

JOHN EDWARD DUNLEY
CURRICULUM VITAE

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Education

Ph.D. 1993 Oregon State University
 Major: Entomology Minor: Genetics
M.S. 1989 Oregon State University
 Major: Entomology Minor: Statistics
B.S. 1986 Southern Oregon St. Coll.
 Major: Biology Minor: Computer Science

Professional Experience

2001- Associate Entomologist / Extension Entomologist E-3, Dept. of
 Entomology, Washington State University - Tree Fruit Research and
 Extension Center, Wenatchee, Wash.
1995 -2001 Assistant Entomologist / Extension Entomologist E-2, Dept. of
 Entomology, Washington State University - Tree Fruit Research and
 Extension Center, Wenatchee, Wash.
1992-94 Post-Doctoral Research Associate, Dept. of Entomological Sciences,
 University of California, Berkeley, Calif.
1989-92 Graduate Research Assistant, Ph.D. Student, Dept. of Entomology,
 Oregon State University, Corvallis, Oregon.
1986-89 Graduate Research Assistant, M.S. Student, Dept. of Entomology, Oregon
 State University, Corvallis, Oregon.

Professional Article, Refereed

Payne, J.C., and J.E. Dunley. 2002. Use of the elemental marker rubidium to study dispersal of aquatic insects. *J. N. Amer. Benthol. Soc.* 21:715-727.
Brunner, J.F., J.E. Dunley, M.D. Doerr, and E.H. Beers. 2001. Effect of pesticides on *Colpoclypeus florus* (Walker) (Hymenoptera: Eulophidae) and *Trichogramma platneri*, potential parasitoids of leafrollers in Washington. *J. Econ. Entomol.* 94:1075-1084.
Knight, A.L., J.E. Dunley, and R.K. Jansson. 2001. Baseline monitoring of codling moth (Lepidoptera: Tortricidae) larval response to benzoylhydrazine insecticides. *J. Econ. Entomol.* 94:264-270.
Reding, M.E., E.H. Beers, J.F. Brunner, and J.E. Dunley. 2001. Influence of time period and prey availability on fruit damage to apple by *Campylomma verbasci* (Hemiptera: Miridae). *J. Econ. Entomol.* 94:33-38.

- Fernandez, D. E., E. H. Beers, J. F. Brunner, M. E. Doerr and J. E. Dunley. 2001. Effect of mineral oil on white apple leafhopper (*Typhlocyba pomaria* McAtee (Homoptera: Cicadellidae) oviposition. J. Entomol. Sci. 36:237-243.
- Dunley, J.E., and S.C. Welter. 2000. Correlated insecticide cross-resistance in organophosphate resistant codling moth. J. Econ. Entomol. 93: 955-962.
- Lee, R.E., J.D. Litzgus, J.A. Mugnano, M.R. Lee, D.R. Horton, and J.E. Dunley. 1999. Evaluation of ice-nucleating microorganisms for reducing the supercooling capacity and cold-hardiness of *Cacopsylla pyricola* (Homoptera: Psyllidae). Can. Entomol. 131: 715-723.
- Li, X., and J.E. Dunley. 1998. Optimal sampling and spatial distribution patterns of adult *Ixodes pacificus*, *Dermacentor occidentalis*, and *D. variabalis* ticks. Exp. Appl. Acarol. 22(4):233-248.
- Beers, E.H., H. Riedl, and J.E. Dunley. 1998. Evidence for resistance to abamectin and reversion to susceptibility to fenbutatin oxide in spider mite (Acari: Tetranychidae) populations in the Pacific Northwest. J. Econ. Entomol. 91:1-6.
- Dunley, J.E., and B.A. Croft. 1994. Gene flow measured by allozymic analysis in pesticide resistant *Typhlodromus pyri* Scheuten occurring within and near apple orchards. Exp. Appl. Acarol. 18:256-259.
- Croft, B.A., R.H. Messing, J.E. Dunley, and W.B. Strong. 1993. Effects of relative humidity on eggs and immatures of *Neoseiulus fallacis*, *Amblyseius andersoni*, *Metaseiulus occidentalis*, and *Typhlodromus pyri* (Acarina: Phytoseiidae): implications for biological control on apple, caneberry, strawberry, and hop. Exp. Appl. Acarol. 17:451-459.
- Dunley, J.E., and B.A. Croft. 1992. Dispersal and gene flow of pesticide resistance traits in phytoseiid and tetranychid mites. Exp. Appl. Acarol. 14: 332-325.
- Dunley, J.E., R.H. Messing, and B.A. Croft. 1991. Levels and genetics of organophosphate resistance in Italian and Oregon biotypes of *Amblyseius andersoni* Chant (Acari: Phytoseiidae). J. Econ. Entomol. 84: 750-755.
- Dunley, J.E., and B.A. Croft. 1990. Dispersal between and colonization of apple by *Metaseiulus occidentalis* Nesbitt and *Typhlodromus pyri* Scheuten (Acarina: Phytoseiidae). Exp. Appl. Acarol. 10: 137-149.

