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Education

B.S. (Entomology and Genetics), 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)

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

Handling/Associate Editor/Subject-Matter Editor:

Annual Review of Entomology (1996-2001)
Oecologia (1997-2011)
Journal of Insect Science (2008-2011)
Guest Editor*, Ecology: Special Feature on Intraguild predation* (2005-2007)
Ecology and *Ecological Monographs*, (2011-present)

Editorial Boards:

Biological Control (2000-present)
Entomologia Experimentalis et Applicata (2004-present)
Proceedings of the Hawaiian Entomological Society (1996-2002)

Research Focus

Behavioral, population, and evolutionary ecology of parasitoid-host and predator-prey interactions. Direct applications to integrated pest management and biological control in agriculture.

Peer-reviewed 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. 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: Thripidae) on the yield, growth, and carbon allocation pattern in cucumbers. Journal of Economic Entomology 83:2092-2101.

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.

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.

Tabashnik, B. E., J. A. Rosenheim, and M. A. Caprio. 1992. What do we really know about management of insecticide resistance? Pages 124-134 *in* I. Denholm, editor. *Resistance '91*. Elsevier, Essex, U.K.

Minkenberg, O. P. J. M., M. Tatar, and J. A. Rosenheim. 1992. Egg load as a major source of variability in insect foraging and oviposition behavior. Oikos 65:134-142.

Johnson, M. W., L. C. Caprio, J. A. Lynch, B. E. Tabashnik, J. A. Rosenheim, and S. C. Welter. 1992. Impact of greenhouse whitefly, *Trialeurodes vaporariorum* (Westwood), (Homoptera: Aleyrodidae) on yield of fresh market tomatoes. Journal of Economic Entomology 85:2370-2376.

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.

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.

Rosenheim, J. A., and L. R. Wilhoit. 1993. Early-season populations of *Aphis gossypii*: to spray or not to spray is not the only question. Agriculture, Ecosystems and Environment 43:353-356.

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.

Rosenheim, J. A., and B. E. Tabashnik. 1993. Generation time and evolution. Nature 365:791-792.

Rosenheim, J. A., L. R. Wilhoit, and C. A. Armer. 1993. Influence of intraguild predation among generalist insect predators on the suppression of an herbivore population. Oecologia 96:439-449.

Spollen, K. M., J. A. Rosenheim, and M. A. Hoy. 1994. Intraspecific variation in response to pesticides in *Aphytis melinus* DeBach from California citrus: results of natural and artificial selection between 1984-1991. Pages 191-208 in D. Rosen (ed.), *Advances in the Study of* Aphytis. Intercept Ltd., Andover, U.K.

Rosenheim, J. A., and G. E. Heimpel. 1994. Sources of intraspecific variation in oviposition and host-feeding behavior. Pages 41-78 in D. Rosen (ed.), *Advances in the Study of* Aphytis. Intercept Ltd., Andover, U.K.

Mangel, M., J. A. Rosenheim, and F. R. Adler. 1994. Clutch size, offspring performance, and inter-generational fitness. Behavioral Ecology 5:412-417.

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.

Heimpel, G. E., J. A. Rosenheim, and J. M. Adams. 1994. Behavioral ecology of host feeding in *Aphytis* parasitoids. Norwegian Journal of Agricultural Sciences, Supplement 16:101-115.

Heimpel, G. E., and J. A. Rosenheim. 1995. Dynamic host-feeding strategies by the parasitoid *Aphytis melinus*: the choice between current and future reproduction. Journal of Animal Ecology 64:153-167.

Rosenheim, J. A., H. K. Kaya, L. E. Ehler, J. J. Marois, and B. A. Jaffee. 1995. Intraguild predation among biological control agents: theory and evidence. Biological Control 5:303-335.

Corbett, A., B. C. Murphy, J. A. Rosenheim, and P. Bruins. 1996. Labeling an egg parasitoid, *Anagrus epos* (Hymenoptera: Mymaridae), with rubidium within an overwintering refuge. Environmental Entomology 25:29-38.

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.

Murphy, B. C., J. A. Rosenheim, and J. Granett. 1996. Habitat diversification for improving biological control: abundance of *Anagrus epos* (Hymenoptera: Mymaridae) in grape vineyards. Environmental Entomology 25:495-504.

Rosenheim, J. A., P. Nonacs, and M. Mangel. 1996. Sex ratios and multifaceted parental investment. American Naturalist 148:501-535.

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.

Rosenheim, J. A. & L. Godfrey. 1996. UC Statewide IPM Manual: IPM for Cotton, pp. 94-97.

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.

Heimpel, G. E., M. Mangel, and J. A. Rosenheim. 1998. Effects of time limitation and egg limitation on lifetime reproductive success of a parasitoid in the field. American Naturalist 152:273-289.

Murphy, B. C., J. A. Rosenheim, J. Granett, C. H. Pickett, and R. V. Dowell. 1998. Measuring the impact of a natural enemy refuge: the prune tree/vineyard example. Pages 297-309 in: C. H. Pickett and R. L. Bugg (eds), Enhancing Natural Control of Arthropod Pests Through Habitat Management. Wiley & Sons.

Cisneros, J. J., and J. A. Rosenheim. 1998. Changes in the foraging behavior, within-plant vertical distribution and micro-habitat selection of a generalist predator: an age analysis. Environmental Entomology 27:949-957.

