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POLLINATOR RISK ASSESSMENT FRAMEWORK
SCIENCE REVIEW BOARD MEMBERS BIOGRAPHICAL SKETCHES

May Berenbaum, Ph.D.

Dr. May Berenbaum is the Swanlund Professor and Head of the Department of Entomology at the University of Illinois at Urbana-Champaign. She has taught courses in introductory animal biology, entomology, insect ecology and chemical ecology and has received awards at the regional and national levels teaching from the Entomological Society of America. A fellow of the National Academy of Sciences, the American Academy of Arts and Sciences, and the American Philosophical Society, she served as President of the American Institute for Biological Sciences in 2009 and currently serves on the Board of Directors of American Association for the Advancement of Science (AAAS). Her research addresses insect-plant coevolution from molecular mechanisms of detoxification to impacts of herbivory on community structure. Concerned with the practical application of ecological and evolutionary principles, she has examined impacts of genetic engineering, global climate change, and invasive species on natural and agricultural ecosystems. In recognition of her work, she received the 2011 Tyler Prize for Environmental Achievement. Devoted to fostering science literacy, she has published numerous articles and five books on insects for the general public.

Nina Fefferman, Ph.D.

Professor Fefferman is an Associate Professor at Rutgers University in the Department of Ecology, Evolution and Natural Resources, and is also an active member of the Center for Discrete Mathematics and Theoretical Computer Science (DIMACS). She also serves as the Co-Director of the Tufts University Initiative for the Forecasting and Modeling of Infectious Disease (InForMID). She is the author of over 30 academic papers and edited volumes, has been the PI on multiple funded research studies, and her work has been the focus of international media attention in television, radio, and print media. Prof. Fefferman uses mathematical modeling to examine questions in evolutionary sociobiology and epidemiology. Her work frequently focuses on eusocial insects, humans, and how behavior and social organization can impact the spread of infectious disease. She explores what insights can be gained from systems in the natural world for application in areas of public health, bio-defense, and pandemic preparedness. Her lab also works to produce novel mathematical techniques for outbreak detection and spatial modeling for health risk assessment. Dr. Fefferman has been an active member of the Command, Control, and Interoperability Center for Advanced Data Analysis (CCICADA, a Department of Homeland Security Centers of Excellence), and has consulted for the National Defense University, (DARPA), the Centers for Disease Control, and multiple private companies. She received her Ph.D. in biology from Tufts University in 2004, her MS in mathematics from Rutgers University in 2001, and her AB in mathematics from Princeton University in 1999.

Greg Hunt, Ph.D.

Dr. Greg J. Hunt is a professor in the Entomology Department at Purdue University which conferred the status of University Academic Scholar to him in 2009. He is originally from Ohio where he earned a B.S. degree in Biology (1979) from John Carrol University. After a short time working for Cleveland Air Pollution control as a chemist, he obtained a M.S. degree in Plant Pathology from the Pennsylvania State University in 1984. After five years working at the University of Wisconsin, Madison he again enrolled as a graduate student at the University of California-Davis where he received a Ph.D. in Entomology (1994). He published the first genetic map of the honey bee genome, and has been involved in the honey bee genome project. He has coauthored over 60 publications in many top-ranked journals. He has worked with beekeepers doing research and extension and helped to found the first Midwestern beekeeping association. He has formerly served as a trustee for a national charitable foundation for apicultural research and extension, and as the former president of the American Association of Professional Apiculturists. He served on advisory panels to evaluate 5-year plans of United States Department of Agriculture bee labs and national programs (NP 305), and also as a panelist for National Science Foundation (NSF) grant review (animal behavior). He has been a Principal Investigator (PI) or Co-PI on twenty USDA, National Institute of Health (NIH) and NSF research projects. His research interests focus mainly on genetic and epigenetic influences on bee behavior, especially in regard to stinging behavior and resistance mechanisms to parasitic mites. He recently coauthored a paper that quantified routes of exposure to bees of neonicotinoids used in agriculture that have been implicated in bee kill incidents.

Rosalind James, Ph.D.