Professional Articles, Refereed - Unpublished (In press)

- Dunley, J. E., E. H. Beers and J. F. Brunner. On-farm implementation of an acaricide resistance management strategy on pear in northcentral Washington. J. Tree Fruit Prod.

Professional Article, Non-Refereed

- Brunner, J.F., S. Welter, C. Calkins, R. Hilton, E. Beers, J. Dunley, T. Unruh, A. Knight, R. Van Steenwyk; P. Van Buskirk. 2001. Mating disruption of codling moth: a perspective from the Western United States. IOBC WPRS Bulletin Vol. 25(1): 207-215
- Dunley, J.E., B.M. Greenfield, and L. Bennett. 2002. Post-bloom control of pear psylla. Arthropod Management Tests 27:A59.
- Dunley, J.E., B.M. Greenfield, and L. Bennett. 2002. Late season control of pear psylla. Arthropod Management Tests 27:A61.
- Dunley, J.E., B.M. Greenfield, and L. Bennett. 2002. Control of codling moth in pear. Arthropod Management Tests 27:A63.

- Dunley, J.E., B.M. Greenfield, and L. Bennett. 2002. Control of grape mealybug in pear. *Arthropod Management Tests* 27:A57.
- Dunley, J.E., B.M. Greenfield, and L. Bennett. 2002. Control of pear psylla with particle-film technologies and conventional materials. *Arthropod Management Tests* 27:A58.
- Dunley, J.E., B.M. Greenfield, and L. Bennett. 2002. Pre-bloom control of pear psylla. *Arthropod Management Tests* 27:A62.
- Dunley, J.E., B.M. Greenfield, and L. Bennett. 2002. Control of two-spotted spider mites—handgun trial. *Arthropod Management Tests* 27:A64.
- Dunley, J.E., B. Greenfield, L. Bennett, and G. Hannig. 2001. Control of pear psylla. *Arthropod Management Tests* 26:A30.
- Dunley, J.E., B. Greenfield, L. Bennett, and G. Hannig. 2001. Control of pear psylla with abamectin using a conventional airblast sprayer and a modified 'PropTec' sprayer. *Arthropod Management Tests* 26:A31.
- Dunley, J.E., B. Greenfield, L. Bennett, and G. Hannig. 2001. Control of pear psylla with diflubenzuron, esfenvalerate, and pyriproxifen. *Arthropod Management Tests* 26:A32.
- Dunley, J.E., B. Greenfield, L. Bennett, and G. Hannig. 2001. Control of pear psylla with diflubenzuron and pyriproxifen. *Arthropod Management Tests* 26:A33.
- Dunley, J.E., and B.A. Croft. 1990. Ecological factors influencing spatial distribution of OP resistance in *Typhlodromus pyri* and *Metaseiulus occidentalis* in the Willamette and Hood River Valleys of Oregon. *Pest. Resist. News.* 2: 23-24.

Books and Chapters in Books

- Dunley, J.E., and B.A. Croft. 1996. Eriophyoids as competitors of other phytophagous mites. Chap. 4.2. *In: World Crop Pests, Vol. 6: Eriophyoid Mites and Their Control.* E.E. Lindquist, M.W. Sabelis & W. Helle, eds. Elsevier Scientific. Amsterdam, The Netherlands.
- Croft, B.A., and J.E. Dunley. 1992. Habitat patterns and pesticide resistance. Chap. 23. *In: Evolution of Insect Pests: The Patterns of Variation,* K.C. Kim and B.A. McPherson (eds.), J. Wiley & Sons, New York. 765 pp.