Ode, P. J., and J. A. Rosenheim. 1998. Sex allocation and the evolutionary transition between solitary and gregarious parasitoid development. American Naturalist 152:757-761.

Mayhew, P. J., P. J. Ode, I. C. W. Hardy, and J. A. Rosenheim. 1998. Parasitoid clutch size and irreversible evolution. Ecology Letters 1:139-141.

Rosenheim, J. A. 1999. The relative contributions of time and eggs to the cost of reproduction. Evolution 53:376-385.

Rosenheim, J. A., D. D. Limburg, and R. G. Colfer. 1999. Impact of generalist predators on a biological control agent, *Chrysoperla carnea*: direct observations. Ecological Applications 9:409-417.

Kattari, D., G. E. Heimpel, P. J. Ode, and J. A. Rosenheim. 1999. First records of hyperparasitism by *Ablerus clisiocampae* (Ashmead) (Hymenoptera: Aphelinidae). Proceedings of the Washington Entomological Society 101:640-644.

Rosenheim, J. A. 1999. Characterizing the cost of oviposition in insects: a dynamic model. Evolutionary Ecology 13:141-165.

Rosenheim, J. A., G. E. Heimpel, and M. Mangel. 2000. Egg maturation, egg resorption and the costliness of transient egg limitation. Proceedings of the Royal Society of London, Series B 267:1565-1573.

Brodeur, J., and J. A. Rosenheim. 2000. Intraguild interactions in aphid parasitoids. Entomologia Experimentalis et Applicata 97: 93-108.

Godfrey, L. D., J. A. Rosenheim, and P. B. Goodell. 2000. Cotton aphid emergence as a pest of San Joaquin Valley cotton. California Agriculture 54(6):26-29.

Colfer, R. G., and J. A. Rosenheim. 2001. Predation on immature parasitoids and its influence of aphid population suppression. Oecologia 126:292-304.

Rosenheim, J. A. 2001. Source-sink dynamics for a generalist insect predator in a habitat with strong higher-order predation. Ecological Monographs 71:93-116.

Limburg, D. D., and J. A. Rosenheim. 2001. Extrafloral nectar consumption and its influence on the survival and development of an omnivorous predator, larval *Chrysoperla carnea*. Environmental Entomology 30:595-604.

Brennan, E. B., S. A. Weinbaum, J. A. Rosenheim, and R. Karban. 2001. Heteroblasty in *Eucalyptus globulus* (Myricales: Myricaceae) affects ovipositional and settling preferences of *Ctenarytaina eucalypti* and *C. spatulata* (Homoptera: Psyllidae). Environmental Entomology 30:1144-1149.

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.

Rosenheim, J. A., and J. Brodeur. 2002. A simple trap to study small-scale movement by walking arthropods. Entomologia Experimentalis et Applicata 103:283-285.

Hopper, K. R., J. A. Rosenheim, T. Prout, and S. Oppenheim. 2003. Within-generation bet hedging: a seductive explanation? Oikos 101:219-222.

Fournier, V., J. A. Rosenheim, J. Brodeur, L. O. Laney, and M. W. Johnson. 2003. Herbivorous mites as ecological engineers: indirect effects on arthropods inhabiting papaya foliage. Oecologia 135:442-450.

Rosenheim, J. A., and A. Corbett. 2003. Omnivory and the indeterminacy of predator function: can a knowledge of foraging behavior help? Ecology 84:2538-2548.

Colfer, R. G., J. A. Rosenheim, L. D. Godfrey, and C. L. Hsu. 2003. Interactions between the augmentatively released predaceous mite *Galendromus occidentalis*

(Acari: Phytoseiidae) and naturally occurring generalist predators. Environmental Entomology 32:840-852.

Colfer, R. G., J. A. Rosenheim, L. D. Godfrey, and C. L. Hsu. 2004. Evaluation of large-scale releases of western predatory mite for spider mite control in cotton. Biological Control 30:1-10.

Rosenheim, J. A., D. D. Limburg, R. G. Colfer, V. Fournier, C. L. Hsu, T. E. Leonardo, and E. H. Nelson. 2004. Herbivore population suppression by an intermediate predator, *Phytoseiulus macropilis*, is insensitive to the presence of an intraguild predator: an advantage of small body size? *Oecologia*140: 577-585.

Nelson, E. H., C. E. Matthews, and J. A. Rosenheim. 2004. Predators reduce prey population growth by inducing changes in prey behavior. *Ecology* 85: 1853-1858.

Rosenheim, J. A., R. E. Goeriz, and E. F. Thacher. 2004. Omnivore or herbivore? Field observations of foraging by *Lygus hesperus*. *Environmental Entomology* 33:1362-1370.

Rosenheim, J. A. 2004. Top predators constrain the habitat selection games played by intermediate predators and their prey. *Israel Journal of Zoology* 50:129-138.

Fournier, V., J. A. Rosenheim, J. Brodeur, and M. W. Johnson. 2004. Inducible responses in papaya: impact on population growth of herbivorous mites and powdery mildew under field conditions. *Environmental Entomology* 33: 1088-1094.

Zink, A. G., and J. A. Rosenheim. 2004. State-dependent sampling bias in insects: implications for monitoring western tarnished plant bugs. *Entomologia Experimentalis et Applicata* 113:117-123.