Dr. Rosalind James is Research Leader of the (USDA) Agricultural Research Service's (ARS) Pollinating Insects--Biology, Systematics and Management Research Unit in Logan, Utah. The mission of the laboratory is the development of sustainable pollination systems for agricultural crops and wildlands, focusing on bees, especially utilizing and protecting native bees. Dr. James obtained a Ph.D. in entomology (1995) from Oregon State University, and is a bee pathologist whose research contributes to a fundamental understanding of host-pathogen interactions, bee immunity, and the effects of environmental factors on immune function. Dr. James' Ph.D. research was conducted at the EPA's Environmental Research Laboratory in Corvallis, Oregon, where she developed methods for assessing the potential impact of microbial control agents on beneficial insects. Dr. James joined USDA-ARS in 1997 as a Research Entomologist at the Beneficial Insects Research Unit in Weslaco, Texas, where she worked on biological control of the silver leaf whitefly and initiated research on the use of fungal pathogens to control a devastating pest of honey bees, the varroa mite. In 2001, she transferred to the Logan bee lab to study bee diseases. Dr. James has been involved in risk assessment issues associated with beneficial insects throughout her career, both nationally and internationally, authoring three risk assessment technical reports, serving on FIFRA-Scientific Advisory Panels relating to plant pesticides, and serving as a U.S. representative for the North American Plant Protection Organization. Dr. James has authored 62 publications, including articles in well respected entomology and molecular biology journals, and edited the book *Bee Pollination in Agricultural Ecosystems*. Dr. James has also organized several symposia on the importance of bees to agriculture and natural ecosystems, for national and international scientific societies.

Nancy Ostiguy, Ph.D.

Nancy Ostiguy (Ph.D. Cornell; M.P.H., UC Berkeley) is an Associate Professor of Entomology at Penn State and has been conducting research on pollinators for the past 13 years. Her research focuses on the environmental consequences of pest control strategies, including non-pesticidal approaches to pest control (IPM), pesticide residues in foods and other products, risk communication, and sublethal effects of pesticides on non-target organisms. Her work on pollinators includes management of *Osmia cornifrons* for apple pollination, distribution and frequency of solitary bees, viruses cross-over between native bees and honey bees, non-pesticidal approaches to control pests of the honey bee, interactions between the varroa mite and honey bee viruses, epidemiology of honey bee viruses and other diseases, and abiotic influences on honey bee survival. Her statistical background provides her the opportunity to work on issues ranging from the importation of invasive species in packing material and pathogens on meat to honey bee viruses and sustainable beekeeping. She teaches introductory entomology, introductory graduate biostatistics, and two general education science courses for non-science majors (environmental science & insect appreciation).

Jens Pistorius

Jens Pistorius works at the Julius Kühn-Institut (JKI), Federal Research Centre for Cultivated Plants, which is a federal research institute and a higher federal authority. There Mr. Pistorius is in charge of the risk assessments of pesticides on honey bees, and the examinations for honey bee poisoning incidents. At JKI, he also leads research activities which are currently focused on the impact of dust drift and guttation on bee colonies as well as lethal and sublethal effects on honey bees. He finished his university studies of Diploma in Agricultural Biology in 2005, at the University of Hohenheim, Germany. His thesis was "Pesticide residues in nectar and pollen in different bee attractive crops and impact on honey bee health following application". After completing his studies at the University of Hohenheim, he served as a study director for honey bee trials at the Eurofins-GAB in Niefern-Öschelbronn, Germany. In 2007, he joined the JKI. He is also responsible for Germany's national risk assessment for bees and commercially used pollinators. He has been actively involved in several international workgroups focused on bee risk assessment. He frequently provides presentations for broad audiences including bee keepers, farmers, bee scientists, plant protection specialist, government authorities, and politicians.

Jeffery Pettis, Ph.D.

Dr. Jeffery S. Pettis is Research Leader at the Bee Research Laboratory U.S. Department of Agriculture (USDA) –Agricultural Research Service (ARS), Beltsville, Maryland. A native of central Georgia, Dr. Pettis received a B.S. in Entomology (1982) and a M.S. in Entomology (1985) from University of Georgia in Athens, Georgia and Ph.D. in Entomology (1991) from Texas A&M University in College Station, Texas. Dr. Pettis completed his post doctoral fellowship at Simon Frasier University in 1996 and joined the USDA Bee Research Lab shortly after as a Research Entomologist and became Research Leader in 2006. As research leader of the USDA-ARS Bee Research Laboratory in Beltsville, Dr. Pettis leads a team effort to improve colony health by limiting the impact of pests and diseases on honey bee colonies. His research areas include; Integrated Pest Management techniques to reduce the impacts of parasitic mites and disease, effects of pesticides and pathogens on queen health and longevity, host-parasite relationships and bee behavior. Dr. Pettis has authored or coauthored over 100 publications in many of the premier journals in entomology, agriculture and biology, as well as co-authored 4 book chapters. He has received international recognition for his research, routinely provides advice to Animal and Plant Health Inspection Service (APHIS), Food and Drug Administration (FDA) and the US Environmental Protection Agency (EPA) on a wide range of issues related to honey bees including pesticide exposure and protocol development, has been interviewed by major national and international news agency about bee health and colony losses in the United States and is frequently asked to provide information, briefing support and informal briefings to House and Senate members on Colony Collapse disorder including technical support for official testimony by USDA and personally briefed both Senate and House Agriculture staffers. His collaborations with other researchers at the USDA, United States Geological Service (USGS), University of Maryland, University of Minnesota, Bee Unit of the Central Science Laboratory in York England and the Swiss Bee Research Centre in Bern have resulted in numerous funded research grants from a variety of agencies including the USDA-APHIS, Federal Laboratory Consortium, and USDA-ARS. Dr. Pettis served as Lead Coordinator of an ARS Areawide program designed to improve colony survival and pollination availability over 5 years (2006-2011). Dr. Pettis serves on the Office of International Epizootics (OIE) and European Food Safety Agency (EFSA) teams that deal with bee health issues and is an active member of the European Union (EU) funded project called COLOSS. Dr. Pettis is an active member of American Association of Professional Apiculturist, Entomological Society of America, and International Union for the Study of Social Insects. He participated in the worldwide Pellston Society of Environmental Toxicology and Chemistry (SETAC) conference as an expert Bee Biologist in 2009. He has presented at numerous conferences, professional meetings and lectures including Entomological Society of America, International Union for the Study of Social Insects, state and national beekeeper associations and the Apimondia International Congress. Dr. Pettis continues his research interests in bee biology and bee health through international collaborations in the North and South America, Europe, Thailand, China and Korea and in mentoring students and other junior research fellows.