Abstracts

- Dunley, J.E. 2003. Organic insect pest management on an areawide basis in pear. National Meeting of the Entomological Society of America, Cincinnati, OH Oct 24-27, 2003.
- Dunley, J.E. 2003. The use of rubidium in marking natural populations of insects for the study of dispersal. Annual Meeting of the Pacific Branch, Entomological Society of America, Tucson, AZ March 23-25, 2003.
- Dunley, J.E., S.C. Welter, and E.H. Beers. 2000. Resistance management on an areawide basis in annual versus perennial cropping systems. Proceedings XXI International Congress of Entomology, Foz do Igausso, Brazil, August 20-26 2000.
- Beers, E.H., J.F. Brunner, J.E. Dunley, and M. Doerr. 2000. Selective use of particle film technology in Washington pome fruit pest management. . Proceedings XXI International Congress of Entomology, Foz do Igausso, Brazil, August 20-26 2000.
- Welter, S.C., J.F. Brunner, E. Beers, R. Hilton, A. Knight, C. Calkins, B. Higby, and J. E. Dunley. 2000. Areawide manangement of lepidopterous pests in perennial cropping systems: opportunities and constraints. Proceedings XXI International Congress of Entomology, Foz do Igausso, Brazil, August 20-26 2000.

- Brunner, J. F., C. Calkins, S. Welter, E. Beers, A. Knight, R. Hilton, J. Dunley. 1999. Codling moth, *Cydia pomonella*, areawide management on apple and pear in the western United States - the pilot project. XIVth International Plant Protection Congress, July 25-30 1999, Tel Aviv, Israel.
- Fernandez, D., E. Beers, and J. Dunley. 1999. Effect of Orchex 796 horticultural mineral oil on the oviposition inhibition of white apple leafhopper, *Typhlocyba Pomaria* Mcatee, pp. 37-38, Research Reports: 73rd Annual Western Orchard Pest and Disease Management Conference, Imperial Hotel, Portland, OR.
- Beers, E., J. Dunley, and R. Zack. 1999. Thrips species affecting tree fruits, and the effect of spinosad on thrips, pp. 81-82, Research Reports: 73rd Annual Western Orchard Pest and Disease Management Conference, Imperial Hotel, Portland, OR.
- Beers, E.H., J.J. Brown, J.F. Brunner, J.E. Dunley, P. Landolt, T. Unruh, R. Zack. 1998. Research trends in tree fruit IPM in the Pacific Northwest. ESA National Meeting, 8-12 November, 1998, Las Vegas Hilton, Las Vegas, NV.
- Beers E.H., J.E. Dunley and J.F. Brunner. 1998. Washington tree fruit IPM in transition: from spray and pray to today. 82nd Annual Meeting, Pacific Branch, Entomological Society of America. 21-24 June, 1998.
- Beers, E.H., J. Dunley, and J. Brunner. 1997. Bioassays with horticultural mineral oil on mites and leafhoppers. 71st Annual Western Orchard Pest and Disease Management Conference, 8-10 January, 1997, Imperial Hotel, Portland, OR, pp. 87.
- Beers, E.H., J. Dunley, and J. Brunner. 1997. Field experiments with horticultural mineral oil on mites and leafhoppers. 71st Annual Western Orchard Pest and Disease Management Conference, 8-10 January, 1997, Imperial Hotel, Portland, OR, pp.85.
- Dunley, J.E., and R.H. Miller. Augmentative biological control of grape mealybug in pear. Proceedings XX International Congress of Entomology. Florence, Italy, August 26-Sept. 1, 1996.
- Welter, S.C., and J.E. Dunley. The Randall Island Project: Areawide use of codling moth mating disruption. Proceedings XX International Congress of Entomology, Florence, Italy, August 26-Sept. 1 1996.
- Welter, S.C., and J.E. Dunley. The Randall Island Project: Areawide use of codling moth mating disruption. Proceedings 3rd National IPM Symposium, Washington, DC, February 22-24, 1996.
- Dunley, J.E., and S.C. Welter. Areawide resistance management of codling moth using pheromone mating disruption. Proceedings 3rd National IPM Symposium. Washington, DC, February 22-24, 1996.
- Brunner, J.F., G. Grove, B. Beers, J. Dunley, M.D. Doerr, and B. Hill. 1996. Summer oil for apple pest control. 70th Annual Western Orchard Pest and Disease Management Conference, 10-12 January, 1996, Imperial Hotel, Portland, OR, pp. 39.
- Brunner, J.F., B. Beers, and J. Dunley. 1996. Project area description and participation: codling moth mating disruption on apple. 70th Annual Western Orchard Pest and Disease Management Conference, 10-12 January, 1996, Imperial Hotel, Portland, OR, pp. 69-70.

