

Jay A. Rosenheim

Department of Entomology
University of California
Davis, CA 95616 USA

Telephone: 530-752-4395
FAX: 530-752-1537
e-mail: jarosenheim@ucdavis.edu

Education

B.S. (Entomology), 1983, University of California, Davis
Ph.D. (Entomology), 1987, University of California, Berkeley

Honors and Awards

National Merit Finalist Thomas J. Watson Scholar (1979-1983)
Alfred Bijou Award (1979)
Edward Kraft Award (1980)
Elected to Phi Kappa Phi (1982)
President's Undergraduate Fellowship (1983)
Departmental Citation for Outstanding Performance (1983)
U.C. Davis College of Agriculture and Environmental Sciences Medal (1983)
National Science Foundation Graduate Fellowship (1983-1987)
Harvey I. Magy Memorial Award (1986)
Entomological Society of America President's Award (1987)
Elected to Phi Beta Kappa (1988)
Fulbright Junior Research Award (1989)
National Researcher of the Month Award, Cotton Incorporated (1997)
Griswold Lecturer, Department of Entomology, Cornell University (1997)
Entomologist of the Year, Hawaiian Entomological Society (2000)
H. R. MacCarthy Lecturer, University of British Columbia and Simon Fraser University (2001)
Lady Davis Visiting Professorship, Hebrew University of Jerusalem, Israel (2006-7)
Excellence in Undergraduate Education Award, Associated Students of UC Davis; recipient for College of Agriculture & Environmental Sciences (2009)
Fellow, American Association for the Advancement of Science (2009)
Distinguished Teaching Award for Undergraduate Teaching, UC Davis Academic Senate (2011).
Charles Chesley Doane Distinguished Lecturer, Department of Entomology, University of Wisconsin (2012)
Excellence in Undergraduate Education Award, Associated Students of UC Davis; recipient for College of Biological Sciences (2014)
Theodore L. Hopkins Distinguished Colloquium Award recipient and speaker, Department of Entomology, Kansas State University (2015)
International Organization of Biological Control, Nearctic Region Section (IOBC-NRS) Distinguished Scientist Award (2016)

Professional Experience

1987-1989 Assistant Entomologist, Department of Entomology, University of Hawaii
1989-1990 Fulbright Junior Researcher, The Hebrew University of Jerusalem, Israel
1990-1994 Assistant-; 1994-1998 Associate-; 1998-present, Professor, Department of Entomology, University of California, Davis
1998-99 Visiting Professor, Harvard University, Department of Organismal and Evolutionary Biology (sabbatical)
1999-2005 Professeur Associé, Département de phytologie, Université Laval (Québec)
2007-2008 Visiting Scientist, Hebrew University of Jerusalem and Weizmann Institute of Science, Israel

Professional Societies

Entomological Society of America
Ecological Society of America
Society for the Study of Evolution
American Association for the Advancement of Science

Editorial Boards

Annual Review of Entomology (1996-2001)
Biological Control (2000-present)
Entomologia Experimentalis et Applicata (2004-present)
Oecologia, Handling Editor (1997-2011)
Proceedings of the Hawaiian Entomological Society (1996-2002)
Guest Editor, *Ecology: Special Feature on Intraguild predation* (2005-2007)
Journal of Insect Science, Associate Editor (2008-2011).
Ecology and Ecological Monographs, Subject-matter Editor (2011-present).

Research Areas

Ecoinformatics methods for agricultural entomology. Ecology of parasitoid-host and predator-prey interactions, with direct applications to biological control in agricultural ecosystems. Life history evolution and strategies organisms use to cope with unpredictable environments.

Publications

Rosenheim, J. A. and M. A. Hoy. 1986. Intraspecific variation in levels of pesticide resistance in field populations of a parasitoid, *Aphytis melinus* (Hymenoptera: Aphelinidae): the role of past selection pressures. *Journal of Economic Entomology* 79:1161-1173.

- Rosenheim, J. A. and J. K. Grace. 1987. Biology of a wood-nesting wasp, *Mimumesa mixta* (Hymenoptera: Sphecidae), and its parasite, *Elampus viridicyaneus* (Hymenoptera: Chrysididae). *Proceedings of the Entomological Society of Washington* 89:351-355.
- Rosenheim, J. A. 1987. Nesting behavior and bionomics of *Ammophila dysmica* (Hymenoptera: Sphecidae): the influence of parasite pressure. *Annals of the Entomological Society of America* 80:739-749.
- Rosenheim, J. A. 1987. Host location and exploitation by the cleptoparasitic wasp *Argochrysis armilla*: the role of learning (Hymenoptera: Chrysididae). *Behavioral Ecology and Sociobiology* 21:401-406.
- Rosenheim, J. A. 1987. Genetic improvement of a biological control agent: evolution of pesticide resistance in *Aphytis melinus* DeBach (Hymenoptera: Aphelinidae) through natural and artificial selection. *Ph.D. dissertation, University of California, Berkeley*.
- Rosenheim, J. A. and M. A. Hoy. 1988. Sublethal effects of pesticides on the parasitoid *Aphytis melinus* (Hymenoptera: Aphelinidae). *Journal of Economic Entomology* 81:476-483.
- Rosenheim, J. A. 1988. Parasite presence acts as a proximate cue in the nest-site selection process of the solitary digger wasp, *Ammophila dysmica* (Hymenoptera: Sphecidae). *Journal of Insect Behavior* 1:333-342.
- Rosenheim, J. A. and M. A. Hoy. 1988. Genetic improvement of a parasitoid biological control agent: artificial selection for insecticide resistance in *Aphytis melinus* (Hymenoptera: Aphelinidae). *Journal of Economic Entomology* 81:1539-1550.
- Rosenheim, J. A., T. Meade, I. G. Powch and S. Schoenig. 1989. Aggregation by foraging insect parasitoids in response to local variations in host density: determining the dimensions of a host patch. *Journal of Animal Ecology* 58:101-117.
- Rosenheim, J. A., M. A. Hoy, J. Gorden and J. R. Stewart. 1989. Selection for insecticide resistance in the California red scale parasitoid *Aphytis melinus*. *California Agriculture* 43(1):17-18.
- Rosenheim, J. A. and M. A. Hoy. 1989. Confidence intervals for the Abbott's formula correction of bioassay data for control response. *Journal of Economic Entomology* 82:331-335.
- Rosenheim, J. A. 1989. Behaviorally-mediated spatial and temporal refuges from a cleptoparasite, *Argochrysis armilla* (Hymenoptera: Chrysididae), attacking a ground-nesting wasp, *Ammophila dysmica* (Hymenoptera: Sphecidae). *Behavioral Ecology and Sociobiology* 25:335-348.
- Rosenheim, J. A. 1990. Aerial prey caching by solitary ground-nesting wasps: a test of the predator defense hypothesis. *Journal of Insect Behavior* 3:241-250.
- Rosenheim, J. A. 1990. Density-dependent parasitism and the evolution of nesting aggregations in the solitary Hymenoptera. *Annals of the Entomological Society of America* 83:277-286.
- Rosenheim, J. A., S. C. Welter, M. W. Johnson, R. F. L. Mau and L. R. Gusukuma-Minuto. 1990. Direct feeding damage on cucumber by mixed-species infestations of two thrips, *Thrips palmi* and *Frankliniella occidentalis* (Thysanoptera: Thripidae). *Journal of Economic Entomology* 83:1519-1525.
- Welter, S. C., J. A. Rosenheim, M. W. Johnson, R. F. L. Mau and L. R. Gusukuma-Minuto. 1990. Effects of *Thrips palmi* and western flower thrips (Thysanoptera:

