iFAST: The International Forum on Advanced Environmental Sciences and Technology

A series of distinguished seminars by eminent scientists

8 a.m. CDT; 9 a.m. EDT; 1 p.m. GMT; 9 p.m. Beijing

Wednesday, May 5, 2021

Joan Bennet

Rutgers University

https://plantbiology.rutgers.edu/faculty/bennett/Joan-Bennett.html

Joan Wennstrom Bennett is a fungal geneticist who did pioneering work on the clustered genes involved in the biosynthesis of fungal secondary metabolites, especially mycotoxins. In addition, her laboratory has investigated the physiological activity of fungal volatile organic compounds using genetic model systems. Currently a distinguished professor in the Department of Plant Biology at Rutgers, The State University of New Jersey, New Brunswick, NJ, for over thirty years she previously was a faculty member at Tulane University in New Orleans, LA. During her years at Tulane, Joan was awarded the Newcomb College Mortarboard Award for Excellence in Teaching in 1975; elected Honors Professor of the Year in 1991 and was recognized as Outstanding Faculty Fellow of Newcomb College in 2006. The American Society for Microbiology recognized her focus on educational excellence with the Carksi Teaching Award in 2001. Throughout her career, Joan has taken a special interest in the advancement of women and minorities in science. Professor Bennett is a past president of both the Society for Industrial Microbiology and Biotechnology (2001-2002) and the American Society for Microbiology (1990-1991). She is a past co-editor-in-chief of *Advances in Applied Microbiology* and past editor-in-chief of *Mycologia* and is an honorary Professor of the Institute of Microbiology, Chinese Academy of Science (Beijing, China). She was elected to the U. S. National Academy of Sciences in 2005 and to the American Academy for Arts & Sciences in 2021.

Fungal Volatile Organic Compounds: More Than Just a Funky Smell

After Hurricane Katrina in 2005, approximately 80% of New Orleans flooded. My house and its contents, along with other flooded buildings, became a habitat for molds. This huge fungal "bloom" released many bad-smelling, volatile organic compounds (VOCs). Scandinavian researchers had postulated that mold VOCs contribute to the adverse health effects sometimes associated with living in water damaged buildings, but there were few experimental data to support this hypothesis. After moving to Rutgers University, my laboratory pioneered the use of genetic models to test the biological activity of fungal VOCs. Mixtures of VOCs emitted from living cultures of molds isolated after Hurricane Katrina and Super Storm Sandy, as well as low concentrations of chemical standards of some individual VOCs, were toxic in *Drosophila melanogaster*. In particular, low concentrations (0.5-2.8 ppm) of "mushroom alcohol" (1-octen-3-ol) showed potent neurotoxicity and caused Parkinsonian effects in this genetic model. When a yeast knock-out library was screened for resistance to 1-octen-3-ol, ninety-one resistance genes were identified, the majority of which were involved in protein trafficking.

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Register for the Zoom conference at www.ou.edu/ieg/seminars

Organizing Committee Chair: Jizhong Zhou (University of Oklahoma, USA; https://www.ou.edu/ieg)
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