



NEWSLETTER

INTERNATIONAL SOCIETY OF CHEMICAL ECOLOGY

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Deadline for the next issue is September 15, 2005.

Secretary/Editor's Message

The 21st Annual Meeting of the International Society of Chemical Ecology is just over a month away. As you all know, this year's meeting is being principally organized by Jeff Aldrich and will be held in Washington DC. Many of you will have already made your travel plans, but if you are still tossing up as whether to go or not, I urge you to go! The meeting will be a rewarding one, not only for the tremendous program of invited speakers that Jeff has assembled (see below), but also because Washington DC is a fascinating and culturally exciting city, with world class museums and restaurants. Accompanying persons, in particular, will be spoiled for choice of activities.



The votes have been cast, tallied, and the winners decided! This year, we had an excellent turnout of voters for the various Executive and Council elections. The races for all the positions, with the exception of Treasurer (in which Ken Haynes was the sole candidate!), were very close, but in the end Gary Blomquist was elected as Vice-President, Ken Haynes as Treasurer, and Eduardo Barata, Anna-Karin Borg-Karlson, Hiroshi Honda and Joachim Ruther have been elected as the four councilors. My congratulations to each of you! You should all plan on attending the Council meeting on the afternoon of 23rd July. I will send you a draft agenda shortly. Also, I would like to extend my thanks to Steve Teale who will be retiring as Treasurer during the Annual Meeting. Steve has done a great job in enhancing the financial resources of the Society as well as handling all the membership issues.

Finally, the Society received two outstanding nominations for the ISCE Silver Medal award for 2006 – the Society's most prestigious honor. The Council's vote for these two nominees was split equally. In an extraordinary decision, the Executive decided that both these nominees were highly deserving of the award and that two Silver Medals would be awarded in 2006. My congratulations to John Hildebrand and Cam Oehlschlager!

See you in Washington DC!

Stephen Foster
Secretary, ISCE

Update on the 21st Annual Meeting of the ISCE

The 21st Annual Meeting of the International Society of Chemical Ecology will be held at the Omni Shoreham Hotel in Washington, D.C., July 23-27, 2005. On-line registration and abstract submission are open at www.ChemEcol.us; and a link has recently been added to the website for those interested in sharing a room. The most convenient airport to the Omni-Shoreham Hotel is Reagan National.

Contributed papers and posters will be accepted through July 15th. Several corporate sponsors have been enlisted for the meeting, and these sponsors will more actively participate in our meeting than ever before. The program is organized around special lectures and four symposia as follows:



Program Outline:

**Saturday, 23rd:
Afternoon: Registration**

ISCE Council Meeting

Evening: Opening reception & preview of 2006 ISCE meeting in Barcelona, Spain (Prof. Angel Guerrero, Dept Biol. Org. Chem., Barcelona, Spain)

Sunday, 24th:

Morning: Welcome & Introductions: Dr. Phyllis Johnson (Director, Beltsville Agricultural Research Center)

**Special Lecture: Dr. Robert Davis (Molecular Plant Pathology Laboratory, Beltsville, Maryland):
"Spiroplasma kunkelii – Helical, motile, wall-less, plant pathogenic bacterium: A model of obligate parasitism in plants and insects"**

Symposium on Mosquitoes (organized by W. Leal):

- 1) "Reverse chemical ecology: Prospecting for oviposition attractants for Culex mosquitoes" – Walter S. Leal (University of California, Davis).
- 2) "Molecular basis of olfaction in Anopheles gambiae" – Linda Field (IACR-Rothamsted, Harpenden, Herts, U.K.).
- 3) "Trapping gravid Aedes mosquitoes with bacteria derived semiochemicals" – Coby Schal (North Carolina State University, Raleigh).
- 4) "Behavioral responses of Culex mosquitoes to oviposition attractants" – Ring Cardé (University of California, Riverside).

- 5) "Novel behavioral assay for mosquito deterrents" – Jerome Klun (USDA-ARS, Beltsville, Maryland).
- 6) "Immobilized odorant binding protein liquid chromatographic stationary phases: Going with the flow in chemical ecology" – Irving Wainer (National Institutes of Health, Baltimore, Maryland).