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- Tabashnik, B. E., B. A. Croft and J. A. Rosenheim. 1990. Spatial scale of fenvalerate resistance in pear psylla (Homoptera: Psyllidae) and its relationship to treatment history. *Journal of Economic Entomology* 83:1177-1183.
- Rosenheim, J. A. and B. E. Tabashnik. 1990. Evolution of pesticide resistance: interactions between generation time and genetic, ecological, and operational factors. *Journal of Economic Entomology* 83:1184-1193.
- Rathman, R. J., M. W. Johnson, J. A. Rosenheim and B. E. Tabashnik. 1990. Carbamate and pyrethroid resistance in the leafminer parasitoid *Diglyphus begini* (Hymenoptera: Eulophidae). *Journal of Economic Entomology* 83:2153-2158.
- Rosenheim, J. A. 1991. Realized heritability estimation for pesticide resistance traits. *Entomologia Experimentalis et Applicata* 58:93-97.
- Rosenheim, J. A. and B. E. Tabashnik. 1991. Influence of generation time on the rate of response to selection. *American Naturalist* 137:527-541.
- Rosenheim, J. A. and D. Rosen. 1991. Foraging and oviposition decisions in the parasitoid *Aphytis lingnanensis*: distinguishing the influences of egg load and experience. *Journal of Animal Ecology* 60:873-893.
- Rosenheim, J. A., S. C. Welter, M. W. Johnson, R. F. L. Mau and L. R. Gusukuma-Minuto. 1991. Cucumber fruit scarring by *Thrips palmi* and *Frankliniella occidentalis* (Thysanoptera: Thripidae). *Proc. Agricultural Development in the American Pacific Crop Protection Conference*, pp. 74-78.
- Rathman, R. J., M. W. Johnson, J. A. Rosenheim and B. E. Tabashnik. 1991. Insecticide studies on three leafminer parasitoids in Hawaii. *Proc. Agricultural Development in the American Pacific Crop Protection Conference*, pp. 141-145.
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- Rathman, R. J., M. W. Johnson, J. A. Rosenheim, B. E. Tabashnik and M. A. Purcell. 1992. Sexual differences in insecticide susceptibility and synergism with piperonyl butoxide in the leafminer parasitoid *Diglyphus begini* (Hymenoptera: Eulophidae). *Journal of Economic Entomology* 85:15-20.
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- Rosenheim, J. A., and D. Rosen. 1992. Influence of egg load and host size on host feeding decisions by the parasitoid *Aphytis lingnanensis*. *Ecological Entomology* 17:263-272.

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- Rosenheim, J. A. 1993. Comparative and experimental approaches to understanding insect learning. Pages 273-307 in D. R. Papaj and A. C. Lewis, editors. *Insect learning: ecological and evolutionary perspectives*. Chapman and Hall, New York.
- Rosenheim, J. A. 1993. Single sex broods and the evolution of non-siblicidal parasitoid wasps. *American Naturalist* 141:90-104.
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- Rosenheim, J. A., and L. R. Wilhoit. 1993. Predators that eat other predators disrupt biological control of the cotton aphid. *California Agriculture* 47(5):7-9.
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- Rosenheim, J. A., and J. J. Cisneros. 1994. Biological control of the cotton aphid, *Aphis gossypii*, by generalist predators. *Proceedings of the Beltwide Cotton Conference*, pp. 1000-1002.
- Rosenheim, J. A., and M. Mangel. 1994. Patch leaving rules for parasitoids with imperfect host discrimination. *Ecological Entomology* 19:374-380.
- Rosenheim, J. A. 1994. Invited book review: *The Design and Analysis of Research Studies*, Bryan F. J. Manly. *Mathematical Biosciences* 121:249-250.
- Rosenheim, J. A. 1994. Parasitoids: attractive model systems. (Invited book review: *Parasitoids: behavioral and evolutionary ecology* by H. C. J. Godfray, Princeton University Press, 1994.) *Trends in Ecology and Evolution* 9:194.

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- Colfer, R. G., and J. A. Rosenheim. 1995. Intraguild predation by coccinellid beetles on an aphid parasitoid, *Lysiphlebus testaceipes*. *Proceedings of the Beltwide Cotton Conference*, pp. 1033-1036.
- Rosenheim, J. A., K. J. Fuson, and L. D. Godfrey. 1995. Cotton aphid biology, pesticide resistance, and management in the San Joaquin Valley. *Proceedings of the Beltwide Cotton Conference*, pp. 97-101.
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- Corbett, A., and J. A. Rosenheim. 1996. Quantifying movement of a minute parasitoid, *Anagrus epos* (Hymenoptera: Mymaridae), using fluorescent dust marking and recapture. *Biological Control* 6:35-44.
- Rosenheim, J. A., M. W. Johnson, R. F. L. Mau, S. C. Welter, and B. E. Tabashnik. 1996. Biochemical preadaptations, founder events, and the evolution of resistance in arthropods. *Journal of Economic Entomology* 89:263-273.
- Corbett, A., and J. A. Rosenheim. 1996. Impact of a natural enemy overwintering refuge and its interaction with the surrounding landscape. *Ecological Entomology* 21:155-164.
- Rosenheim, J. A., and D. Hongkham. 1996. Clutch size in an obligately siblicidal parasitoid wasp. *Animal Behaviour* 51:841-852.
- Godfrey, L., and J. A. Rosenheim. 1996. Aphids and whiteflies in the San Joaquin Valley of California in 1995. *Proceedings of the Beltwide Cotton Conference*, pp. 128-132.
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- Rosenheim, J. A. 1996. An evolutionary argument for egg limitation. *Evolution* 50:2089-2094.

- Heimpel, G. E., J. A. Rosenheim, and M. Mangel. 1996. Egg limitation, host quality and dynamic behavior by a parasitoid in the field. *Ecology* 77:2410-2420.
- Heimpel, G. E., J. A. Rosenheim, and M. Mangel. 1997. Predation on adult *Aphytis* parasitoids in the field. *Oecologia* 110:346-352.
- Heimpel, G. E., J. A. Rosenheim, and D. Kattari. 1997. Adult feeding and lifetime reproductive success in the parasitoid *Aphytis melinus*. *Entomologia Experimentalis et Applicata* 83:305-315.
- Rosenheim, J. A., L. R. Wilhoit, P. B. Goodell, E. E. Grafton-Cardwell, and T. F. Leigh. 1997. Plant compensation, natural biological control, and herbivory by *Aphis gossypii* on pre-reproductive cotton: the anatomy of a non-pest. *Entomologia Experimentalis et Applicata* 85:45-63.
- Cisneros, J. J., and J. A. Rosenheim. 1997. Ontogenetic change of prey preference in a generalist predator, *Zelus renardii*, and its influence on the intensity of predator-predator interactions. *Ecological Entomology* 22:399-407.
- Rosenheim, J. A. 1998. Higher-order predators and the regulation of insect herbivore populations. *Annual Review of Entomology* 43:421-447.
- Heimpel, G. E., and J. A. Rosenheim. 1998. Egg limitation in parasitoids: a review of the evidence and a case study. *Biological Control* 11:160-168.
- Visser, M. E., and J. A. Rosenheim. 1998. The influence of competition between foragers on clutch size decisions in insect parasitoids. *Biological Control* 11:169-174.
- Rosenheim, J. A., and D. Granicher. 1998. Nesting biology of an endemic Hawaiian wasp, *Ectemnius molokaiensis*. *Proceedings of the Hawaiian Entomological Society* 33:147-149.
- Murphy, B. C., J. A. Rosenheim, R. V. Dowell, and J. Granett. 1998. Testing a habitat diversification tactic for improving biological control: parasitism of the western grape leafhopper, *Erythroneura elegantula* (Homoptera: Cicadellidae). *Entomologia Experimentalis et Applicata* 87:225-235.
- Schmidt, J., J. Taylor, and J. A. Rosenheim. 1998. Cannibalism and intraguild predation in the predatory Heteroptera. Pages 131-169 in: M. Coll and J. Ruberson (eds), *Predatory Heteroptera in Agroecosystems: Their Ecology and Use in Biological Control*. Thomas Say Publication of the Entomological Society of America.
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- Rosenheim, J. A. 1999. Characterizing the cost of oviposition in insects: a dynamic model. *Evolutionary Ecology* 13:141-165.
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- 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.
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Extension and Limited Distribution Publications