Fournier, V., J. A. Rosenheim, J. Brodeur, and M. W. Johnson. 2004. Population dynamics and within-plant distribution of the rust mite *Calacarus flagelliseta* (Acari: Eriophyidae) on papaya in Hawaii. *Journal of Economic Entomology* 97:1563-1569.

Rosenheim, J. A., T. E. Glik, R. E. Goeriz, and B. Rämert. 2004. Linking a predator's foraging behaviour with its effects on herbivore population suppression. *Ecology* 85:3362-3372.

Mondor, E. B., J. A. Rosenheim, and J. F. Addicott. 2005. Predator-induced transgenerational phenotypic plasticity in the cotton aphid. *Oecologia* 142:104-108.

Rosenheim, J. A. 2005. Intraguild predation on *Orius tristicolor* by *Geocoris* spp. and the paradox of irruptive spider mite dynamics in California cotton. *Biological Control* 32:172-179.

Langellotto, G. A., J. A. Rosenheim, and M. R. Williams. 2005. Enhanced carbon enrichment in parasitoids (Hymenoptera): a stable isotope study. *Annals of the Entomological Society of America* 98:205-213.

Spence, K. O., and J. A. Rosenheim. 2005. Stable isotope analysis: a comparative field study of variation. *Oecologia* 146:89-97.

Zink, A. G., and J. A. Rosenheim. 2005. State-dependent feeding behavior by western tarnished plant bugs influences flower bud abscission in cotton. *Entomologia Experimentalis et Applicata* 117:235-242.

Nelson, E. H., and J. A. Rosenheim. 2006. Encounters between aphids and their predators: the relative frequencies of disturbance and consumption. *Entomologia Experimentalis et Applicata* 118:211-219.

Rosenheim, J. A., K. Steinmann, G. A. Langellotto, and A. G. Zink. 2006. Estimating the impact of *Lygus hesperus* on cotton: the insect, plant, and human observer as sources of variability. *Environmental Entomology* 35:1141-1153.

Langellotto, G. A., J. A. Rosenheim, and M. R. Williams. 2006. Assessing trophic interactions in a guild of primary parasitoids and facultative hyperparasitoids: stable isotope analysis. *Oecologia* 150:291-299.

Rosenheim, J. A., and J. P. Harmon. 2006. The influence of intraguild predation on the suppression of a shared prey population: an empirical reassessment. Pages 1-20 *in*: J. Brodeur and G. Boivin (eds.), *Trophic and Guild Interactions in Biological Control*, Springer, New York.

Fournier, V., J. A. Rosenheim, J. Brodeur, J. M. Diez, and M. W. Johnson. 2006. Multiple plant exploiters on a shared host: testing for nonadditive effects on plant performance. *Ecological Applications* 16:2382-2398.

Jepsen, S. J., J. A. Rosenheim, and C. E. Matthews. 2007. The impact of sulfur on the reproductive success of *Anagrus* spp. parasitoids in the field. *BioControl* 52:599-612.

Jepsen, S. J., J. A. Rosenheim, and M. E. Bench. 2007. The effect of sulfur on biological control of the grape leafhopper, *Erythroneura elegantula*, by the egg parasitoid *Anagrus erythroneurae*. *BioControl* 52:721-732.

Spence, K. O., V. T. Bicocca, and J. A. Rosenheim. 2007. Friend or foe? A plant's induced response to omnivory. *Environmental Entomology* 36:623-630

Vance-Chalcraft, H. D., J. A. Rosenheim, J. R. Vonesh, C. W. Osenberg, and A. Sih. 2007. The influence of intraguild predation on prey suppression and prey release: a meta-analysis. *Ecology* 88:2689-2696.

Rosenheim, J. A., S. J. Jepsen, C. E. Matthews, D. S. Smith, and M. R. Rosenheim. 2007. Portrait of an ephemeral adult stage: egg maturation, oviposition, and longevity of the gall midge *Rhopalomyia californica*. *Annals of the Entomological Society of America* 100: 549-561.

Rosenheim, J. A. 2007. Intraguild predation: new theoretical and empirical perspectives. *Ecology* 88: 2679-2680.

Zink, A. G., and J. A. Rosenheim. 2008. Stage-specific predation on *Lygus hesperus* affects its population stage structure. *Entomologia Experimentalis et Applicata* 126:61-66.

Mondor, E. B., J. A. Rosenheim, and J. F. Addicott. 2008. Mutualist-induced transgenerational polyphenisms in herbivore populations. *Functional Ecology* 22:157-162.

de Valpine, P., and J. A. Rosenheim. 2008. Field-scale roles of density, temperature, nitrogen, and predation on aphid population dynamics. *Ecology* 89:532-541.

Rosenheim, J. A., and M. Coll. 2008. Pest-centric versus process-centric approaches in agricultural entomology. *American Entomologist* 54:70-72.

Rosenheim, J. A., S. J. Jepsen, C. E. Matthews, D. S. Smith, and M. R. Rosenheim. 2008. Time limitation, egg limitation, the cost of oviposition, and lifetime reproduction by an insect in nature. *American Naturalist* 172:486-496.

Rosenheim, J. A., U. Alon, and G. Shinar. 2010. Evolutionary balancing of fitness-limiting factors. *American Naturalist* 175:662-674.

Segoli, M., A. R. Harari, J. A. Rosenheim, A. Bouskila, and T. Keasar. 2010. The evolution of polyembryony in parasitoid wasps. *Journal of Evolutionary Biology* 23:1807-1819.