Extension Bulletins, Circulars, etc

- Smith, T.J., J.E. Dunley, E.H. Beers, J.F. Brunner, G.G. Grove, K.M. Williams, F. Peryea, R. Parker, D.F. Mayer, R. Woodruff, C. Daniels, T. Maxwell, and S. Roberts. 2003 Crop Protection Guide for Tree Fruits in Washington (EB 0419).

- Smith, T.J., J.E. Dunley, E.H. Beers, J.F. Brunner, G.G. Grove, K.M. Williams, F. Peryea, R. Parker, D.F. Mayer, R. Woodruff, C. Daniels, T. Maxwell, and S. Roberts. 2002 Crop Protection Guide for Tree Fruits in Washington (EB 0419).
- Smith, T.J., J.E. Dunley, E.H. Beers, J.F. Brunner, G.G. Grove, K.M. Williams, F. Peryea, R. Parker, D.F. Mayer, R. Woodruff, C. Daniels, T. Maxwell, and S. Roberts. 2001 Crop Protection Guide for Tree Fruits in Washington (EB 0419).
- Dunley, J., G. Kupferman, and M. Willett. Pear Pest Management in the Pacific Northwest. 1999. Winter Pear Control Committee / EPA Pesticide Environmental Stewardship Program Informational Brochure.
- Smith, T.J., J. Dunley, E.H. Beers, J.F. Brunner, G.G. Grove, K.M. Williams, F. Peryea, R. Parker, D.F. Mayer, R. Woodruff, C. Daniels, T. Maxwell, and S. Roberts. 2000 Crop Protection Guide for Tree Fruits in Washington (EB 0419).
- Smith, T.J., J. Dunley, E.H. Beers, J.F. Brunner, G.G. Grove, K.M. Williams, F. Peryea, R. Parker, D.F. Mayer, R. Woodruff, C. Daniels, T. Maxwell, and S. Roberts. 1999 Crop Protection Guide for Tree Fruits in Washington (EB 0419).
- Smith, T.J., J. Dunley, E.H. Beers, J.F. Brunner, G.G. Grove, K.M. Williams, F. Peryea, R. Parker, D.F. Mayer, R. Woodruff, C. Daniels, T. Maxwell, and S. Roberts. 1998 Crop Protection Guide for Tree Fruits in Washington (EB 0419).
- Beers, E.H., G.G. Grove, K.M. Williams, F. Peryea, R. Parker, D.F. Mayer, G. Witmer, A. Schreiber, C. Daniels, T. Maxwell, and S. Roberts. 1997 Crop Protection Guide for Tree Fruits in Washington (EB 0419).
- Beers, E.H., G.G. Grove, K.M. Williams, R. Parker, D.F. Mayer, J.E. Steuber, A. Schreiber, C. Daniels, T. Maxwell, and S. Roberts. 1996 Crop Protection Guide for Tree Fruits in Washington (EB 0419).
- Dunley, J.E. 1993. Integrated mite management. Univ. of Calif. Cherry IPM Guide. S.M. Southwick (Ed.). Univ. of Calif., Div. of Agr. Nat. Res. 52 pp.