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Invited and Submitted Papers

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- Rosenheim, J. A. 1986. Host location and exploitation by a cleptoparasite: the role of learning. Ann. Meeting Ent. Soc. Am., Reno, Nevada.
- Rosenheim, J. A. 1987. Sublethal effects of pesticides on the parasitoid *Aphytis melinus*: complexity of pesticide selectivity evaluation. Ann. Meeting Ent. Soc. Am., Boston, Massachusetts.
- Rosenheim, J. A. and M. A. Hoy. 1988. Genetic improvement of a parasitoid biological control agent: artificial selection for insecticide resistance in *Aphytis melinus* (Hymenoptera: Aphelinidae). XVIII International Congress of Entomology, Vancouver, Canada.
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- Rosenheim, J. A. 1992. Single-sex broods and the evolution of non-siblicidal parasitoid wasps. IX International Entomophagous Insects Workshop. May 4, Duck Key, Florida.
- Rosenheim, J. A. 1992. Single-sex broods and the evolution of non-siblicidal parasitoid wasps. Annual Meeting, Ecological Society of America. 11 August, 1992; Honolulu, Hawaii.
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- Rosenheim, J. A., L. R. Wilhoit, and C. A. Armer. Intraguild predation and biological control of the cotton aphid, *Aphis gossypii*. Beltwide Cotton Conference, New Orleans, Louisiana, Jan. 10, 1993. (Submitted)
- Rosenheim, J. A., and D. S. Hongkham. Clutch size in insect parasitoids with sibling conflict. Annual Meeting, Animal Behavior Society 29 July, 1993. (Submitted)
- Rosenheim, J. A. Predators that eat predators: biological control theory and the forgotten fourth trophic level. Annual Meeting, Entomological Soc. Am., Indianapolis, 14 Dec. 1993. (Submitted)
- Rosenheim, J. A., L. R. Wilhoit, and R. G. Colfer. 1994. Seasonal biology and polymorphism of the cotton aphid, *Aphis gossypii*, in California. Beltwide Cotton Conference, San Diego, CA, 6 January, 1994. (Invited)
- Rosenheim, J. A. 1994. Biological control of the cotton aphid, *Aphis gossypii*, by generalist predators. Beltwide Cotton Conference, San Diego, CA, 8 January, 1994. (Submitted)
- Rosenheim, J. A. 1994. Predators eating predators: a new perspective for biological control in the cotton agroecosystem. Pacific Branch of Entomological Society of America, Sparks, Nevada, June 22. (Invited symposium).
- Rosenheim, J. A. 1994. Intraguild predation creates "sinks" for generalist predators in areas of high prey availability. National Meeting of the Entomological Society of America, Dallas, Texas. December 15, 1994.
- Rosenheim, J. A. 1995. Cotton aphid (*Aphis gossypii*) on early-season cotton: the anatomy of a non-pest. Beltwide Cotton Conference, San Antonio, Texas; January 5, 1995 (submitted).
- Rosenheim, J. A., K. J. Fuson, and L. D. Godfrey. 1995. Cotton aphid biology, pesticide resistance, and management in the San Joaquin Valley. Beltwide Cotton Conference, San Antonio, Texas; January 5, 1995 (invited).
- Rosenheim, J. A. 1995. "Ecological interactions and the tactics and policy of biological control." 6th Annual California Biological Pest Control Conference, Sacramento, CA; 9 March, 1995 (invited).
- Rosenheim, J. A. 1995. "The ecology of generalist insect predators." Department of Entomology, University of Arkansas, Fayetteville, Arkansas. 2 November 1995 (invited seminar).
- Rosenheim, J. A. 1995. "Predators that eat other predators: implications for biological control theory." Department of Entomology, University of Illinois, Champaign, Illinois. 6 November 1995 (invited seminar).

- Rosenheim, J. A. 1995. "Sex allocation and multifaceted parental investment." Natural History Survey, Champaign, Illinois. 7 November 1995 (invited seminar).
- Rosenheim, J. A. 1995. "The cost of reproduction in insect parasitoids." Department of Entomology, Purdue University, Lafayette, Indiana. 8 November 1995 (invited seminar).
- Rosenheim, J. A. 1995. "Predators that eat other predators: implications for biological control theory." Department of Entomology, Purdue University, Lafayette, Indiana. 9 November 1995 (invited seminar).
- Rosenheim, J. A. 1995. "Predators that eat other predators: implications for biological control theory." Department of Entomology, University of Maryland, College Park, Maryland. 13 November 1995 (invited seminar).
- Rosenheim, J. A. 1995. "Predators that eat other predators: implications for biological control theory." Department of Entomology, University of Delaware, Newark, Delaware. 15 November 1995 (invited seminar).
- Rosenheim, J. A. 1995. "An evolutionary argument for egg limitation in insect parasitoids." Las Vegas, Nevada, 17 December, 1995. Annual Meeting of the Entomological Society of America.
- Rosenheim, J. A. 1996. "Predator-predator interactions and the regulation of insect herbivore populations". Department of Integrative Biology, University of California, Berkeley. March 6, 1996. (invited seminar)
- Rosenheim, J. A. 1996. "Predator-predator interactions and biological control theory". Department of Entomology, North Carolina State University, Raleigh, NC. October 21, 1996.
- Rosenheim, J. A. 1996. "Life history evolution and the cost of reproduction in insect parasitoids." Department of Entomology, North Carolina State University, Raleigh, NC. October 22, 1996.
- Rosenheim, J. A. 1996. "Principles of interactions among biological control agents". (Invited opening address.) Annual Meeting of the Entomological Society of Quebec, Quebec City, Canada. October 30, 1996.
- Rosenheim, J. A. 1996. "Foraging behavior, predator-predator interactions, and the top-down regulation of herbivore populations." Invited symposium presentation, annual meeting of the Entomological Society of America, Dec. 12, 1996, Louisville, Kentucky.
- Rosenheim, J. A. 1997. "Predators that eat other predators: implications for biological control theory". Invited symposium presentation, Annual Meeting of the Ecological Society of America, 14 Aug 1997, Albuquerque, New Mexico.
- Rosenheim, J. A. 1997. "Predator-predator interactions and the top-down regulation of insect herbivore populations". Invited departmental seminar, Dept. Entomology, Cornell University, 15 Sept. 1997, Ithaca, New York.
- Rosenheim, J. A. 1997. "Predator-predator interactions and the top-down regulation of insect herbivore populations". Invited departmental seminar, Dept. Entomology, Geneva Agricultural Experiment Station, 17 Sept. 1997, Geneva, New York.
- Rosenheim, J. A. 1997. "Biological control theory and the forgotten fourth trophic level". Invited departmental seminar, Department of Entomology, Texas A & M University, College Station, Texas. 25 September, 1997.