Sivakoff, F. J., J. A. Rosenheim, and J. Hagler. 2011. Using protein marking to study insect long distance dispersal. *Methods in Ecology and Evolution* 2:77-85.

Parsa, S., R. Ccanto, and J. A. Rosenheim. 2011. Resource concentration dilutes a key pest in indigenous potato agriculture**.** *Ecological Applications* 21:539-546.

Law, Y. H., and J. A. Rosenheim. 2011. Effects of combining an intraguild predator with a cannibalistic intermediate predator on a species-level trophic cascade. *Ecology* 92:333-341.

Forbes, A. A., and J. A. Rosenheim. 2011. Plant responses to insect herbivore damage are modulated by phosphorus nutrition. *Entomologia Experimentalis et Applicata* 139:242-249.

Rosenheim, J. A., S. Parsa, A. A. Forbes, W. A. Krimmel, Y. H. Law, M. Segoli, M. Segoli, F. S. Sivakoff, T. Zaviezo, and K. Gross. 2011. Ecoinformatics for integrated pest management: expanding the applied insect ecologist's tool-kit. *Journal of Economic Entomology* 104: 331-342.

Rosenheim, J. A. 2011. Stochasticity in reproductive opportunity and the evolution of egg limitation in insects. *Evolution* 65:2300-2312.

Gross, K., and J. A. Rosenheim. 2011. Quantifying secondary pest outbreaks in cotton and their monetary cost with causal inference statistics. *Ecological Applications* 21: 2770-2780.

Lucas, É., and J. A. Rosenheim. 2011. Influence of extraguild prey density on intraguild predation in Heteroptera: a review of the evidence and a case study. *Biological Control* 59:61-67.

Segoli, M., and J. A. Rosenheim. 2012. Modeling the consequences of agricultural intensification on pest damage. *Agriculture, Ecosystems & Environment* 150:38-44.

Parsa, S., R. Ccanto, E. Olivera, M. Scurrah, J. Alcázar, and J. A. Rosenheim. 2012. Explaining Andean potato weevils in relation to local and landscape features: a facilitated ecoinformatics approach. *PLoSOne* 7(5): e36533. doi:10.1371/journal.pone.0036533.

Sivakoff, F. J., J. A. Rosenheim, and J. Hagler. 2012. Relative dispersal ability of a key agricultural pest and its predators in an annual agroecosystem. *Biological Control* 63:296-303.

Law, Y. H., and J. A. Rosenheim. 2013. Presence of conspecific females motivates egg cannibalism owing to lower risk of filial cannibalism. *Animal Behaviour* 85:403-409.

Rosenheim, J. A. 2013. Costs of *Lygus* herbivory on cotton associated with farmer decision-making: an ecoinformatics approach. *Journal of Economic Entomology* 106:1286-1293.

Segoli, M., and J. A. Rosenheim. 2013. Spatial and seasonal variation in sugar availability for insect parasitoids in agricultural fields and consequences for reproductive success. *Biological Control* 67:163-169.

Segoli, M., and J. A. Rosenheim. 2013. The link between egg production and host density in a parasitoid insect: comparison among agricultural and natural habitats. *Functional Ecology* 27:1224-1232.

Segoli, M., and J. A. Rosenheim. 2013. Limits to the reproductive success of two insect parasitoid species in the field. *Ecology* 94:2498-2504.

Segoli, M., R. Stouthamer, C. M. Stouthamer, P. Rugman-Jones, and J. A. Rosenheim. 2013. The effect of *Wolbachia* on the lifetime reproductive success of its insect host in the field. *Journal of Evolutionary Biology* 26:2716-2720.

Rosenheim, J. A., and M. H. Meisner. 2013. Ecoinformatics can reveal yield gaps associated with crop-pest interactions: a proof-of-concept. *PLOS ONE* 8(11):e80518.

Sivakoff, F. J., J. A. Rosenheim, P. Dutilleul, and Y. Carrière. 2013. Influence of the surrounding landscape on crop colonization by an insect pest. *Entomologia Experimentalis et Applicata* 149:11-21.

Meisner, M. H., and J. A. Rosenheim. 2014. Ecoinformatics reveals effects of crop rotational histories on cotton yield. *PLOS ONE* 9(1):e85710.

Rosenheim, J. A., N. M. Williams, and S. J. Schreiber. 2014. Parental optimism versus parental pessimism in plants: how common should we expect pollen limitation to be? *American Naturalist* 184:75-90.

Schreiber, S. J., J. A. Rosenheim, L. D. Harder, and N. W. Williams. 2015. Evolutionary and ecological consequences of multiscale variation in pollen receipt on plant reproduction. *American Naturalist* 185:E14-29.

Banks, H.T., J.E. Banks, Kathryn Link, J.A. Rosenheim, Chelsea Ross, and K.A. Tillman. 2015. Model comparison tests to determine data information content. *Applied Mathematics Letters* 43:10-18.

Segoli, M., and J. A. Rosenheim. 2015. The effect of body size on the oviposition success of a minute insect parasitoid in nature. *Ecological Entomology* 40:483-485.

Andreazza, F., and J. A. Rosenheim. 2015. Absence of transgenerational phenotypic plasticity in fecundity in the parasitoid *Anagrus erythroneurae* (Hymenoptera: Mymaridae). *Journal of Insect Science* 15(1):138. (DOI: 10.1093/jisesa/iev122).