Section 18 Petitions

1995. Use of Fenoxycarb (Comply) for Prebloom Use on Pear Against Pear Psylla. [granted].
1995. Use of Abamectin (Agri-Mek) for use on Washington Pear Against Mites and Pear Psylla. [granted].
1995. Use of imidacloprid (Provado) for Use on Washington Pear Against Late-Season Pear Psylla. [denied].
1996. Use of Fenoxycarb (Comply) for Prebloom Use on Pear Against Pear Psylla. [granted].
1997. Use of Fenoxycarb (Comply) for Prebloom Use on Pear Against Pear Psylla. [granted].
1998. Use of Fenoxycarb (Comply) for Prebloom Use on Pear Against Pear Psylla. [denied].
1998. Use of Pyriproxifen (Knack) for Prebloom Use on Pear Against Pear Psylla. [granted].
1998. Use of Diflubenzuron (Dimilin) for Prebloom Use on Pear Against Pear Psylla. [denied].
1999. Use of Pyriproxifen (Esteem, Knack) for Prebloom Use on Pear Against Pear Psylla. [granted].
1999. Use of Diflubenzuron (Dimilin) for Prebloom Use on Pear Against Pear Psylla. [granted].
2000. Use of Diflubenzuron (Dimilin) for Prebloom Use on Pear Against Pear Psylla. [denied].
2001. Use of Thiamethoxam (Actara) for Prebloom Use on Pear Against Pear Psylla. [registered].
2001. Use of Bifenazate (Acramite) for Use on Pear Against Spider Mites. [granted].

Proceedings

- Dunley, J.E. 2003. Organic insect pest management on an areawide basis in pear. 4th National IPM Conference, Indianapolis, IN April 8-10, 2003.
- Dunley, J.E. 2003. Areawide management of codling moth and other tree fruit pests: resistance management in action. CIRI Resistance Management Meeting, Indianapolis, IN April 8-10, 2003.
- Dunley, J.E., and B.M. Greenfield. 2003. Areawide organic management in pear. Western Orchard Pest and Disease Management Conference, Portland, OR Jan 15-17, 2003.
- Dunley, J.E., and B.M. Greenfield. 2003. Pear psylla control-New materials, new prospects. Western Orchard Pest and Disease Management Conference, Portland, OR Jan 15-17, 2003.
- Dunley, J.E., and B.M. Greenfield. 2003. Control of grape mealybug on pear: An investigation of rates and timings. Western Orchard Pest and Disease Management Conference, Portland, OR Jan 15-17, 2003.
- Dunley, J.E., and B.M. Greenfield. 2003. New insecticides for control of codling moth on pear. Western Orchard Pest and Disease Management Conference, Portland, OR Jan 15-17, 2003.
- Dunley, J.E., and B.M. Greenfield. 2003. New acaricides for control of spider mites on pear. Western Orchard Pest and Disease Management Conference, Portland, OR Jan 15-17, 2003.
- Dunley, J.E. Areawide organic insect pest management in pear: the Peshastin Creek Project. Washington State Horticultural Association Annual Meeting, Yakima, WA, December 2002.
- Dunley, J.E., B.M. Greenfield, and L.H. Bennett. 2002. Control of pear psylla nymphs, Western Orchard Pest and Disease Management Conference, Portland, OR Jan 9-11 2002.
- Dunley, J.E., B.M. Greenfield, and L. Bennett. 2002. Control of twospotted spider mites - handgun trial, Western Orchard Pest and Disease Management Conference, Jan 9-11 2002, Portland OR
- Dunley, J.E., B.M. Greenfield, and L. Bennett. 2002. Neonicotinyls and IGRs for control of codling moth in pears, Western Orchard Pest and Disease Management Conference, Jan 9-11 2002, Portland OR.
- Dunley, J.E., B.M. Greenfield, and L. Bennett. 2002. Use of new and registered compounds for control of grape mealybug on pears, Western Orchard Pest and Disease Management Conference, Jan 9-11 2002, Portland OR .
- Brunner, J F, W Jones, E Beers, J Dunley, J Tangren. 2002. Pest Management Practices in Washington: A Journey Through Time. Proc. Wash. State Horticulture Assoc. 97: 177-184.
- Dunley, J.E., E.H. Beers, J.F. Brunner, and S.C. Welter. 2001. Use of pheromone mating disruption for areawide resistance management in tree fruit . Proceedings Asian Pan-Pacific Society for Chemical Ecology, Penang, Malaysia, August 10-15 2001.
- Dunley, J.E., J.F. Brunner, M.D. Doerr, and E.H. Beers. 2001. Baseline insecticide tolerances and cross-resistance in *Chorisoneura rosaceana* and *Pandemis pyrusana* pp 115-116. 75th Annual Western Orchard and Disease Management Conference, Portland, OR. Oregon State University, Corvallis, OR