- Rosenheim, J. A. 1998. "Foraging behavior, predator-predator interactions, and the top-down control of herbivore populations". Invited departmental seminar, Department of Entomology, U.C. Riverside. Riverside, CA Jan. 12, 1998.
- Rosenheim, J. A. 1998. "Predator-predator interactions and biological control theory." Invited presentation, NSF-GRT Workshop, University of Kentucky, April 25, 1998.
- Rosenheim, J. A. 1998. "The contributions of time and eggs to the cost of reproduction in parasitoids". Submitted presentation, 7th International Behavioral Ecology Congress, Pacific Grove, CA, July 31, 1998.
- Rosenheim, J. A. 1998. "The relative contributions of time and eggs to the cost of reproduction in insects". Invited seminar, Department of Organismal and Evolutionary Biology, Harvard University, October 1, 1998.
- Rosenheim, J. A. 1998. "The relative contributions of time and eggs to the cost of reproduction in insects". Invited seminar, Department Biology, University of Calgary, October 22, 1998.
- Rosenheim, J. A. 1998. "Predators that eat other predators: implications for biological control theory". Invited Plenary Address, Annual Meeting of the Entomological Society of Alberta, Kananaskis Country, Alberta, October 23, 1998.
- Rosenheim, J. A. 1998. . "Predators that eat other predators: implications for biological control theory". Invited seminar, Department of Entomology, University of Massachusetts, Amherst. November 2, 1998.
- Rosenheim, J. A. 1998. "The relative contributions of time and eggs to the cost of reproduction". Submitted paper, Annual Meeting of the Entomological Society of America, Las Vegas, Nevada, November 10, 1998.
- Rosenheim, J. A. 1999. Predator foraging behavior, predator-predator interactions, and the regulation of herbivore populations. Invited seminar, Department of Ecology and Evolutionary Biology, Brown University, Feb. 15, 1999.
- Rosenheim, J. A. 1999. "The cost of oviposition in insect parasitoids". Submitted poster, 12th International Entomophagous Insects Workshop; Pacific Grove, CA; September 28, 1999.
- Rosenheim, J. A. 1999. "Predator foraging behavior and the ecology of biological control", National meeting of the Entomological Society of America, Atlanta, GA Dec. 1999.
- Rosenheim, J. A. 2000. "Parasitoids: what do we know", introductory invited talk, workshop on parasitoid ecology, Neuchatel, Switzerland; 23 Sept, 2000.
- Rosenheim, J. A. 2000. "Reproductive behavior and the cost of reproduction", invited talk, workshop on parasitoid ecology, Neuchatel, Switzerland; 25 Sept, 2000.
- Rosenheim, J. A. 2000. "Foraging behavior predicts the ecological function of predators", invited symposium presentation. Annual Meeting of the Entomological Society of America and Canada, Montreal (4 Dec 2000).
- Rosenheim, J. A. 2000. "Foraging behavior, predator-predator interactions, and the ecology of biological control". Invited seminar, Institute of Evolution, Haifa University, Israel. (14 Dec. 2000).
- Rosenheim, J. A. 2000. "The cost of reproduction in insect parasitoids." Invited seminar, Department of Entomology, The Hebrew University of Jerusalem, Israel. (19 Dec. 2000).

- Rosenheim, J. A. 2001. "Bugs eating bugs eating other bugs." Invited seminar, The Hebrew University of Jerusalem, Israel (2 Jan. 2001).
- Rosenheim, J. A. 2001. "Foraging behavior, predator-predator interactions, and the ecology of biological control". Invited seminar, Center for Population Biology, Imperial College, UK (11 Jan 2001).
- Rosenheim, J. A. 2001. "The cost of oviposition in insect parasitoids." Invited seminar, Center for Population Biology, Imperial College, UK (15 Jan 2001).
- Rosenheim, J. A. 2001. "Predators that eat other predators: implications for biological control." Invited symposium, Association of Applied Ecologists annual meeting (5 Feb 2001, Riverside CA).
- Rosenheim, J. A. 2001. "Foraging behavior, predator-predator interactions, and the regulation of herbivore populations". 11th H. R. MacCarthy Lecture, Simon Fraser University, 13 March, 2001.
- Rosenheim, J. A. 2001. "Foraging behavior, predator-predator interactions, and the regulation of herbivore populations". Invited seminar, Department of Zoology, University of British Columbia, 14 March, 2001.
- Rosenheim, J. A. 2001. "Foraging behavior, predator-predator interactions, and the regulation of herbivore populations". Invited seminar, Department of Plant and Environmental Protection Sciences, University of Hawaii, 27 April, 2001.
- Rosenheim, J. A. 2001. "What makes a predator a good biological control agent? Lessons from the papaya system." Invited seminar, Hawaiian Entomological Society, 14 May, 2001.
- Rosenheim, J. A. 2001. "Foraging behavior, predator-predator interactions, and the regulation of herbivore populations". Invited seminar, Department of Biological Sciences, University of Maine. 12 October, 2001.
- Rosenheim, J. A. 2001. "Trophic cascades in terrestrial ecosystems". Invited seminar/discussion, Department of Biological Sciences, University of Maine. 12 October, 2001.
- Rosenheim, J. A. 2001. "Foraging behavior, predator-predator interactions, and the regulation of herbivore populations". Invited seminar, Department of Entomology, University of Arizona, Tucson. 25 October, 2001.
- Rosenheim, J. A. 2002. "A new look at an old pest: what makes *Lygus* hungry for cotton squares", Cotton Workgroup Meeting, Modesto, CA, Mar 6, 2002.
- Rosenheim, J. A. 2002. "Do simple food webs underlie cascading effects in agroecosystems?", Ecological Society of America, invited symposium, Tucson, AZ, Aug. 6, 2002.
- Rosenheim, J. A. 2002. "When will *Lygus* damage your crop?" Cotton Field Day at West Side Research Station, 19 Sept, 2002. Extension-type talk given to ca. 100 farmers.
- Rosenheim, J. A. 2002. "Predator-predator interactions and the ecology of biological control", 2 Dec. University of California, Berkeley, Dept. ESPM, invited seminar.
- Rosenheim, J. A. 2003. "Predator-predator interactions and the ecology of biological control", 2 April, Kansas State University, Department of Entomology; student-nominated speaker for 2003.

- Rosenheim, J. A. 2003. "Omnivory and the indeterminacy of predator function: can a knowledge of foraging behavior help?" 3 April, Kansas State University, Department of Entomology; invited presentation to graduate ecology class.
- Rosenheim, J. A. 2003. "Determinants of lifetime reproductive success in insects"; 4 April, Department of Ecology and Evolutionary Biology, University of Kentucky. Invited seminar.
- Rosenheim, J. A. 2003. "Predator-predator interactions and the ecology of biological control", 4 April, University of Kentucky, Department of Entomology; invited seminar.
- Rosenheim, J. A. 2003. "Lifetime reproductive success in a parasitoid and an herbivore in the field." 26 July, Entomophagous Insects Workshop, Tucson, Arizona.
- Rosenheim, J. A. 2003. "The *Lygus* enigma." 19 Sept, West Side Research and Extension Center, Five Points, CA. (Extension talk.)
- Rosenheim, J. A. 2003. "Predator-predator interactions and the suppression of herbivore populations", UCD Ecology Seminar Series, 16 Oct, 2003.
- Rosenheim, J. A. 2003. "How widespread is intraguild predation? *Orius tristicolor* as a case study", annual meeting of the Entomological Society of America, 29 Oct, 2003.
- Rosenheim, J. A. 2004. "What makes *Lygus* hungry for cotton squares". Annual meeting of cotton workgroup (5 March 2004).
- Rosenheim, J. A. 2004 "Predator-predator interactions and the regulation of herbivore populations." UCR Biology Department, April 16, 2004.
- Rosenheim, J. A. 2004. "What makes a bad predator (one that disrupts biological control) bad?" Ent Soc Am Annual Meeting, Nov. 16, 2004. (invited symposium presentation).
- Rosenheim, J.A. 2005. "A new look at an old pest: explaining the variable impact of *Lygus* on cotton flower bud retention". March 3, 2005. Tulare, CA., California State Support Board, Cotton Incorporated annual meeting.
- Rosenheim, J.A. 2005. "Intraguild predation and biological control: a reappraisal". Invited talk, IOBC Symposium, Magog, Montreal, Canada. 10 May, 2005.
- Rosenheim, J.A. 2005. "Competition, intraguild predation, and biological control: a reappraisal". Invited symposium presentation; Ecological Society of America annual meeting, Montreal, Canada. 10 Aug, 2005.
- Rosenheim, J. A. 2005. "Predator-predator interactions and the regulation of herbivore populations: the forgotten fourth trophic level". Invited departmental seminar, San Francisco State University, 2 Nov, 2005.
- Rosenheim, J. A. 2005. "Predator-predator interactions and the regulation of herbivore populations: the forgotten fourth trophic level". Invited seminar, Departments of Ecology, Evolution, and Behavior, and Department of Entomology, Michigan State University, 21 Nov, 2005.
- Rosenheim, J. A. 2006. "Response of cotton to *Lygus* herbivory". Cotton Workgroup Meeting, Hanford, CA 8 March, 2006.
- Rosenheim, J. A. 2006. "Predator-predator interactions and the regulation of herbivore populations". Plenary address, 2006 Annual Meeting of the Israel Entomology Society. Rehovot, Israel, 18 October, 2006.
- Rosenheim, J. A. 2006. "Evolution of fitness-limiting factors", seminar to Alon Lab, Weizmann Institute of Science, 22 October, 2006.