Afternoon: Symposium on Mosquitoes (continued)

Silverstein-Simeone Award Lecture: Dr. John Carlson (Yale University, New Haven, Connecticut): "Chemosensory reception and coding in *Drosophila*"

Contributed papers / Poster session

Monday, 25th:

Morning: Symposium on Semiochemistry (honoring Dr. Kyung Boo; organized by A. Cossé, T. Baker & J. Aldrich):

- 1) "Overview of semiochemicals research and application success in Korea" – Kye Chung Park (Pennsylvania State University, University Park).
- 2) "PBAN and PBAN receptors" – Man-Yeon Choi (Iowa State University, Ames).
- 3) "Chrysomelid semiochemistry" – Allard Cossé (USDA-ARS, Peoria, Illinois).
- 4) "Heliothine moth olfaction" – Tom Baker (Pennsylvania State University, University Park).
- 5) "Catnip, aphids and lacewing predators: Tritrophic coincidence or confusion?" – Jeffrey Aldrich, Kamlesh Chauhan and Qing-He Zhang (USDA-ARS, Beltsville, Maryland).
- 6) "Sex pheromones of the navel orangeworm and *Pyralis farinalis*: the missing pieces to the puzzle" – Jocelyn Millar, Lodewyk P. Kuenen, and J. Stephen McElresh (University of California, Riverside).

Afternoon: Contributed papers / Poster session

Tuesday, 26th:

Morning: Symposium on Marine Chemical Ecology (organized by N. Targett):

- 1) "Sponge-microbe symbioses: model systems for integrating molecular and chemical ecology" – Robert Thacker (University of Alabama, Birmingham).
- 2) "Seagrass-pathogen interactions: attack by the wasting disease pathogen, *Labyrinthula* spp., causes the "pseudo-induction" of phenolics" – Thomas Arnold (Dickinson College, Carlisle, Pennsylvania).
- 3) "The tale of an ordinary bryozoan, its symbiont, and an anticancer compound: the chemical ecology and biosynthesis of the bryostatins" – Nicole Lopanik (University of Michigan, Ann Arbor).
- 4) "Sensory biology and ecology of chemosensory foraging: a tale of two predators (and their prey)" – Marc Weissburg (Georgia Institute of Technology, Atlanta).

Noon: Journal of Chemical Ecology luncheon meeting

Afternoon: "Duck" tour of Washington D.C. or tour of Beltsville Agricultural Research Center

Evening: Banquet with Social Lecture (Prof. Jacques M. Pasteels (Universite de Libre Bruxelles, Belgium): "Wonderful meetings and unique opportunities"

Wednesday, 27th:

Morning: Silver Medal Award Lecture: Dr. James H. Tumlinson (Pennsylvania State University, University Park): "Chemical ecology of plant defenses against insects and pathogens"

Symposium on Insect-Plant Interactions (organized by W. Boland & J. Tumlinson):

- 1) "Plant-insect interactions in Arabidopsis: From transcript profiling to induced resistance" – Phillip Reymond (University of Lausanne, Switzerland).
- 2) "Genetically silenced defense responses: Consequences for the herbivore community composition on *Nicotiana attenuate*" – Rayko Halitschke (Cornell University, Ithaca, New York).
- 3) "Physiological and molecular adaptations stabilizing symbiotic ant-plant mutualisms" – Martin Heil (University of Essen-Duisburg, Germany)
- 4) "Signals, effects, and specificity of volatile-induced plant defense responses" – Jürgen Engelberth (Pennsylvania State University, University Park).
- 5) "Chemical signalling in the microbial community of the lepidopteran gut" – Jo Handelsman (University of Wisconsin, Madison).
- 6) "Xenobiotic metabolism by caterpillars: inductions and deductions" – May Berenbaum (University of Illinois, Urbana-Champaign).
- 7) "MecWorm, a novel tool to study plant-herbivore interactions" – Axel Mithöfer (Max Planck Institute for Chemical Ecology, Jena, Germany)

Afternoon: Insect-Plant Interactions Symposium (continued)