Meisner, M. H., I. Tagkopoulos, and J. A. Rosenheim. 2015. Markov decision processes for optimal management of agricultural pests. *Ecosphere* (*in press*).

Rosenheim, J. A., S. J. Schreiber, and N. M. Williams. 2015. Does an 'oversupply' of ovules cause pollen limitation? *New Phytologist* (*in press*)

Rosenheim, J. A., N. M. Williams, S. J. Schreiber, and J. M. Rapp. 2016. Modest pollen limitation of lifetime seed production is in good agreement with modest uncertainty in whole-plant pollen receipt. *American Naturalist* 187:(*in press*).

Sadeh, A., and J. A. Rosenheim. 2016. Cannibalism amplifies the spread of vertically-transmitted pathogens. *Ecology* (*in press*)

Banks, H. T., J. E. Banks, J. A. Rosenheim, and K. Tillman. 2016. Modelling populations of *Lygus hesperus* on cotton fields in the San Joaquin Valley of California: the importance of statistical and mathematical model choice. *Journal of Biological Dynamics* (*in press*)

Sadeh, A., T. D. Northfield, and J. A. Rosenheim. The epidemiology of parasite transmission through cannibalism. *Ecology* (*in revision*).

Edwards, C., M. Segoli, and J. A. Rosenheim. Field aggregation causes decreased pest abundance due to limited dispersal and host detection ability. *Agriculture, Ecosystems & Environment* (*submitted*).

Meisner, M. H., T. Zaviezo, and J. A. Rosenheim. Landscape effects on *Lygus hesperus* densities, cotton yield, and pesticide use. *Agriculture, Ecosystems & Environment* (*submitted*).

Meisner, M. H., I. Tagkopoulous, and J. A. Rosenheim. Predicting yield and pest infestations in cotton: a machine learning approach. (*in prep.*)

Zemenick, K. A., and J. A. Rosenheim. The influence of opportunistic visitors on flower visitor network structure. (*in prep.*)

Livingston, G., L. Hack, K. Steinmann, E. E. Grafton-Cardwell, and J. A. Rosenheim. An ecoinformatics approach to field scale evaluation of pesticide efficacy and hazards in California citrus. (*in prep.*)

Tscharntke, T., Daniel Karp, Rebecca Chaplin-Kramer, Péter Batáry, Fabrice deClerck, Claudio Gratton, Anthony Ives, Mattias Jonsson, Emily Martin, Alejandra Martinez, Tim Meehan, Megan O'Rourke, Katja Poveda, Jay Rosenheim, Adrien Rusch, Nancy Schellhorn, Stephen Wratten. When natural habitat fails to provide biological pest control. (*in prep.*)

Extension publications:

Daane, K. M., Coviello, R. L., Bentley, W. J., Phillips, P. A., Triapitsyn S. V., and Rosenheim, J. A. 2013. Variegated grape leafhopper, pp 222-234. In: L. J. Bettiga (ed.), Grape Pest Management, Third Edition, University of California, Division of Agriculture and Natural Resources.

Daane, K. M., Rosenheim, J. A., Smith, R. J., and Coviello, R. L. 2013. Western grape leafhopper, pp 202-219. In: L. J. Bettiga (ed.), Grape Pest Management, Third Edition, University of California, Division of Agriculture and Natural Resources.

Research Grants

USDA.$152,600 1988-1991 Genetic improvement of parasitoid natural enemies (M. W. Johnson, B. E. Tabashnik, and JAR).

U. H. Research Council. $6,000 1988-1989 Behavioral ecology of Hawaiian Odynerus wasps and the evolution of ambush predation in Eupithecia caterpillars.

U.C.D. 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).

CDFA. $100,000 1991-1993 Invasion biology of fruit fly pests. (UC Davis component of a joint UC/USDA proposal to CDFA; 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).

CDFA. $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.

CDFA. $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). 2014-2017. $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.

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

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.

Teaching

PPPM 202A	Guest examiner, final exam, Dec. 14, 1990. Guest examiner, final exam, 13 Dec., 1991.
ENT111	Guest lecture, March 13, 1991.
ENT200A	Two lectures (Jan. 23, 1991) on evolution of pesticide resistance.
ENT295	Seminar in biological control, Winter 1991 (2 units; 7 students).
ENT200B	Two weeks of lectures (April, May 1991) on population

regulation and natural enemy ecology.

PPPM202A Guest lecture and laboratory coordinator (19 November 1991). (Field crop insect identification.)

ECL 298/ENT298 Ecology of Insect Parasitoids. (New course.) Winter 1992. (3 units; 10 students enrolled + 9 auditors) Approved as ENT205 for inclusion in UCD course catalogue.

ENT200A 5 lectures (Winter 1992) on resistance evolution, parasitoid biology.

U. C. Berkeley Guest lecture in Insect Ecology (23 April 1992)

PPPM202B Spring 1992 (10 enrolled; 4 units).

ENT 290 Spring 1992 (5 enrolled; 2 units), "Foundations of Ecology".

ENT 199 Fall 1992 Paul Biggs (3 units).

PPPM202A Guest lecture and laboratory coordinator (16 November 1992).

PPPM202A Guest examiner, final oral exam (8 December 1992).

ENT200A 7 hours lecture; Winter 1993.