- Rosenheim, J. A. and V. Fournier. 2007. "Additivity versus interactions in mite-plant and predator-mite interactions." Plenary address, International Organization of Biological Control, Acarology Study Group International Meeting, 13 March, 2007, Jerusalem, Israel.
- Rosenheim, J. A. 2007. Evolutionary balancing of multiple fitness limiting factors. Meirav Ziv Symposium, May 10, 2007, Sde Boqer, Israel. (invited talk).
- Rosenheim, J. A. 2007. Time limitation, egg limitation, and lifetime reproductive success in insects. Invited seminar, Volcani Institute, Israel. 12 June, 2007.
- Rosenheim, J. A. 2007. Evolutionary balancing of multiple fitness limiting factors in a stochastic world. Invited seminar, Uri Alon Lab, Weizmann Institute of Science, Israel. 8 July, 2007.
- Rosenheim, J. A. 2007. Bioinformatics for IPM: using consultant generated data to solve problems in applied insect ecology. Poster, Entomological Society of America, San Diego, 11 Dec 2007.
- Rosenheim, J. A. 2007. Egg limitation and lifetime reproductive success: theory and a test. Submitted talk, Entomological Society of America, San Diego, 11 Dec 2007.
- Rosenheim, J. A. 2008. "Response of cotton to *Lygus* herbivory". Cotton Workgroup Meeting, Tulare, CA 13 March, 2008.
- Rosenheim, J.A. 2008. "Cotton compensation for *Lygus* herbivory: an ecoinformatics approach". Pacific Branch Entomological Society of American, Napa, CA 2 April 2008. (Invited symposium).
- Rosenheim, J. A. 2008. "Evolutionary balancing of fitness limiting factors". Center for Population Biology weekly seminar, 7 Oct 2008. UC Davis.
- Rosenheim, J. A. 2008. "Bioinformatics for IPM: using consultant-derived data to solve difficult problems in applied insect ecology". Poster presentation, 16 Nov 2008 (national meeting of the Entomological Society of America, Reno, NV).
- Rosenheim, J. A. 2009. "Response of cotton to *Lygus* herbivory". Cotton Workgroup Meeting, Tulare, CA 5 May, 2009.
- Rosenheim, J. A. 2009. "Evolutionary balancing of fitness limiting factors". UC Berkeley, Department of Environmental Science, Policy, and Management, invited seminar, 11 May 2009.
- Rosenheim, J.A. 2009. "Evolutionary balancing of fitness limiting factors and the predictability of ecology". Plenary address, 1st International Entomophagous Insects Conference, Minneapolis, MN. 29 July, 2009.
- Rosenheim, J. A. 2010. "Trophic complexity in communities of biocontrol agents: opportunities and challenges", invited seminar, Association of Applied Insect Ecologists annual meeting, Feb. 2, 2010, Napa, CA.
- Rosenheim, J. A. 2010. "Ecoinformatics for IPM: expanding the applied ecologist's toolkit". USDA-AFRI poster presentation, Washington DC (23 Mar 2010).
- Rosenheim, J.A. 2010. "Cannibalism and its implications for biological control." USDA-AFRI poster presentation, Washington DC (23 Mar 2010).
- Rosenheim, J. A., 2010. "Impact of *Lygus* on cotton performance: an ecoinformatics approach". Cotton Workgroup/Cotton Incorporated meeting, 19 May, 2010, Tulare, CA.

- Rosenheim, J. A. and A. Forbes. 2010. "The role of phosphorus in mediating the interaction of *Lygus* with cotton." Cotton Workgroup/Cotton Incorporated meeting, 19 May, 2010, Tulare, CA.
- Rosenheim, J. A., and K. Gross. 2010. Ecoinformatics for IPM: expanding the applied ecologist's tool-kit. Invited talk, USDA NIFA workshop, 12 Dec 2010, San Diego, CA.
- Rosenheim, J. A. 2010. Evolutionary balancing of fitness limiting factors. Invited talk, Annual Meeting Entomological Society of America, 12 Dec 2010, San Diego, CA.
- Rosenheim, J. A. 2011. Impact of *Lygus* on cotton yield. Invited extension talk, 20 May 2011, Corcoran, CA.
- Rosenheim, J. A. 2011. Invited panelist, Stanford University Future Faculty Seminar, "Course Development and Classroom Management: Techniques for the New Professor", 8 Nov, 2011.
- Rosenheim, J. A. 2011. Pollen limitation: how common should we expect it to be? National meeting of the Entomological Society of America, Reno, NV 13 Nov 2011.
- Rosenheim, J.A. 2012. Ecoinformatics for IPM: expanding the tool-kit of the applied insect ecologist. Dept. Entomology, UCD seminar series. March 1, 2012.
- Rosenheim, J. A. 2012. Ecoinformatics: expanding the tool-kit for the applied insect ecologist. Invited Seminar, Dept. Environmental Science Policy and Management, University of California, Berkeley. 28 Sept 2012.
- Rosenheim, J. A. 2012. Agricultural entomology: how to make good progress in an era of shrinking research resources? Department of Entomology, University of Wisconsin, 31 October, 2012.
- Rosenheim, J. A. 2012. Ecoinformatics: using farmer-generated data to address key problems in agricultural entomology. Department of Entomology, University of Wisconsin, 1 November, 2012.
- Rosenheim, J. A. 2013. Ecoinformatics: using farmer-generated data to address key problems in agricultural entomology. Department of Entomology, Penn State University, 15 Feb 2013.
- Rosenheim, J. A. 2013. Ecoinformatics: using farmer-generated data to address key problems in agricultural entomology. Department of Entomology, Cornell University, 18 Feb 2013.
- Rosenheim, J.A. 2013. Ecoinformatics: a proof of concept, and a new model for integrating research and outreach in agricultural research. UCDANR PUR Workgroup, invited seminar presentation. 7 May, 2013 (Sacramento, CA).
- Rosenheim, J. A. 2013. Ecoinformatics ("Big Data") for agricultural entomology: using data from farms to solve problems on farms. University of California, Riverside, Department of Entomology invited seminar, 14 Oct 2013.
- Rosenheim, J.A. 2013. Ecoinformatics: putting the farmer at the center of IPM research. Invited symposium presentation, National meeting of the Entomological Society of America, Austin, Texas, November 10, 2013.
- Rosenheim, J.A. 2014. Ecoinformatics for agricultural entomology: using data from farms to solve problems on farms. Invited seminar presentation, Department of Entomology, University of Minnesota, St. Paul-Minneapolis. 9 Sept, 2014.