Thomas Potter, Ph.D.

Dr. Potter is a research chemist at the U.S. Department of Agriculture (USDA)-Agricultural Research Service Southeast Watershed Research Laboratory. He leads a multi-disciplinary group of scientists in investigations of land management and agronomic practices on fate and transport of pesticides at field, farm and watershed scales. His more than 32 years experience as a research scientist, teacher and consultant includes authorship of 67 peer-review journal publications, 7 book chapters, 8 government reports, 2 books, and service on scientific advisory panels for the USDA-Foreign Agriculture Service, the U.S. Environmental Protection Agency and the U.S. Food and Drug Administration. His technical areas include human and ecological risk assessment, elucidation and simulation of pesticide environmental fate and transport, and pesticide residue analysis.

Author Paul, Schwab, Ph.D.

Dr. Paul Schwab is Professor of Environmental Soil Chemistry at Texas A&M University in College Station, Texas. Originally from Colorado, Dr. Schwab received his B.S. in Mineral Engineering-Chemistry from Colorado School of Mines (1976) and his Ph.D. in Soil Physical Chemistry from Colorado State University (1981). Dr. Schwab worked for the Battelle Pacific Northwest Laboratories from 1981-1983, and moved to Kansas State University (KSU) in 1983. After 15 years in KSU's Agronomy Department, he took a similar position in 1998 at Purdue University in West Lafayette, Indiana. At Purdue, he became Director of the Natural Resources and Environmental Sciences Program in 2008. Dr. Schwab has authored or co-authored over 100 publications in the area of soil chemistry as well as co-authoring and co-editing several books. Dr. Schwab is a regular contributor to Civilian Research Development Foundation (CRDF) Global international scientific research review panels. His research interests include fate and transport of contaminants in soil and water; the chemistry of metals in soils; remediation of contaminated soils; and water quality issues. In addition to his research duties, Schwab teaches graduate and undergraduate classes and advises graduate students.

David Tarpy, Ph.D.

David Tarpy is an Associate Professor of Entomology and the Extension Apiculturist at North Carolina State University since 2003, after receiving a BS from Hobart College, an MS from Bucknell University, a Ph.D. from the University of California at Davis and a postdoctoral fellowship at Cornell University. As Extension Apiculturist, he maintains an apiculture web site dedicated to the dissemination of information and understanding of honey bees and their management, spearheads numerous extension projects such as the 2005 New Beekeeper Cost-sharing program that created hundreds of new beekeepers within the state, and launched the new online Beekeeper Education & Engagement System (BEES)—an exciting new "learning community" for knowledge and understanding of bees and beekeeping. His research interests focus on the biology and behavior of honey bee queens—using techniques including field manipulations, behavioral observation, instrumental insemination, and molecular genetics—in order to better improve the overall health of queens and their colonies. Specific research projects include understanding the effect of the polyandrous mating strategy of queen bees on colony disease resistance, determining the underlying factors of Colony Collapse Disorder, using molecular methods to determine the genetic structure within honey bee colonies, and the determining the regulation of reproduction at the individual and colony levels. His work has provided some of the best empirical evidence that multiple mating by queens confers multiple and significant benefits to colonies through increased genetic diversity of their nestmates, particularly through increased tolerance to numerous diseases. More recently, his lab group has focused on the reproductive potential of commercially produced queens, testing their genetic diversity and mating success in an effort to improve queen quality.