ENT/ECL 290 Winter 1993 Ecology of arthropod sex ratio (8 students)

Biology Undergraduate Scholars Program (BUSP) for minority students in the biological sciences:

Judy Garcia 2/93-
Fred Bradley 2/93-
Scott Dingh 2/92-10/92
Brandy Vosburg 4/96-

ENT200B 5 hours lecture; Spring 1993

PPPM 202A Guest lecture, 22 November, 1993.

PPPM 202A Guest examiner, lab practical final, 10 December, 1993.

PPPM 202A Guest examiner, lecture final exam, 17-18 December, 1993.

Mentor for student PUF recipient (Ramana Colfer); Dec. 93-June 94.

ENT 200A Winter 1994; 1.75 weeks.

ENT/PBG 206 Winter 1994.

PPPM 202B Spring, 1994.

ENT 200B 2 hours lecture + 2 hours participate Spring 1994

PPPM 202A 3 hours guest lecture/field trip (Fall 1994)

PBG 298 "The Triumph of the Darwinian Method" Fall 1994

ENT 290 "Environmental Issues Associated with Enhancing the Impact of Biological Control Agents" Fall 1994

PPPM 202A Guest examiner (12 December 1994)

BIS 1B Winter 1995.

ENT 200A Winter 1995; 1.75 weeks.

ENT199 Yen Cao (2 units, Fall 95).

PPPM 202A 2 hours guest lecture/field trip (October 20, 1995)
PPPM 202A 3 hours; guest examiner on final oral exam (Dec. 14, 1995)

ENT206 Winter 1996 (6 enrolled + 3 auditors)

ECL290 Winter 1996 (“Population Dynamics”)

ENT 200A Winter 1996 (1.5 weeks)

BIS 1B 2 sections, Spring 1996 (with Hugh Dingle)

PPPM 202B Spring 1996

Guest lecture, BUSP-SHR program (“Insect community ecology”), July 1, 1996.

PPPM 202A Field lecture (Oct 18, 1996).

PPPM 202A Guest Examiner (Dec. 6 and 13, 1996).

BIS 1B 2 sections, Winter 1997 (with Robert Kimsey).

PPPM 202A Field lecture (Oct 14, 1997).

ENT 199 Fall 1997 (Rachel Goeriz).

ECL290 Fall 1997 ("Population ecology of insect predators and parasitoids"; 2 units; 12 enrolled)

PPPM 202A Guest Examiner (Dec. 10, 1997).

ENT206 Winter 1998. (14 enrolled.)

PBG290 Guest lecture on grantsmanship (Spring 1998)

ENT99 Spring 1998 (Tobias Glik; Katherine Dennis)

PPP202B Spring 1998 (enrollment: 10 graduate students)

Guest lecture, Population and Community Ecology (BIO 19), Harvard University (April 21, 1999); "Biological control and community ecology" (55 students).

PBG299 Seminar in Population Biology ("Natural Selection in the Wild"); Sept. 1999; 7 students.

ENT 199 Winter 2000. (Kate Chmiel: insect ecology).

ENT206 Winter 2000.

ASE 105 Guest lab session (4 April, 2001; 2 hours)

ENT 199 Spring 2001. (Toby Glik; insect ecology).

ENT 297 Spring 2001. Seminar in Insect Behavior: Ecology of sexually-transmitted diseases. (4 students) Student-initiated topic.

ENT294/ECL290 Fall 2001. Seminar in Insect Ecology: Adaptationism and Optimality (12 students, 1 postdoc, 2 faculty participating)

ENT206 Winter 2002.

PPP 202B Spring 2002. 10 students.

ENT199 Fall 2002 (Elizabeth Trueblood)

BIS1B Winter 2003 50% of lectures and discussions (2 sections)

BIS1B Winter 2004 50% of lectures and discussions (2 sections)

ENT 199 Fall 2004. 4 units (Molly Bench) and 2 units (Vincent Bicocca) – independent research projects.

PBG 290 Fall 2004. Life on a Young Planet: the first three billion years of evolution on earth. (5 enrolled)

ECL/IPM 290 Fall 2004. Genetics, evolution and biological control. (11 enrolled).

ENT 199 Fall 2005. Monica Chau

ECL/PBG discussion group: evolution of virulence (Fall 2005)

ECL 290 Guest discussion co-leader (14 Nov, 2005); habitat diversification and biocontrol.

BIS 1B co-taught 2 with Bob Kimsey. Winter 2005.

"Trainer" in the UCD NSF Interdisciplinary Training for Undergraduates in Biological and Mathematical Sciences, a 5-year grant received by the Davis campus (Rick Grosberg, PI; $905,000).

PBG 200B 6 hours of lectures (Population biology of parasites and mutualists): Winter 2006

BIS 1B co-taught 2 sections (625 students total) with Bob Kimsey. Winter 2006.

Graduate Student Reading Group: Evolutionary ecology of parasitism and mutualism. Fall 2005. Winter 2006.

Graduate Workshop: Evolutionary Ecology (Hebrew University of Jerusalem); October 2006-Jan. 2007. 15 graduate student participants.

Guest Lecture: Community ecology of arthropod predators. To international graduate M.Sc. students at Hebrew University of Jerusalem (24 Dec. 2006).

Winter 2008. BIS1B. 50% of two sections (ca. 700 students total enrollment). PLUS a Davis Honor's Challenge student (Vanessa Santillan).

Fall 2008. ENT 294/ECL 290: Behavioral ecology of insect parasitoids (8 enrolled). 2 unit participatory seminar.

