

WOODBIDGE A. FOSTER

Professional Preparation

University of California, Berkeley Entomology & Parasitology B.S. 1963
University of California, Berkeley Entomology & Parasitology Ph.D. 1967



Appointments

1976-present: Associate Professor, Ohio State University
1973-1976: Assistant Professor, Ohio State University
1971-1973: Research Associate, University of Georgia
1970-1971: Research Fellow, University of Bristol
1967-1970: Assistant Professor, Haile Sellassie I University, Addis Ababa, Ethiopia

Top Honors and Awards

Ministry of Overseas Development (U.K.) Research Fellowship, 1970-1971
NIH predoctoral fellowship, 1965-1967
NSF undergraduate grant, 1962
Macdonald Scholarship, University of California, Berkeley, 1961

Program capsules

Research: Nutritional ecology and mating behavior of mosquitoes. Recent research activity concerns the behavioral phylogenetic analysis of Sabethini, the use of plant volatiles in mosquito surveillance, and the effect of energy availability on *Anopheles* transmission of malaria

Teaching: Instructor for General Entomology, Medical Entomology, and Insect Behavior.

Three Most Important Scholarly Accomplishments, Last Five Years

- Led a team of collaborators to develop a proposal to study the nutritional ecology of the most important vector of malaria, *Anopheles gambiae*, in Kenya and Tanzania, now approved for funding by NIH.
- Created a matrix of mating-behavior characters from video analysis, being used to construct hypotheses for the phylogeny of sabethine mosquitoes and the origin and evolution of courtship in this tribe of mosquitoes.
- Revealed the importance of energy status to decision-making and vectorial capacity of *Ochlerotatus triseriatus* and *Anopheles gambiae*, two important vectors of pathogens.

Five Selected Publications (69 total)

- Foster, W. A. & Walker, E. D. 2002. 12. Mosquitoes (Culicidae), pp.203-262. In G. A. Mullen & L. A. Durden [eds.] *Medical-Veterinary Entomology*. Academic Press, San Diego.
- Foster, W. A. and Takken, W. 2004. Nectar-related vs. human-related volatiles: behavioural response and choice by female and male *Anopheles gambiae* (Diptera: Culicidae) between emergence and first feeding. *Bull. Entomol. Res.* 94: 145-157.
- Gary, R. E., Jr. and Foster, W. A. 2004. *Anopheles gambiae* Giles (Diptera: Culicidae) experimental feeding and survival on the extra-floral nectar of two common tropical plants. *Med. Vet. Entomol.* 18: 102-107.
- Impoinvil, D. E., Kongere, J. O., Foster, W. A., Njiru, B. N., Killeen, G. F., Githure, J. I., Beier, J. C., Hassanali, A. and Knols, B. G. J. 2004. Survival of the malaria mosquito *Anopheles gambiae* on plants from Mbita, western Kenya. *Med. Vet. Entomol.* 18: 108-115.

Mostoway, W. M. and Foster, W. A. 2004. Antagonistic effects of energy status on meal size and egg-batch size of *Aedes aegypti* (Diptera: Culicidae). *J. Vector Ecol.* 29: 84-93.

Five Selected Grants

Seed Grant Program, Ohio State University, "Immunization Against the Filaria of the Heart of the Dog," O. Barriga & W. A. Foster, \$14,000, 1984-1985.

Equine Research Fund, College of Veterinary Medicine, O.S.U., "Identification of Insect Vectors in the Transmission of Potomac Horse Fever," J.C. Gordon, S. Bech-Nielsen, W. A. Foster, C. W. Kohn, \$7,498, 1986-1988.

National Institutes of Health, U. S. Publ. Health Service, "Ethology of Blood/Sugar Antagonism in Mosquitoes," W. A. Foster, \$138,677, 1987-1991.

National Science Foundation, "Arthropod Biodiversity of Brazilian Amazonia," preparatory travel grant, N. F. Johnson & W. A. Foster, \$5,072, 1991.

National Institutes of Health, U. S. Publ. Health Service, "Nutritional Ecology of Adult *Anopheles gambiae*," W. A. Foster (P.I.), H. Briegel, A. Hassanali, M. J. Klowden, B. D. Roitberg & F. Wackers, \$275,000 - activation pending, expected Feb 2005.

Professional Service Highlights, Last 5 Years

- Chair, Editorial Board, *Journal of Vector Ecology*.
- Board of Directors, Secretary & Newsletter Editor, Ohio Mosquito Control Association.
- Chair, Editorial Board, *American Entomologist*.
- Invited Lecturer, "Arthropod-Borne Diseases," Principles of Environmental Health, College of Medicine, O.S.U. 4 hours per year.
- Invited Seminar Speaker, "Mating behaviour in mosquitoes: alternative strategies and the evolution of courtship," Zoological Institute, University of Zurich.

Key Collaborations

Behavior Modeling: 12-year collaboration with B. D. Roitberg, Simon Fraser University, Burnaby, British Columbia. The primary mutual activity is a working mathematical model, using stochastic-dynamic programming to understand and predict mosquito behavior that bears on pathogen transmission at the population level.

Sabethine Evolution: 10-year collaboration with D. D. Judd, Oregon State University, on the biology, ecology, taxonomy, and phylogenetic analysis of sabethine mosquitoes. This work involves a network of other collaborators at U. C. Davis, California, U. S. National Museum, Washington, D.C., and Natural History Museum in London.

Phytochemicals: Collaboration with a consortium of workers on attractants for use in surveillance of hematophagous pests and vectors of disease, notably W. Takken, Wageningen University, The Netherlands, D. Carlson, USDA, Gainesville, FL, and proposal development with P. L. Phelan, Dept. Entomology, OSU/OARDC

Nutritional Ecology: Developing 3-year collaboration with mosquito ecologist B. G. J. Knols, IAEA, Seibersdorf, Austria, and A. Hassanali, International Centre for Insect Physiology & Ecology, Nairobi, Kenya, to study *Anopheles gambiae* feeding behavior and nutritional status in the field.