- Rosenheim, J.A. 2014. Ecoinformatics for agricultural entomology: using data from farms to solve problems on farms. Invited seminar presentation, Department of Entomology, University of Kentucky. 11 Sept, 2014.
- Rosenheim, J.A. 2014. Reducing yield loss to *Lygus*: effects of current-year and previous-year crop landscapes. DANR Cotton Workgroup, Tulare, CA. 16 Sept 2014.
- Rosenheim, J.A. 2014. Natural habitat and biocontrol services in agriculture. National Socio-Economic Synthesis Center (SESYNC), Annapolis, Maryland, 30 Sept 2014.
- Rosenheim, J.A., M. Meisner, and L. Hack. 2014. Using ecoinformatics ('big data') to detect ecosystem services in a cotton agroecosystems. Invited symposium presentation, National meeting of the Entomological Society of America, Portland, Oregon, 19 Nov 2014.
- Rosenheim, J.A. Invited address: Mining data collected by IPM professionals to improve pest management research. Annual meeting of the Association of Applied Insect Ecologists (AAIE), Napa, CA, 3 Feb 2015.
- Rosenheim, J.A. Theodore Hopkin's Distinguished Colloquium Award speaker, Kansas State University, Manhattan, KS, 23 March, 2015.
- Rosenheim, J.A. Contagious cannibalism. Invited presentation at Tercero Dormitories, UC Davis, 6 April, 2015.
- Rosenheim, J.A. Invited presentation, UCANR Entomology Workgroup annual meeting, Davis, CA, 10 April, 2015, "Ecoinformatics: using farmer data to solve problems on farms"
- Rosenheim, J.A. Outreach: Emergson Junior High, "Evolution of resistance to antibiotics"; Davis, CA, 8 June, 2015.
- Rosenheim, J.A. "Solving problems on farms using data from farms". AAIE citrus roundtable, Lindcove, CA; 13 October 2015.
- Rosenheim, J.A. "Crop rotation, plant nutrition, and changing sensitivity in cotton to *Lygus* herbivory". Invited program symposium presentation, national meeting of the Entomological Society of America, Minneapolis, MN; Nov 17, 2015.
- Rosenheim, J.A., and B. Higbee. "Sampling methods and development of thresholds for use under conventional and mating-disruption based management of navel orangeworm." Almond Board of California, Annual Meeting, Sacramento, CA 10 Dec, 2015.
- Rosenheim, J.A. "Ecoinformatics for agricultural entomology: using data from farms to solve problems on farms", California EPA, Department of Pesticide Regulation, Sacramento, CA, 11 Feb, 2016.
- Rosenheim, J.A. Trophic complexity in natural enemy communities: in the footsteps of Gary Polis. International Congress of Entomology, Orlando, FL, 27 Sept, 2016.
- Rosenheim, J.A. Crop rotation and plant nutrition modulate crop-pest interactions: evidence from ecoinformatics datasets. International Congress of Entomology, Orlando, FL, 27 Sept, 2016.
- Rosenheim, J.A. Ecoinformatics approaches to reduce use of high-risk insecticides on San Joaquin Valley citrus. 21 March, 2017, Sacramento, CA, California Department of Pesticide Regulation research symposium.
- Rosenheim, J. A. Remembering Les Ehler and his contributions to entomology. 5 April 2017. Pacific Branch meeting of the Entomological Society of American, Portland,

OR.

Rosenheim, J. A. Fitness-limiting factors in an uncertain world: case study with pollen limitation. 12 April 2017. Department of Entomology & Nematology, UC Davis departmental seminar.

Rosenheim, J. A. Using farmer data to solve problems for California citrus growers. 6 June, 2017. DANR Pesticide Use Reporting Workgroup, Davis, CA.

Research Grants

- USDA. \$152,600 1988-1991 Genetic improvement of parasitoid natural enemies (M. W. Johnson, B. E. Tabashnik, and JAR).
- University of Hawaii Research Council. \$6,000 1988-1989 Behavioral ecology of Hawaiian *Odynerus* wasps and the evolution of ambush predation in *Eupithecia* caterpillars.
- University of California, Davis Committee on Research. \$4,500 1991-93 Determinants of lifetime reproductive success of an insect parasitoid in the field.
- Pear Research Board. \$3,440 1991 Enhancing biological control of pear psylla with the specialist predator *Psenulus alienus* (Hymenoptera: Sphecidae).
- CDFR. \$100,000 1991-1993 Invasion biology of fruit fly pests. (UC Davis component of a joint UC/USDA proposal to CDFR; J. Carey, H. Dingle, L. Ehler, JAR, and R. Plant).
- UC IPM. \$35,000 1991-92 Developing an integrated management program for the cotton aphid, *Aphis gossypii* (JAR, E. E. Grafton-Cardwell and T. F. Leigh).
- Cotton Incorporated. \$15,000 1991 Problems with sticky cotton: developing an integrated management program for the cotton aphid, *Aphis gossypii* (JAR, E. E. Grafton-Cardwell and T. F. Leigh).
- USDA Western Regional IPM. \$109,035 1991-1994 Integration of Prune Refuges into a Grape Leafhopper Pest Management Program (JAR & J. Granett).
- CDFR. \$11,550 1992 Prune refuges for grape leafhopper management. (J. Granett & JAR).
- California Cotton State Support Program. \$53,000 1992 Sticky cotton action team: developing an integrated management program for the cotton aphid, *Aphis gossypii*.
- UC IPM. \$34,580 1992-93 Developing an integrated management program for the cotton aphid, *Aphis gossypii* (JAR, E. E. Grafton-Cardwell and T. F. Leigh).
- USDA Competitive Grant. \$93,953 1992-1994. Nutritional ecology of *Aphytis* parasitoids: non-host foods and host-feeding.
- Lodi-Woodbridge Winegrape Commission. \$3,260 1992. Integration of prune refuges into a grape leafhopper pest management program.
- Cotton Incorporated. \$52,900 1993 Sticky cotton action team: developing an integrated management program for the cotton aphid, *Aphis gossypii*.
- UC IPM. \$37,870 1993-94 Developing an integrated management program for the cotton aphid, *Aphis gossypii* (JAR, E. E. Grafton-Cardwell and T. F. Leigh).
- California State Support Board, Cotton Incorporated. \$50,000 1994 Sticky cotton action team: developing an integrated management program for the cotton aphid, *Aphis gossypii*.

California Crop Improvement Association. \$20,000 1993-94 Population outbreaks and management of the cotton aphid on Pima cotton.

Regional Research (W-185 Biological Control). \$6347. Biological Control in Pest Management Systems of Plants. 1993-1994.

Regional Research (W-185 Biological Control). \$2115. Biological Control in Pest Management Systems of Plants. July-Sept 1994.

USDA Competitive Grant. \$120,000. 1994-1996. Intraguild predation and biological control by generalist insect predators.

UCIPM. \$18,563. 1994-1995. Improving biological control of San Jose scale using flowering cover crops. G. E. Heimpel and JAR

California State Support Board, Cotton Incorporated. \$27,500 1995 Sticky cotton action team: developing an integrated management program for the cotton aphid, *Aphis gossypii*.

California Crop Improvement Association. \$20,000 1994-95 Population outbreaks and management of the cotton aphid on Pima cotton.

CDFR. \$87,616 1995-96 Quantifying the effect of early-season refugia on aphelinid populations through elemental labelling. A. C. Corbett and JAR

Regional Research (W-185 Biological Control). \$6970. Biological Control in Pest Management Systems of Plants. 10/94-6/95

Regional Research (W-185 Biological Control). \$2324. Biological Control in Pest Management Systems of Plants. July-Sept 1995.

UC SAREP. \$8,000 1996 Ecology of a group of generalist predators, the green lacewings, and their contribution to biological control in almonds and walnuts.

Regional Research (W-185 Biological Control). \$5408. Biological Control in Pest Management Systems of Plants. 10/95-6/96

Regional Research (W-185 Biological Control). \$1803. Biological Control in Pest Management Systems of Plants. 7/96-9/96.

USDA Competitive Grant. \$203,495. 1996-1999. Predator-predator interactions and the ecology of biological control.

UCIPM. \$20,000. 1996-1997. Ecology of predatory green lacewings: quantifying the impact of higher-order consumers.

