From the Desk of the Chancellor, June 13, 2011

Congratulations to Professor of Electrical and Computer Engineering Russell Eberhart! He has just been notified that he will share the 2012 IEEE Computational Intelligence Society Evolutionary Computation Pioneer Award with a coauthor of his book Swarm Intelligence—James Kennedy—published by Morgan Kaufmann/Academic Press in April 2001. The award recognizes significant contributions to early concepts and sustained developments in the field—both in terms of fundamental understanding and engineering application.

So, what is "swarm intelligence." and why is Professor Eberhart's and his colleagues' work being recognized as "pioneering" 10 years after the publication of the book? That is how long it takes an idea to establish its influence in the field, even one as fast-paced as technology. An article in the August 12, 2010, edition of The Economist explained that "swarm intelligence" is an artificial intelligence technique based on the study of collective behavior in decentralized systems—like ant colonies. Or, in Professor Eberhart's case, flocks of birds. "Particle swarm optimisation (PSO), which was invented by James Kennedy and Russell Eberhart in the mid 1990s, is inspired more by birds than by insects. When you place a bird feeder on your balcony, it may take some time for the first bird to find it, but from that moment many others will soon flock around. PSO algorithms try to recreate this effect."

And what is the practical human benefit of blending social-psychological and engineering research to derive algorithms that simulate social behaviors? Basically, it sheds light on how humans process information. One area of Professor Eberhart's research now, for example, is an analysis of sleepy and inattentive driving, which has implications for the understanding and treatment of sleep disorders.

The IEEE is the world's largest professional association dedicated to advancing technological innovation and excellence for the benefit of humanity. Its origins date back to the discovery of electricity, and it was once known at the Institute of Electrical and Electronics Engineers. But just as technology has undergone multiple incarnations and evolutions, so has the association that advances the work. Today, its official moniker is its acronym. In 2001, Professor Eberhart became a Fellow of the IEEE, and in 2002 he became a Fellow of the American Institute for Medical and Biological Engineering.

As a General Chair of the 2nd International Conference on Swarm Intelligence, Professor Eberhart is currently in Chongqing, China, to give a plenary talk for the 2011 international conference of this fledging association.

Comments? Write chancllr@iupui.edu.

Chancellor Charles R. Bantz

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