Fall 2008: Collaborative learning in mathematics and biology (CLIMB): EVE 133. I taught a 4.5-hour module of this course.

Winter 2009. BIS2B. Sole instructor of one section (enrollment = 360 students). This is a new class, and I developed an entirely new set of lectures.

Fall 2009: Collaborative learning in mathematics and biology (CLIMB): EVE 133. I taught a 2-week module of this course (6 hours of lecture).

Fall 2009. Freshman Seminar, "Evidence for evolution". (enrollment = 14).

Fall 2009. PBG 298? Graduate seminar in Darwinian Agriculture (enrollment = 7).

Winter 2010. BIS2B. Sole instructor of one section (enrollment = 360 students).

Winter 2011. BIS2B. Sole instructor of one section (enrollment = 360 students).

Spring 2011. ENT199 (2 units; Corinne Stouthamer).

Winter 2012. BIS2B. Sole instructor of one section (enrollment = 360 students).

Winter 2012. FRS001. Deciphering the primary literature in insect biology. 2 units, enrollment = 13 students. (instructor with support from Louie Yang and Joanna Chiu).

Winter 2012. Davis Honors Challenge student (1 student from my BIS2B class).

Spring 2012. SAS 198 (Applications of evolution in medicine, human behavior, and agriculture). Sole instructor; 2 units (enrollment = 15 students).

Fall 2012. ECL 290 (NSF GRF grant proposal development). 5 students, of which 3 applications were successful (60% funding rate!).

Fall 2012. ENT198. Research Scholars class on effective grant-writing. 4 students.

Spring 2013. SAS 198 (Applications of evolution in medicine, human behavior, and agriculture). Sole instructor; 2 units (enrollment = 12 students).

Spring 2013. ECL290/ENT294. Biological control: ecology and applications. Sole instructor.

Winter 2014. BIS2B.

Spring 2014. SAS 110.

Winter 2015. BIS2B.

Spring 2015. Guest lecture in ENT295: "Ecological intensification: habitat diversification and pest management"

Fall 2015. ENT295/ECL290. Plant nutrition and insect pest management. (co-taught with Christian Nansen)

Undergraduates employed in the laboratory

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 Rodriquez (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 Zaragoza); **2015** Randall Kuffel (**PUF grant recipient**, Spring 2015), Benjamin Maples, Kyra Santa Cruz (RSPIB), Tobias Mueller (RSPIB). (To add: 4 students who worked with Ash at Sagehen, summer of 2015).

Graduate Student advising

Major professor: George Heimpel (Ph.D. program in entomology); recipient of the College of Agricultural and Environmental Sciences John E. Kinsella Prize for 1996. This prize is awarded to the most outstanding Ph.D. dissertation submitted in the college. The committee cited the "quality and originality" of the dissertation, the "impact of the research" and the "importance of the research to the College's mission to serve agriculture, the environment, and human health and development". George will receive a plaque and a $1000 check.

Major professor: Jorge Cisneros (M.Sc. 1997; plant protection and pest management)

Major professor: Terri Young (M.Sc. 1997; entomology)

Co-major professor: Brook Murphy (Ph.D. 1994; entomology)

First-year Mentor: Laura Peck (M.Sc. 1996; population biology).

Major professor: Ramana Colfer (Ph.D., Population Biology; Sept. 1994 – Mar. 2002).

Co-Major professor: Teresa Leonardo (Ph.D.; population biology; Sept 1996- Mar 2004)
- received NSF Predoctoral Fellowship
- received NSF Dissertation Improvement Grant (March 2000)

Major professor: Erik Nelson (Ph.D.; population biology; Sept 1996- Sept 2003)

Major professor: Valerie Fournier (Ph.D.; Laval University; Sept. 1999 – Sept 2003)

Major professor: Ken Spence (Ph.D., entomology; Sept. 2001 – 2007).

Major professor: Sarina Jepsen (M.Sc., entomology; Sept. 2003 – 2005).

Major professor: Chris Matthews (M.Sc., IPM; Jan. 2004 – 2006).

Major professor: Margaret Sherriffs (M.Sc.; population biology; Sept. 2005- 2010)
(Recipient: Fulbright Award for research year in Italy).

Major professor: Frances Sheller (Ph.D.; Ecology; Sept. 2005-present)
(Recipient: EPA STAR Fellowship, 2007-2010).

Major professor: Yao Hua Law (Ph.D.; Entomology; Sept. 2006- 2010)

Major professor: Soroush Parsa (Ph.D.; Ecology; Sept. 2006- 2009) (Recipient: Fulbright Award for research year in Bolivia, which fed into his graduate work).

Major Professor: William Krimmel (Ph.D.; Ecology; 2009- present). Recipient of NSF GRF (2011-2014).

Co-Major Professor: Matthew Meisner (Ph.D.; Population Biology; 2011- present). Recipient of NSF GRF (2011-2014).

Major Professor: Katelyn Zemenick (Ph.D.; Ecology; 2011-present). Recipient of NSF GRF (2011-2014).

