

Donald C. Steinkraus

Professor

Department of Entomology



Current Appointment: 65% Research; 20% Teaching; 15% Service

Education

B. A.	1975	Cornell University, Ithaca, NY	Anthropology
M.S.	1979	University of Connecticut, Storrs, CT	Biology
Ph.D.	1987	Cornell University, Ithaca, NY	Entomology

Professional Experience

University of Arkansas, Department of Entomology		
Professor	1999-present	
Associate Professor	1994-1999	
Assistant Professor	1989-1994	
Cornell University		
Research Associate	1987-1989	
Research Specialist	1979-1982	

Awards and Honors

National Excellence in IPM Award, Entomological Society of America, 2001
Excellence in IPM Award, Southeastern Branch, ESA, 2000

Areas of Research Specialization

Primary area of research is biological control of insect pests with entomopathogenic fungi. My main focus has been cotton insects, particularly cotton aphid and the epizootiology of the fungus *Neozygites fresenii* and its application to cotton IPM. I have also worked extensively with *Beauveria* for control of tarnished plant bugs, poultry litter beetles, and red oak borers; with baculoviruses, Bts, and nematodes on cotton, soybean, and sorghum, corn, and wheat; and basic scientific studies on pathogens of soldier beetles, whiteflies, periodical cicadas. Currently I am initiating work on milky spore diseases of Japanese beetle, fungal pathogens of pine bark beetles, and fungal pathogens of varroa mites and honey bees.

Aphid Fungus Sampling Service: I initiated and direct this unique extension-based service. It has saved cotton growers millions of dollars over the past 13 years. This project has been funded by Cotton Incorporated for the past 13 years and is based on a large body of basic and applied research.

Selected Recent Publications

- Roy, H. E., D. C. Steinkraus, J. Eilenberg, A. E. Hajek, and J. K. Pell. 2006. Bizarre interactions and endgames: Entomopathogenic fungi and their arthropod hosts. *Annu. Rev. Entomol.* 51: 331-357.
- Gomez, S. K., D. M. Oosterhuis, D. L. Hendrix, D. R. Johnson, and D. C. Steinkraus. 2006. Diurnal pattern of aphid feeding and its effect on cotton leaf physiology. *Environ. Exp. Bot.* 55: 77-86.
- Steinkraus, D. C. and G. O. Boys. 2005. Mass harvesting of the entomopathogenic fungus, *Neozygites fresenii*, from natural field epizootics in the cotton aphid, *Aphis gossypii*. *J. Invertebr. Pathol.* 88: 212-217.
- Steinkraus, D. C. 2004. Fungal Pathogens of Insects, pp. 928-935. J. L. Capinera (Ed.), *Encyclopedia of Entomology*, Kluwer Academic Publishers, Dordrecht.
- Steinkraus, D. C., G. O. Boys, and J. A. Rosenheim. 2002. Classical biological control of *Aphis gossypii* (Homoptera: Aphididae) with *Neozygites fresenii* (Entomophthorales: Neozygitaceae) in California cotton. *Biological Control*: 25: 297-304..

- Duke, L., D. C. Steinkraus, J. J. English, and K. G. Smith. 2002. Infectivity of resting spores of *Massospora cicadina* (Entomophthorales: Entomophthoraceae), an entomopathogenic fungus of the periodical cicada (*Magicicada* spp.) (Homoptera: Cicadidae). *J. Invertebr. Pathol.* 80: 1-6.
- Steinkraus, D. C., and A. J. Mueller. 2003. Impact of true armyworm (Lepidoptera: Noctuidae) feeding on wheat yields in Arkansas. *J. Entomol. Sci.* 38: 431-438.
- Vingaard, M. G., Steinkraus, D. C., Boys, G. O., and Eilenberg. J. 2003. Effects of long-term storage at -14°C on the survival of *Neozygites fresenii* (Entomophthorales: Neozygitaceae) in cotton aphids (Homoptera: Aphididae). *J. Invertebr. Pathol.* 82: 97-102.
- Godfrey, K., D. Steinkraus, and M. McGuire. 2001. Fungal pathogens of the cotton and green peach aphids in the San Joaquin Valley. *Southwest. Entomol.* 26: 297-303.
- Layton, M. B., J. L. Long, and D. C. Steinkraus. 2001. Influence of boll weevil eradication on cotton aphid populations in Mississippi cotton. *Southwest. Entomol. Suppl.* No. 24, 57-67.
- Rashid, T., D. T. Johnson, D. C. Steinkraus, and C. R. Rom. 2001. Effects of microbial, botanical and synthetic insecticides on 'Red Delicious' apple arthropods in Arkansas. *HortTechnology* 11: 615-621.
- Steinkraus, D. C. 2000. Documentation of naturally-occurring pathogens and their impact in agroecosystems, pp. 173-190. In L. A. Lacey and H. K. Kaya (eds), *Field Manual of Techniques in Invertebrate Pathology*, Kluwer Acad. Pub., 932 pp.
- Young, S. Y., D. C. Steinkraus, and D. Gouge. 2000. Microbial insecticide application: cotton, pp. 301-331. In L. A. Lacey and H. K. Kaya (eds), *Field Manual of Techniques in Invertebrate Pathology*, Kluwer Acad. Pub., 932 pp.

Contracts and Grants

P.I. or co P.I. on \$722,801 in outside grants 2001-2005. Granting agencies include: USDA-NRI, USDA-PMAP, Cotton Incorporated, California Dept. of Food and Agriculture.

Professional Service

Symposium Organizer for Society for Invertebrate Pathology, Southeastern Branch ESA
 Reviewer Each year I review about 10 journal articles for *J. Invertebr. Pathol.*, *J. Entomol. Sci.*, *Biological Control*, etc. and 1-3 grant proposals for NRI, SBIR, or other programs.
 Program Chair for Southeastern Branch, ESA
 Participate in meetings of the Entomological Soc. America, Soc. Invertebr. Pathol., Beltwide Cotton Meetings, Arkansas State Beekeepers Meeting, regional beekeeper meetings, and others.

Teaching

Morphology of Insects ENTO5013: 1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005

Required Core Course in Entomology

Apiculture ENTO4043: 2001, 2003, 2005

Student reviews (Purdue) for 2005 were a mean of 5.0 of 5.0 possible.

Scientific Photography ENTO5009, 6071: 1991, 1994, 1998

Student reviews (Purdue) were a mean of 5.0 of 5.0 possible

Biological Control ENTO5123: 1989, 1991, 1993, 1995, 1997, 1999, 2001, 2004

Taught the insect pathology portion of this course.

Outreach

Insect Festival of Arkansas: 1993, 1995, 1997, 1998, 1999, 2001, 2002, 2003

I initiated and direct this major outreach. Over the years it has reached approximately 30,000 people

Live Insect Zoo: 1989 to present. I have maintained Entomology's live arthropod zoo that has reached approximately 50,000 people over the past 16 years.

Graduate Students: I have graduated 2 Ph.D. students, 4 M.S. students, and currently serve as chair for 2 M.S. students.