Contributed papers

Final business meeting

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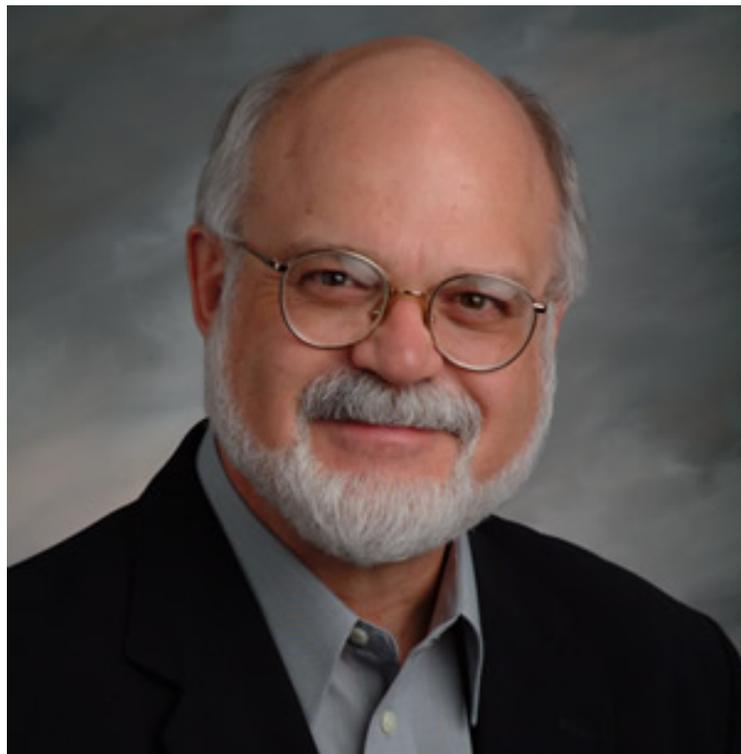
2006 ISCE Silver Medal Award Winners

John G. Hildebrand

John G. Hildebrand is Regents Professor, Director of the Division of Neurobiology of the Arizona Research Laboratories, and Professor of Neurobiology, Biochemistry & Molecular Biophysics, Entomology, and Molecular and Cellular Biology in the University of Arizona.

Dr. Hildebrand was born in Boston, Massachusetts, in 1942. He earned the A.B. degree (magna cum laude in biology) at Harvard College in 1964 and the Ph.D. degree (in biochemistry) at Rockefeller University in 1969, under the mentorship of Profs. Leonard Spector and Fritz Lipmann. He was a postdoctoral fellow of the Helen Hay Whitney Foundation and the A.P. Sloan Foundation in the Department of Neurobiology of Harvard Medical School, where he worked with Prof. Edward Kravitz.

Before joining the University of Arizona in 1985 to establish and direct the Division of Neurobiology, Dr. Hildebrand was a Professor of Biological Sciences in Columbia University (1980-85), an Adjunct Professor at



Rockefeller University (1981-86), and a member of the faculty of the Department of Neurobiology at Harvard Medical School (1970-80). He has served as a Trustee (1981-89) and member of the Executive Committee (1982-88) of the Marine Biological Laboratory (MBL) in Woods Hole and as a Trustee of the Rockefeller University (1970-73) and the Grass Foundation (2001-present). From 1980 until 1997, he also held an appointment as an Associate in Behavioral Biology in the Harvard University Museum of Comparative Zoology.

Dr. Hildebrand's research combines molecular, anatomical, neurophysiological, and behavioral methods in a multidisciplinary approach to problems of the organization, physiology, functioning, and postembryonic development of the insect nervous system. Areas of principal interest include: physiology, functional organization, and development of the olfactory system; chemical ecology of moth-hostplant interactions; sensory control of feeding, mating, and oviposition behaviors; biochemistry of intercellular communication in the nervous system; and the neurochemical anatomy of central neurosecretory pathways and the neurosecretory control of behavior.

He also has a long record of commitment to education. Over the past 35 years, he has served as research advisor or co-advisor and educational sponsor for 43 postdoctoral associates, 10 Ph.D. students, and 55 undergraduate research students. In 1980-84 he was Co-Director of the summer Neurobiology Course at the Marine Biological Laboratory in Woods Hole. From 1986 until 1997 he was Chairman of the Committee on Neuroscience at the University of Arizona and founding director of its Ph.D. Program in Neuroscience.

