and Society
4. A multidisciplinary Forensic Science program that also appeals to non-science majors
5. Refinement of instructor techniques and integration of more active learning into classes
6. Growth in interest in entomology as a career and number of new majors

## **Engagement - Extension**

Goal: Effectively address the Extension and outreach needs of society both in the U.S. and abroad through education, partnerships, and leadership in knowledge and technology transfer.

Expected Outcomes:

1. Development of environmentally, economically, and socially sustainable best management practices (BMP) that meet current, emerging and future pest related challenges
2. Engagement with stakeholders, end-users, policy makers, and the general public
3. Implementation and adoption of the best management practices
4. Impacts that will be evaluated and measured

## **Engagement - Outreach**

Goal: Strengthen public's understanding and appreciation of the role of entomology in meeting society's critical needs

Expected Outcomes:

1. Increased public engagement with insects, insect science and interactions with the department
2. Teachers incorporating insect science into their curriculum
3. Purdue students know and appreciate Purdue Entomology
4. A staff succession plan for Entomology Outreach successfully implemented

## **Discovery**

Goal: Enhance and maintain nationally and internationally acclaimed research and development programs in arthropod and nematode pest management, arthropod molecular biology and functional genomics, and environmental and evolutionary entomology.

Expected Outcomes:

1. A pest management program emphasizing fundamental mechanisms underlying insect host interactions, and resulting in practical and useful knowledge and applications at home and abroad
2. National leadership in the application of arthropod and nematode molecular genetics and genomics for fundamental scientific discovery and solving applied problems
3. National leadership in ecological and environmental biology focused on biodiversity, spatial biology, environmental indicators and ecosystem services
4. Stronger integration of research into teaching at the undergrad and grad levels

## **Globalization**

Insects and efforts to manage their impacts knows no borders, and now in this time of lightning fast travel and vast international trade, a great many entomology-related problems arise, from invasive species to new insect-borne diseases entering our borders. We often lose sight of the fact that nearly all of the important American crops are imports from foreign lands, as are the insects that rob our harvests. There is very little that entomologists do that does not transcend borders, whether it be in systematics or molecular biology. The international arena is vital to understand because of growing foreign markets, and in turn, our students need to be familiar with the important questions and issues.

International entomology is a rich source of new ideas, not only in research and teaching, but equally in Extension: here lies untold opportunities to give our students and faculty new opportunities and a highly valuable practical, as well as intellectual education. Perhaps the overwhelming issue is a challenge facing the world, namely how to feed two billion more people that will join us on earth during the next 35 years—otherwise known as the challenge of ‘food security.’ For many crops, insects are the number one cause of diminished yields, save for

drought, both before harvest and after harvest. Purdue Entomology has taken a lead position in promoting simple, low-cost post-harvest storage technologies that poor people can afford and will use to increase their food supplies and boost their incomes when they sell their crops in the market. There are also international initiatives that focus on crop protection and capacity building. Entomology is on the cutting edge of international entomology, and it hopes to stay there.

It is in this context that the department has decided to raise the visibility of our international activities and cast them as a featured component under the rubric of globalization.

Globalization Goal: Increasing international presence and collaborations for Entomology in all three mission areas of discovery, engagement and learning

Expected Outcomes:

1. Internationally known pest management program that addresses global food security issues, e.g., pre and post-harvest losses, climate change, etc.
2. Commitment to human and institutional capacity building in pest management in the international setting
3. Leadership of multidisciplinary collaborative research and development activities to address food security in strategic regions of the world