- Beers, E.H., P. Himmel, J.E. Dunley, J.F. Brunner, A. Knight, B. Higbee, R. Hilton, P. VanBuskirk, S. Welter. 1999. Secondary pest abundance in different management systems. Proc. Wash. State Hort. Assoc. 94: 121-127.
- Brunner, J.F., E.H. Beers, J.E. Dunley, and G.G. Grove. 1996. Horticultural mineral oils as summer control for pests. Proc. Wash. State Hort. Assoc. 91: 271-273.

Popular periodicals

- Beers, E.H, and J.E. Dunley. 1997. Evolution of Agri-Mek use on apple and pear. Good Fruit Grower 48(5): 44-50.
- Miller, R.H., J.E. Dunley, and W.B. Hill. 1996. IPM in pears, the grape mealybug problem. Good Fruit Grower. 47(3):35-42.
- Dunley, J.E. 1996. CAMP vs. Codling Moth: Regional resistance management in the areawide projects. USDA Codling Moth Areawide Management Program Newsletter. 2(4): 1-2.

Grants (1995-2001)

Funded Projects	PI:	\$1,260,711
	Co-PI:	\$5,520,478
	Total:	\$6,771,189

2003: \$123,951

- Washington State Tree Fruit Research Commission, 2003: \$31,501. Biological control in areawide organic and “super-soft” pear orchards. J.E. Dunley.
- Washington State Tree Fruit Research Commission, 2003: \$26,000. Development of areawide organic insect pest management in pear orchards. J.E. Dunley
- Washington State Tree Fruit Research Commission, 2003: \$14,450. Survey of codling moth organophosphate resistance and associated tolerances to other pesticides. J.E. Dunley
- Chemical company grants, 2002: \$52,000. Development of IPM strategies for management of pear pests. J.E. Dunley

2002: \$116,680

- Washington State Tree Fruit Research Commission, 2002: \$36,680. Development of an integrated pesticide management program for pear psylla. J.E. Dunley.
- Washington State Tree Fruit Research Commission, 2002: \$10,000. Investigation into the modes of action of Raynox and particle film technologies used for control of pear psylla. J.E. Dunley and L. Schrader
- Chemical company grants, 2002: \$71,000. Development of IPM strategies for management of pear pests. J.E. Dunley

2001: \$116,000

- Washington State Tree Fruit Research Commission, 2001: \$35,000. Integrated control of grape mealybug. J.E. Dunley.
- Washington State Tree Fruit Research Commission, 2001: \$15,000. Development of an integrated pesticide management program for pears. J.E. Dunley.

Washington State Tree Fruit Research Commission, 2001: \$10,000. Investigation into the modes of action of Raynox and particle film technologies used for control of pear psylla. J.E. Dunley and L. Schrader

Chemical company grants, 2001: \$66,000. Development of IPM strategies for management of pear pests. J.E. Dunley.

2000: \$124,800

Washington State Tree Fruit Research Commission, 2000: \$53,100. Integrated control of grape mealybug. J.E. Dunley.

Washington State Tree Fruit Research Commission, 2000: \$25,700. Development of an integrated pesticide management program for pears. J.E. Dunley.

Chemical company grants, 2000: \$46,000. Development of IPM strategies for management of pear pests. J.E. Dunley.

1999: \$155,663

Washington State Tree Fruit Research Commission, 1999: \$57,100. Integrated control of grape mealybug. J.E. Dunley.

Washington State Tree Fruit Research Commission, 1999: \$29,200. Development of an integrated pesticide management program for pears. J.E. Dunley.

USDA Western Regional IPM Grants Program, 1998: \$25,363. Development of an areawide IPM program using mating disruption for multiple pests. J.E. Dunley and A.L. Knight.