UCIPM. \$20,000. 1997-1998. Ecology of predatory green lacewings: quantifying the impact of higher-order consumers.

California EPA. \$29,920. 1996 Validation and demonstration of predacious mite releases for management of spider mites in cotton. L. D. Godfrey, Rosenheim, and D. K. Giles

Cotton Pest Control Board. \$29,900. 1996. Validation and demonstration of predacious mite releases for management of spider mites in cotton. L. D. Godfrey, Rosenheim, and D. K. Giles

California State Support Board, Cotton Incorporated. \$44,858. 1997. Evaluation and demonstration of predaceous mite management of spider mites. JAR, L. D. Godfrey, and D. K. Giles.

UCD Faculty Research Grant Program \$1500. 1996-97 Predator-predator interactions and the top-down regulation of insect herbivore populations.

UC SAREP. \$10,500 1996-97 Ecology of a group of generalist predators, the green lacewings, and their contribution to biological control in almonds and walnuts.

Regional Research (W-185 Biological Control). \$7,500. Biological Control in Pest Management Systems of Plants. 10/96-6/97

Regional Research (W-185 Biological Control). \$2,500. Biological Control in Pest Management Systems of Plants. 7/97-9/97.

California EPA. \$29,920. 1997 Validation and demonstration of predacious mite releases for management of spider mites in cotton. L. D. Godfrey, Rosenheim, and D. K. Giles.

Cotton Pest Control Board. \$29,900. 1997. Validation and demonstration of predacious mite releases for management of spider mites in cotton. L. D. Godfrey, Rosenheim, and D. K. Giles

California State Support Board, Cotton Incorporated. \$42,750. 1998. Evaluation and demonstration of predaceous management of spider mites. JAR, L. D. Godfrey, and R. G. Colfer.

UC SAREP. \$5,500 1997-98 Ecology of a group of generalist predators, the green lacewings, and their contribution to biological control in almonds and walnuts.

California State Support Board, Cotton Incorporated. \$28,300. 1999. Development of broad spectrum pest resistant Maxxa germplasm. T. A. Wilkens and JAR.

California State Support Board, Cotton Incorporated. \$28,000 1999. Evaluation and demonstration of predaceous management of spider mites. R. G. Colfer, JAR, and L. D. Godfrey.

Regional Research (W-185 Biological Control). \$7,500. Biological Control in Pest Management Systems of Plants. 10/97-6/98

Regional Research (W-185 Biological Control). \$2,500. Biological Control in Pest Management Systems of Plants. 7/98-9/98.

Regional Research (W-185 Biological Control). \$8,000. Biological Control in Pest Management Systems of Plants. 10/98-9/99.

USDA-NBCI. \$4,904. 1999-2000. XII International Entomophagous Insects Workshop.

USDA. \$66,662. 1999-2001. Integrated pest management of leaf-feeding mites in papaya. Marshall W. Johnson, JAR, Ronald F. L. Mau, Randall T. Hamasaki, and Peter A. Follett.

California State Support Board, Cotton Incorporated. \$15,000. 2000. Evaluation of predaceous mite releases for management of spider mites. R. G. Colfer, JAR, and L. D. Godfrey.

Regional Research (W-185 Biological Control). \$8,000. Biological Control in Pest Management Systems of Plants. 10/99-6/00

Regional Research (W-185 Biological Control). \$2,000. Biological Control in Pest Management Systems of Plants. 7/00-9/00

USDA NRICGP-Biologically Based Pest Management. \$216,652. Terrestrial arthropod community structure: insights from stable isotopes. 9/01-8/04

USDA NRICGP-Entomology and Nematology. \$250,000. Determinants of lifetime reproductive success in *Anagrus* spp. parasitoids. 10/01-9/04

UCIPM. \$110,060. A new look at an old pest: what makes *Lygus* hungry for cotton squares? 7/01-6/04

Cotton Incorporated. \$36,671. A new look at an old pest: what makes *Lygus* hungry for cotton squares? 2002

Regional Research (W-185 Biological Control). \$5,650. Biological Control in Pest Management Systems of Plants. 10/00-6/01

USDA. \$56,646. 2001-2002. Integrated pest management of leaf-feeding mites in papaya. Marshall W. Johnson, JAR, Ronald F. L. Mau, Randall T. Hamasaki, and Peter A. Follett.

Regional Research (W-185 Biological Control). \$13,800. Biological Control in Pest Management Systems of Plants. 7/01-6/02

Cotton Incorporated. \$35,000. A new look at an old pest: what makes *Lygus* hungry for cotton squares? 2003

Regional Research (W-185 Biological Control). \$7,300. Biological Control in Pest Management Systems of Plants. 7/02-6/03

Cotton Incorporated. \$30,000. A new look at an old pest: what makes *Lygus* hungry for cotton squares? 2004

Viticulture Consortium. \$30,500. 2004-5. Are leafhoppers pests because we use sulfur? Cotton Incorporated. \$35,000. 2005. The impact of *Lygus* on cotton yield: plant responses to damage.

Regional Research (W-185 Biological Control). \$2,000. Biological Control in Pest Management Systems of Plants. 7/04-9/04

Regional Research (W-185 Biological Control). \$7,000. Biological Control in Pest Management Systems of Plants. 10/04-6/05

Cotton Incorporated. \$35,000. 2006. The impact of *Lygus* on cotton yield: plant responses to damage.

USDA NRICGP. \$343,500. 2007-2011. Bioinformatics for IPM: using consultant-generated data to solve difficult problems in applied insect ecology.

UCIPM. \$46,710. 2006-8. Quantifying the impact of *Lygus* on Pima cotton: a bioinformatics approach.

USDA RAMP. \$2,500,000. 2006-2010. Developing and implementing field and landscape level reduced-risk management strategies for *Lygus* in Western cropping systems. (co-PI; Peter Ellsworth, Peter Goodell, Megha Parajulee, Scott Bundy, Steve Naranjo, Jay Bancroft, Jackie Blackmer, Yves Carriere, Al Fournier, Larry Godfrey, James Hagler, Michael McGuire, John Palumbo, and Jay Rosenheim). My share of the budget: \$205,038.

Cotton Incorporated. \$23,000. 2007. The impact of *Lygus* on cotton yield: plant responses to damage.

Regional Research (W-185 Biological Control). \$8,325. Biological Control in Pest Management Systems of Plants. 10/05-9/06

Regional Research (W-185 Biological Control). \$8,325. Biological Control in Pest Management Systems of Plants. 10/06-9/07

Cotton Incorporated. \$23,010. 2008. The impact of *Lygus* on cotton yield: plant responses to damage.

UC Davis New Initiatives/Seed Grant Proposal. \$11,000. 2008. Combining Agroecology and Anthropology to Address Andean Pest Outbreaks: A Collaborative Approach. JAR, Richard McElreath, and Soroush Parsa.

Regional Research (W-185 Biological Control). \$8,100. Biological Control in Pest Management Systems of Plants. 10/07-9/08

Cotton Incorporated. \$23,000. 2009. The impact of *Lygus* on cotton yield: plant responses to damage.

McKnight Foundation. \$41,000. 2009. Agroecological management of Andean potato weevil. (S. Parsa, PI)

USDA-AFRI. \$337,783. 2009-2014. Cannibalism and its role in biological control. JAR & Y. H. Law.

Cotton Incorporated, CORE. \$10,602. 2009. Influence of phosphate on cotton square abscission response to *Lygus* bug feeding damage. JAR and A. Forbes.

Cotton Incorporated, California State Support Program. \$16,000. 2010. Decoding an enigmatic role for phosphorus in mediating the cotton-*Lygus* interaction. JAR and A. Forbes.

NSF, Mathematical Biology/Environmental Biology. \$404,027. 2010-2015. Evolutionary responses to limiting factors in heterogeneous environments. S. Schreiber, J. A. Rosenheim, and N. Williams (my share: \$123,206).