Dr. Hildebrand has edited four books, published more than 180 research papers, reviews and book chapters, and lectured widely as an invited colloquium and symposium speaker. Among his honors have been Claude Pepper and MERIT Awards from the National Institutes of Health, the Givaudan Lectureship of the Association of Chemoreception Sciences, an Established Investigatorship of the American Heart Association, the R.H. Wright Award in Olfactory Research, the Max Planck Research Award of the Alexander von Humboldt Stiftung, a Wellcome Visiting Professorship at Meharry Medical College, the Jan de Wilde Memorial Lectureship of the University of Wageningen (The Netherlands), the King Solomon Lectureship of the Hebrew University of Jerusalem, the Kenneth Roeder Memorial Lectureship of Tufts University, the Felix Santschi Lectureship of the University of Zürich, the Grandpierre Lectureship of Columbia University, the Pakykula Lectureship of Wellesley College, the IFF Award for Innovative Research in the Chemoreception Sciences, the Founders= Memorial Award of the Entomological Society of America, the Manheimer/Mastertaste Award of the Monell Chemical Senses Center, an Alexander-von-Humboldt Stiftung Forschungspreis, and election to the Deutsche Akademie der Naturforscher Leopoldina and the Norwegian Academy of Science and Letters. He has been honored with an honorary doctorate from the University of Cagliari in Italy and is an elected Fellow of the American Academy of Arts and Sciences.

Dr. Hildebrand has served as President of the Association of Neuroscience Departments and Programs (1988-89), the International Society for Neuroethology (1995-98), the International Society for Chemical Ecology (1998-99), and the Association for Chemoreception Sciences (2002-03) and as Chairman of the Steering Committee of the Section on Neuroscience of the American Association for the Advancement of Science. He is a Founding Fellow, member of the Founding Fellows Planning Group, and first elected chairman of the Arizona Arts, Sciences and Technology Academy. He has been a consultant to the Sherman Fairchild Foundation, National Institutes of Health, National Science Foundation, National Research Council, National Academy of Sciences, and the Office of Technology Assessment of the U.S. Congress, and also to several corporations and universities. He has served on the Consiglio Scientifico of the Stazione Zoologica of Naples (Italy), the Fachbeirat of the Max-Planck-Institut für Verhaltensphysiologie in Seewiesen (Germany), and the Scientific Advisory Board of the Whitney Marine Laboratory, University of Florida. He has been an editor of 17 scientific journals, including Editor for Developmental Neuroscience of The Journal of Neuroscience (1983-88) and Co-Editor of the Journal of Comparative Physiology A (1990-present). He has

served as Program Chairman of both the Society for Neuroscience and the International Society for Neuroethology, as Treasurer of the Society for Neuroscience, and as an officer of the International Brain Research Organisation. He is an elected Fellow of the Royal Entomological Society (UK) and the American Association for the Advancement of Science, and a member of numerous other scientific societies, including the International Society of Chemical Ecology. He is listed in American Men and Women of Science and Who's Who in America, and his Website can be found at: <http://www.neurobio.arizona.edu/faculty/hildebrand/>.

A.C. Oehlschlager

Dr. Cam Oehlschlager received his Doctorate in Chemistry at Oklahoma State University in 1965. Between 1966 and 1998 Oehlschlager pursued an academic career at Simon Fraser University. During his tenure at Simon Fraser Oehlschlager's group identified aggregation pheromones for five of the most important coleopteran pests of stored grain, developed stable isotope methods to probe the biosynthesis of several complex pheromones and provided commercial scale syntheses for pheromones of the major coleopteran pests of North American forests. The availability of gram quantities racemic and chiral pheromones allowed elucidation of the mechanisms of interspecies selection as well as development of pheromone-based management strategies for the North American forestry sector by the Simon Fraser group. While most of Oehlschlager's 31 postgraduate students pursued careers in the pharmaceutical industry a few have made significant contributions to chemical communication: Dr. Jocelyn Millar (University of California, Riverside), Dr. Desiree Vanderwel (University of Winnipeg, Canada) and Dr. Jorge Cabezas (University of Costa Rica).