Co-Major Professor: Michael Culshaw-Maurer (Ph.D.; Ecology; 2015-present)

Major Professor: Nicholas Booster (Ph.D.; Entomology; 2015-present)

Graduate Advisor: Graduate Group in Population Biology (Spring 93-present)

Master Graduate Advisor: Entomology Graduate Program

Chair: Population Biology Graduate Group (2005-2009)

Thesis Committee Member:

Judith Nelson (Ph.D. program in entomology; 1991- November 1995).
Michael Maxwell (Ph.D. program in animal behavior; 1991- June 1995).
Jong-yoon Kim (Ph.D. program in entomology; 1991- June 1996).
Barbara Root-Kelley (M.Sc. program in ecology; 1991- June 1995).
Laurie McLennan (Ph.D. program in ecology; 1991-Dec. 1998).
James Brazzle (M.Sc. program in entomology; 1992- August 1995)
Kenneth Fuson (M.Sc. program in entomology; 1992- Sept 1995)
Tamara Fraizer (Ph.D. program in population biology; 1993-June 1996).
Sherri Graves (Ph.D. program in ecology; 1993 - March 1998).
Chazz Hesselein (M.Sc. program in PPPM; 1993).
Merry Holliday-Hanson (Ph.D. program in entomology; 1993- June 1997).
Christopher Wilcox (M.Sc. program in ecology; 1994- June 1996).
Lynn Wunderlich (M.Sc. program in PPPM; Dec. 1995 - Sept 1997).
Mitchell Baker (Ph.D. program in Animal Behavior; April 96-Dec 98).
Roger Sher (Ph.D. program in Entomology; Feb. 96- Mar 2000).
Anurag Agrawal (Ph.D. program in Population Biology; Dec. 96- June 1999).
James Campbell (Ph.D. program in Entomology; March 97-Dec 98).
Ruth Winchell (Ph.D. program in Entomology; July 1995-May 1998).
Jennifer Thaler (Ph.D. program in Entomology; Jan 1996- June 1999).
Eric Brennan (Ph.D. program in Ecology; Oct. 1997-June 2000).
Jorge Cisneros (Ph.D. program in Entomology; 1998 – June 1999).
Jennifer Rudgers (Ph.D. program in Population Biology; Jan. 1999- July 2002).
James Umbanhowar (Ph.D. in Population Biology; Jan. 1999- Dec 2001).
Francisco Badenes (M.Sc., PPPM; Mar 2000 – June 2001).

Paula Flaugher (M.Sc., PPPM; Apr 2000 -).
Holly Ganz (Ph.D. program in Entomology; June 2000 - Jan 2004).
Tiffany Bensen (Ph.D. program in Ecology; Feb 2001 –July 2004).
Lien Luong (Ph.D. program in Entomology; Dec 2001 – Sept 2004).
Denise Piechnik (Ph.D. program in Ecology; Mar 2002 – June 2007).
Louie Yang (Ph.D. program in Population Biology; Nov. 2002 – June 2006).
Candace Low (Ph.D. program in Ecology; April 2003-Dec 2003).
S. Steve Arounsack (Ph.D. program in Ecology; April 2004- Mar 2006).
Dominic Reisig (M.Sc. program in IPM; April 2004-June 2005; Ph.D. in Entomology, July 2006-? June 2009)
Karey Windbiel (M.Sc. program in IPM; Nov 2004-June 2006).
Soroush Parsa (M.Sc. program in IPM; Nov 2004-August 2005).
Nila Kreidich (M.Sc. program in IPM; Mar 2005 – June 2006).
Jarrett Byrnes (Ph.D. in Population Biology; April 2005 – June 2008).
Tara Armijo-Prewitt (M.Sc. in Entomology; June 2005- May 2007).
Rebecca O'Flaherty (M.Sc. in Entomology; June 2005-June 2011).
Joel Buettner (M.Sc. in IPM; Jan 2005-Dec. 2006).
Karthik Ram (Ph.D. in Ecology; June 2004-June 2009).
Soroush Parsa (Ph.D. in Ecology; Sept 2006-June 2009).
Yao-Hua Law (Ph.D. in Entomology; Sept 2006-Dec 2010).
Jon O'Brien (M.S. in Ecology; January 2008- June 2008).
Kimberly Steinmann (Ph.D. in Ecology; May 2008-Dec. 2011).
Emily Symmes (Ph.D. in Entomology; July 2008-Aug 2012).
Ian Pearse (Ph.D. in Entomology; Nov 2008-Dec 2011).
Alex Van Dam (Ph.D. in Entomology; Sept 2009 - 2013).
William Krimmel (Ph.D. in Ecology; Sept 2009 – Jan 2015). NSF GRF
William Wetzel (Ph.D. in Population Biology; July 2011 – Dec 2014).
Patrick Grof-Tisza (Ph.D. in Ecology; March 2012 – Dec 2015).
K. Ash Zemenick (Ph.D. in Ecology; Sept. 2011 -). NSF GRF
Matthew Meisner (co-advised; Ph.D. in Population Biology; Sept. 2011 – Aug 2015). NSF GRF, USDA Pre-doctoral Fellowship
Katharina Ullman (Ph.D. in Entomology; May 2012 - Dec 2014).
Meredith Cenzer (Ph.D. in Entomology; May 2012 -).
Danica Maxwell (Ph.D. in Entomology; January 2013-).
Leslie Saul-Gershenz (Ph.D. in Entomology; March 2013-).
Kathy Hughes (Ph.D. in Population Biology; April 2013 -).
Shahla Farzan (Ph.D. in Population Biology; Dec 2013 -).
Marshall McMunn (Ph.D. in Population Biology; April 2014-).
Eric LoPresti (Ph.D. in Ecology; April 2015-).