USAID. \$15,000. 2010-2011. USAID Linkage proposal - University of California, Davis and CIAT.

California Department of Pesticide Regulation. \$26,000. 2011-2013. Cotton Ecoinformatics: using data from California cotton growers to evaluate the effect of *Lygus hesperus* on cotton lint quality.

California Department of Pesticide Regulation. \$150,000. 2011-2014. Citrus Ecoinformatics: using data from California citrus growers to develop improved pest management recommendations.

California Department of Pesticide Regulation. \$168,000. 2014-2016. Ecoinformatics approaches to reduce use of high-risk insecticides on San Joaquin Valley citrus. Jay A. Rosenheim and Matthew H. Meisner.

NSF-ISF (US - Israel Binational Science Foundation). 2014-2018. \$151,500. Disease, movement, and the evolution of cannibalism. Jay A. Rosenheim and Moshe Coll.

Paramount Farming Inc. 2014-2015. \$8,262. Statistical modeling of navel orangeworm infestation of almonds. Jay A. Rosenheim.

UC DANR Competitive Grants. 2015-2020. \$249,826. Ecoinformatics ('Big Data') for improved citrus pest management. Jay A. Rosenheim, Elizabeth E. Grafton-Cardwell, Karen M. Jetter, Craig E. Kallsen, and David R. Haviland.

USDA-CPPM. 2016-2019. \$174,998. Ecoinformatics ("Big Data") for improved citrus pest management. Jay A. Rosenheim and Beth Grafton-Cardwell.

Almond Board of California. 2015-2016. \$27,133. Sampling methods and development of thresholds for use under conventional and mating disruption-based management of navel orangeworm. Jay A. Rosenheim, Bradley S. Higbee, Jonathan Ackerman, Matthew Meisner, George Livingston

Pending:

Citrus Research Board. 2017-2020. \$150,000. Improving citrus IPM practices for mandarins using grower data and experimentation. Jay A. Rosenheim, Elizabeth E. Grafton-Cardwell, and Bodil Cass. (pending)

Current teaching

BIS2B Introduction to biology: evolution and ecology. (sole instructor)
SAS110 Applications of evolution to human health, behavior, and agriculture. (sole instructor)

Annual graduate or undergraduate seminars

Undergraduate researchers mentored:

John Hunter, David Hongkham, Jeff Dupree, John Cramer, Madhuri Samant, Kimberly Steimann, Scott Dingh, Paul Biggs, Nerissa Freeman, Laura Peterson, Bryan Osborn, Christine Armer, David Kattari, Francisco Hernandez, Jane Adams, Jason May, Matt Daugherty, Nhan Le, Phil Moberg, Ramy Colfer, Fred Bradley, Judy Garcia, Rose Thomas, Samir Patel, Judy Andrade, Deanna Rosen, Diana Alvarado, Jeff Glanville, Jeannette Sison, Lisa Miller, Ryan Funk (all 1991-1993). Oct. 93: Erin Sullivan, Amy Yee, (March 1994) Erick Oshel, Drew Voit, Rana Turk, Claire Mears, Stephen Chesney, Jason Edwards, Vardit Danziger, Andrea Joyce, Jesse Heidman (BUSP), Celia Lamb, Nancy Pham, Melody Ng, Yen-Thu Cao, Simon Hsu, Brandy Vosburg (BUSP), Roberto Rodriguez (BUSP), Janel Rodas, Cynthia Hsu, Steve Oh, Rachel Goeriz, Savoy Sebalo, (2/97) Michael Niemela, Janice Pfeiff, Kenneth Lawson, Julie Davis, Gail Siu, Suzette Villanueva, Tobias Glik, Paola, 4/98: Katherine Dennis (BUSP), Rachel Goeriz (PUF recipient), Nicholas Ruiz, Bonny , **2001:** Katherine Chmiel, Chris Matthews, Matt Judd, Erin Duffy, Michael Kabler, Kelly Lister; Noeil Babou, Ali Sadduk; (undergrads/recent grads working with Valerie in Hawaii: Tarrah Ward, Christina Ciampa, Emily Bjerre, Janice Pereira, Lee Laney, Joselito Diez) **2002:** Megan Williams, Amanda Foster, Benessa Espino, Ann Hendrickson, Elizabeth Trueblood; **2003:** Megan Williams (continuing); John Lytle, Corinne Klein, Kallie Cristobel; **2004** Molly Bench, Francesca Della Ripa, Vincent Bicocca, Brianne Crabtree; **2005:** Molly Bench, Arash Ng, Monica Chau, Vincent Bicocca. **2006.** Elizabeth Frost, Khanh Nguyen, Claire Connolly, Jacqueline Kishmirian, Mai Nguyen, Leah Shell. **2007.** Leah Shell, Jacqueline Kishmirian, Elizabeth Frost, Gwendolyn Knudsen, Michael Valainis, Mai Nguyen. **2008.** Mai Nguyen, Michelle Stutey, Jagveer Athwal, Gipan Dhillon, Derek Bozick, Crystal Perreira. **2009** (repeats: Crystal Perreira, Mikel Delgado (Summer Undergraduate Research in Ecology/Engineering (SURE)), Abdullah Sediqi (NSF Young Scholars Program), Karen Dove, Calvin Thigpen, Derek Bozick, Corinne Stouthamer; **2010** (repeat: Karin Dove, Corinne Stouthamer); new: Tierra Groff, Cory Fernandes, Lucinda Ye, Michael Park, Collin Edwards. **2011** repeats: Lucinda Ye, Collin Edwards, Corinne Stouthamer. New: Timothy Fong. **2012** Anthony Ye, Paige Lenz, George Zaragoza, Eric Hong, Patricia Bonilla, Michael Hernandez, Phillip Mann. **2013** Michael Hernandez, Patricia Bonilla, Anna Schiller, Anthony Le, Ashley Findley, Aaron Goodman, Randall Kuffel, Bryant Trinh; **2014** Randall Kuffel, Benjamin Maples, (Billy's helpers: Sam, George, . . . ?); **2015** Randall Kuffel (**PUF grant recipient**, Spring 2015), Benjamin Maples, Kyra Santa Cruz (RSPiB), Tobias Mueller (RSPiB), Philip Campos, Ann Le, Sam Rusoff, Alex Sinclair; **2016** Randall Kuffel, Kyra Santa Cruz (RSPiB), Tobias Mueller (RSPiB), Ann Le; **2017** Tobias Mueller, Keiji Yokota

Graduate students mentored

Brook Murphy, PhD 1994
George Heimpel, PhD 1995
Jorge Cisneros, MS 1997
Terri Young, MS 1997
Ramana Colfer, PhD 2002
Teresa Leonardo, PhD 2004
Erik Nelson, PhD 2003
Valérie Fournier, PhD 2003
Kenneth Spence, PhD 2007
Sarina Jepsen, MS 2005
Christopher Matthews, MS 2006
Margaret Sherriffs, MS 2010
Frances Sivakoff, PhD 2010
Yao-Hua Law, PhD 2010
Soroush Parsa, PhD 2010
William Krimmel, PhD 2015
Matthew Meisner, PhD 2015
Ash Zemenick, PhD expected (current)
Nicholas Booster, PhD (current)
Michael Culshaw-Maurer, PhD (current)

Postdoctoral researchers mentored

Andrew Corbett (1991-1996)
Lawrence Wilhoit (1991-1993)
Robert Lalonde (1993)
Paul Ode (1994-1996)
Timothy Collier (1996)
Gail Langellotto (2002-2003)
Andrew Zink (2002-2007)
Jason Harmon (2003-2005)
Andrew Forbes (2009-2010)
Michal Segoli (2009-2012)
Moran Segoli (2010-2011)
Asaf Sadeh (2011-2014)
Tobin Northfield (2011-2013)
Bodil Cass (2016-present)