In the early 1990's Oehlschlager's group identified aggregation pheromones of several species of economically important palm weevils as well as the coconut rhinoceros beetle. Coincident with his work, one of these, *Rhynchophorus ferrugineus* emerged as the most important pest of date palm in the Arabian Peninsula while the coconut rhinoceros beetle has ranked as the most important pest of oil palm regeneration in Southeast Asia for decades.

During the early 1990's Oehlschlager spearheaded applications of these and other pheromones for management of pests in tropical America, the Middle East and Southeast Asia. All of these applications utilize mass trapping as the control strategy. The spectacular success of the mass trapping program that emerged from this work led UNFAO and UNDP to call upon Oehlschlager in the Middle East where he was instrumental in development of pheromone-based strategies for management *Rhynchophorus ferrugineus*. These developments led Oehlschlager to leave his academic post in 1998 to devote full time to research and development of pheromone-based strategies for management of insect pests of tropical crops. Oehlschlager's vehicle for this endeavor is a private company, ChemTica Internacional, of which he is, with his wife, an owner. In 2000 ChemTica, located in Costa Rica, was awarded the Costa Rican Exporter's Association Award for development of original products (3,500 members, 1999 winner was Intel of Costa Rica). As of 2005 the company had 45 employees including nine University graduates supported by sales in over 40 countries. According to the 2004 Biopesticide Compendium of the British Crop Protection Council ChemTica is the major producer for several of the world's top 50 pheromone products that are used in control strategies. The world-wide area covered mass trapping (largely developed by Oehlschlager and collaborators) is nearing 50% of the area covered by mating disruption.

Election Results 2005



Vice-President and President-Elect

Gary Blomquist was elected as Vice-President and President-Elect of ISCE. Gary is a Professor and Chair of the Department of Biochemistry and Molecular Biology at the University of Nevada, Reno. He is best known for his work on the biochemistry and endocrine regulation of pheromone production in insects.

Dr Jocelyn Millar will become the new President.

Treasurer

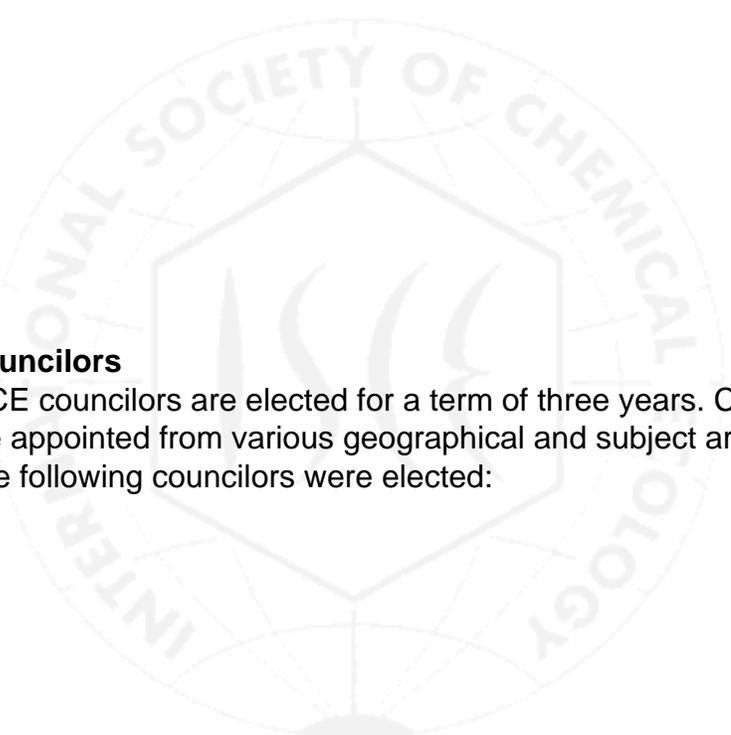
Kenneth Haynes was elected as Treasurer. Ken is a Professor in the Department of Entomology at the University of Kentucky. His research focuses on the evolution of species-specificity of chemical communication in moths and aggressive chemical mimicry by bolas spiders.

The outgoing Treasurer is Dr Steve Teale.



