

## Tying It All Together—Papers from Two Noteworthy Symposia Dealing with Recent Developments in Agrochemical Research

The *Journal of Agricultural and Food Chemistry* is pleased to feature in this issue papers from two recent symposia held during Agrochemical Division sessions at the 239th meeting of the American Chemical Society in San Francisco, CA, March 21–25, 2010. One of the symposia was held in recognition of the 80th birthday of John E. Casida, Professor of Toxicology and Entomology at the University of California, Berkeley, and mentor and colleague to several generations of leading scientific authorities in the areas of pesticide chemistry and toxicology. This symposium on Pesticide Toxicology in Honor of Professor Casida covers a broad swath of relatively recent science underpinning two classes of “biorational” insecticides, the pyrethroids and neonicotinoids, as well as development and application of generic tools such as QSAR, protein and metabolite profiling, biomimetic chemistry, affinity labeling reactions, and much more. As John Johnston and Luis Ruzo, organizers of the symposium, observed so aptly “John Casida modestly specified that curiosity is the driving force behind his research efforts. Knowing him as we do, we would have to add a few more traits that we feel are responsible for his incredibly prolific and creative output .... The symposium ... presented an opportunity for Professor Casida’s colleagues to reflect on the incredible accomplishments of the Environmental Chemistry and Toxicology Laboratory and the honor of being associated with Professor Casida.”<sup>1</sup> Professor Casida’s curiosity about pesticide action has been clearly vindicated with the outpouring of outstanding science reported during this symposium.

The companion symposium, Strategic Molecular Design of Neonicotinoid Insecticides, elaborates the development and mode of action of a spectacularly successful class of insecticides which are related in their action to that of the natural product nicotine, one of the first widely used botanical insecticides.<sup>2</sup> Professor Shinzo Kagabu of Gifu University, Japan, received the International Award for Research in Agrochemicals sponsored by the American Chemical Society Division of Agrochemicals and supported by gifts from DuPont Crop Protection and BASF Corp. to honor scientists like Kagabu, who have “made outstanding contributions to the field of agrochemicals at the international level. Their vision and sustained contributions ... opened new horizons for other investigators in their field and beyond.”<sup>3</sup> In his award address, Prof. Kagabu gave insight into the process of strategic molecular design as applied to imidacloprid, which has now captured the lead in sales of insecticides worldwide.<sup>4</sup> The theme of molecular design is amplified in a number of papers from this symposium.

Prof. Casida observed, “Understanding and optimizing pesticidal activity requires knowledge of structure–activity relationships at the primary target site coupled with structure–biodegradability relationships at the organismal level.”<sup>5</sup> This symposium focused on neonicotinoids exemplifies advances in this understanding, as is perhaps best summed up by Peter Jeschke et al., who state “The discovery of neonicotinoids can be considered as a milestone in insecticide research and greatly

facilitates the understanding of functional properties of the insect nAChRs” (nicotinic acetylcholine receptors).<sup>6</sup>

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### REFERENCES

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