Chemical company grants, 1999: \$44,000. Development of IPM strategies for management of pear pests. J.E. Dunley

1998: \$141,700

Washington State Tree Fruit Research Commission, 1998: \$60,200. Biological control of grape mealybug. J.E. Dunley.

Washington State Tree Fruit Research Commission, 1998: \$29,500. Development of an integrated pesticide management program for pears. J.E. Dunley.

USDA-ARS Areawide Codling Moth Management Program in Pome Fruits, 1998: \$11,000. Use of rubidium for determination of mating success in sterilized codling moth release programs. J.E. Dunley.

Chemical company grants, 1998: \$41,000. Development of IPM strategies for management of pear pests. J.E. Dunley.

1997: \$186,540

USDA-APHIS National Biological Control Institute, 1997: \$14,866. Augmentative biological control of grape mealybug using green lacewings. J.E. Dunley.

Washington State Tree Fruit Research Commission, 1997: \$60,000. Biological control of grape mealybug. J.E. Dunley.

Washington State Tree Fruit Research Commission, 1997: \$24,900. Development of an integrated pesticide management program for pears. J.E. Dunley.

USDA-ARS Areawide Codling Moth Management Program in Pome Fruits, 1997: \$13,000. Use of rubidium for determination of mating success in sterilized codling moth release programs. J.E. Dunley.

Washington State Commission on Pesticide Registration, 1997: \$14,774. Development of a spider mite resistance management program for pears. J.E. Dunley.

Chemical company grants, 1997: \$59,000. Development of IPM strategies for management of pear pests. J.E. Dunley.

1996: \$169,610

USDA Western Regional IPM Grants Program, 1996: \$32,267. Inter- and intra-orchard dispersal of codling moth. J.E. Dunley, R.A. VanSteenwyk, F.J. Peryea, and S.C. Welter.

Washington State Tree Fruit Research Commission, 1996: \$59,343. Biological control of grape mealybug. J.E. Dunley.

USDA-ARS Areawide Codling Moth Management Program in Pome Fruits, 1996: \$20,000. Monitoring of organophosphate resistance in codling moth. J.E. Dunley, S.C. Welter, R. Hilton, A.L. Knight, and T.R. Unruh.

Chemical company grants, 1996: \$58,000. Development of IPM strategies for management of pear pests. J.E. Dunley.

1995: \$125,767

USDA Western Regional IPM Grants Program, 1995: \$32,267. Inter- and intra-orchard dispersal of codling moth. J.E. Dunley, R.A. VanSteenwyk, F.J. Peryea, and S.C. Welter.

Washington State Tree Fruit Research Commission, 1995: \$55,000. Chemical and biological control of grape mealybug. J.E. Dunley.

USDA-ARS Areawide Codling Moth Management Program in Pome Fruits, 1995: \$5,000. Monitoring of organophosphate resistance in codling moth. J.E. Dunley.

Chemical company grants, 1995: \$33,500. Development of IPM strategies for management of pear pests. J.E. Dunley.

Cooperative Grants:

2003: \$106,321

Washington State Tree Fruit Research Commission, 2002: \$106,321. New pest management programs for apple and pear. J.F. Brunner, E.H. Beers, and J.E. Dunley

USDA IFAFS Grants Program, 2002 (continuing): \$2,500,000. Building a multi-tactic pheromone-based pest management system in western orchards. 16 investigators. (I serve as Executive Committee Representative from WSU).

USDA RAMP Grants Program, 2002: \$1,400,000 (continuing). Enhancing pheromone mating disruption programs for lepidopterous pests in western orchards. 12 investigators. (I serve as Executive Committee Representative from WSU).

2002: \$170,321

Washington State Tree Fruit Research Commission, 2002: \$106,321. New pest management programs for apple and pear. J.F. Brunner, E.H. Beers, and J.E. Dunley

Washington State Tree Fruit Research Commission, 2002: \$19,000. Kaolin particle film for insect suppression in pear and apple. J.F. Brunner, E.H. Beers, and J.E. Dunley

Washington State Tree Fruit Research Commission, 2002: \$25,000. RAYNOX, a Particle Film for Suppression of Insects in Apple and Pear. L. Schrader, J. Brunner, E. Beers, J. Dunley.