Councilors

ISCE councilors are elected for a term of three years. Councilors are appointed from various geographical and subject areas, and advise the ISCE Executive Committee. The following councilors were elected:





Dr Eduardo Nuno Barata. Dr Barata is assistant professor at University of Évora (Portugal). His research spans the identification of aggregation pheromones in cork oak beetles, sexual behaviour and pheromones in freshwater and marine fish species, olfaction of calcium in freshwater and marine fish, and food-related odorants in marine flatfish.

Dr Anna Borg-Karlson. Dr Borg-Karlson is a Professor at The Royal Institute of Technology, Dept of Chemistry, Stockholm, Sweden. Her main research interest is characterization of the diversity and evolution of chemical signals (chemodiversity) underlying insect perception, behaviour and insect host-plant preferences.





Dr. Hiroshi Honda. Dr Honda is a Professor in the Graduate School of Life and Environmental Sciences, University of Tsukuba, Japan. His research focuses on the chemical ecology of insect-insect and plant-insect interactions.

Dr. Joachim Ruther. Dr Ruther heads a working group in chemical ecology at the Institute of Biology, Free University of Berlin, Germany. His major research interest is sexual communication of insects.



Retiring councilors are: Heidi Dobson, Jocelyn Millar, Coby Schal, Sadahiro Tatsuki and Walter Leal (as Past-President). Tom Baker, as Past-President will assume the role of councilor.

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Upcoming Course

Semiochemicals in Pest Control and Conservation Biology

Graduate student course on the applications of pheromones, kairomones and other semiochemicals. Organized by the Department of Ecology, Lund University and the Department of Crop Science, Swedish University of Agricultural Sciences. The course will take place in Lund, Sweden, early 2006,

Scope: Since the first identification of a pheromone over forty years ago the world of chemical signals has received much attention from scientists in biology, chemistry and agriculture/forestry. Many of the findings have come into practical use, mainly for monitoring or suppression of insect pests. Yet, a very small fraction of crop protection is based on semiochemicals, despite their obvious advantages over conventional insecticides. Why is this and what can be done to increase the applied use of these sustainable alternatives? More recently other possibilities to use odour signals have become obvious in e.g. detection of rare species. Can this be developed and used more widely in conservation biology? These are issues that will be dealt with during the course, which includes lectures, student presentations, exercises and discussions.

On the program

Monitoring of pest species

Monitoring of rare species

Mating disruption

Mass trapping, lure & kill, trap crop

Repellence

Calling for help, tritrophic interactions

Chemistry from milligram scale to kilograms

Commercial and legal aspects

Detailed program is not ready, but you may get an impression by looking at the schedule of the similar course given in February 2004. Note that specific titles and teachers might be changed. <http://pheromone.ekol.lu.se/infochemicals2.html>

Participants: Graduate (MSc, PhD) students in biological, chemical, agricultural or forestry disciplines.

Location: Department of Ecology, Lund University, Sweden

Time: Early, 2006, 2 weeks full time. Dates will be announced at the web page when decided. <http://pheromone.ekol.lu.se/kurser.html>

Language: English, Tuition fee: 3000 SEK (about 325 euro) including excursion, and course dinner. Payment instructions will be sent to those that register.

Contact and Registration: Interested participants are kindly requested to sign up and enclose a short description of scientific experience and field of research as soon as possible, and at the latest November 15, 2005 to: Olle Anderbrant, Department of Ecology (Sect. of Chemical Ecology/Ecotoxicology)

Lund University, SE-223 62 Lund, Sweden

Telephone: +46 (0)46 222 4997, fax: +46 (0)46 222 4716, cell phone: +46 (0)70 372 4997

e-mail: olle.anderbrant@ekol.lu.se

The number of participants will be limited to 30.

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Books of Interest

Ecosystems and Sustainable Development V

Edited by: E E. Tiezzi, C.A. Brebbia, S. Jorgensen, and D. Almorza Gomar

Series: WIT Transactions on Ecology & the Environment, Vol 81

(ISSN 1746-448X)

Publisher: WIT PRESS, UK - www.witpress.com

ISBN: 1-84564-013-6, Pages: 776pp

Price: US\$435.00, uk pounds sterling 272.00, Euros 408.00

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