Washington State Commission on Pesticide Registration, 2002: \$20,000. New Formulation for Suppression of Insects in Apple and Pear. L. Schrader, J. Brunner, E. Beers, J. Dunley.
USDA IFAFS Grants Program, 2002 (continuing): \$2,500,000. Building a multi-tactic pheromone-based pest management system in western orchards. 16 investigators. (I serve as Executive Committee Representative from WSU).
USDA RAMP Grants Program, 2002: \$1,400,000 (continuing). Enhancing pheromone mating disruption programs for lepidopterous pests in western orchards. 12 investigators. (I serve as Executive Committee Representative from WSU).

2001: \$167,911

Washington State Tree Fruit Research Commission, 2001: \$106,321. New pest management programs for apple and pear. J.F. Brunner, E.H. Beers, and J.E. Dunley
Washington State Tree Fruit Research Commission, 2001: \$21,270. Kaolin particle film for insect suppression in pear and apple. J.F. Brunner, E.H. Beers, and J.E. Dunley
Washington State Tree Fruit Research Commission, 2001: \$20,000. RAYNOX, a Particle Film for Suppression of Insects in Apple and Pear. L. Schrader, J. Brunner, E. Beers, J. Dunley.
Washington State Commission on Pesticide Registration, 2001: \$20,000. New Formulation for Suppression of Insects in Apple and Pear. L. Schrader, J. Brunner, E. Beers, J. Dunley.
USDA IFAFS Grants Program, 2001 (continuing): \$2,500,000. Building a multi-tactic pheromone-based pest management system in western orchards. 16 investigators. (I serve as Executive Committee Representative from WSU).
USDA RAMP Grants Program, 2001: \$1,400,000 (continuing). Enhancing pheromone mating disruption programs for lepidopterous pests in western orchards. 12 investigators. (I serve as Executive Committee Representative from WSU).

2000: \$4,027,922

USDA IFAFS Grants Program, 2000: \$2,500,000. Building a multi-tactic pheromone-based pest management system in western orchards. 16 investigators. (I serve as Executive Committee Representative from WSU).
USDA RAMP Grants Program, 2000: \$1,400,000. Enhancing pheromone mating disruption programs for lepidopterous pests in western orchards. 12 investigators. (I serve as Executive Committee Representative from WSU).
Washington State Tree Fruit Research Commission, 2000: \$21,270. Kaolin particle film for insect suppression in pear and apple. J.F. Brunner, E.H. Beers, and J.E. Dunley.
Washington State Tree Fruit Research Commission, 2000: \$34,522. The interaction of mite feeding and water stress on apple photosynthesis and productivity. E. Beers, L. Lombardini, F. Peryea, D. Elfving, L. Schrader, J. Dunley, S. Welter, S. Drake, J. McFerson.
Washington State Tree Fruit Research Commission, 2000: \$31,700. Assessing codling moth overwintering mortality. T.R. Unruh and J.E. Dunley.
Washington State Tree Fruit Research Commission, 2000: \$20,000. New Formulation for Suppression of Insects in Apple and Pear. L. Schrader, J. Brunner, E. Beers, J. Dunley.
Washington State Tree Fruit Research Commission, 2000: \$20,000. RAYNOX, a Particle Film for Suppression of Insects in Apple and Pear. L. Schrader, J. Brunner, E. Beers, J. Dunley.

1999: \$54,600

Washington State Tree Fruit Research Commission, 1999: \$18,000. Kaolin particle film for insect suppression in pear and apple. T.R. Unruh, A. Knight, G. Puterka, and J. Dunley.

Washington State Tree Fruit Research Commission, 1999: \$36,600. Assessing codling moth overwintering mortality. T.R. Unruh and J.E. Dunley.

1998: \$90,100

Washington State Tree Fruit Research Commission, 1998: \$34,800. Management of abamectin resistance in spider mites. E.H. Beers and J.E. Dunley.

Washington State Tree Fruit Research Commission, 1998: \$27,800. Use of horticultural oils for control of tree fruit insect pests and diseases. J.F. Brunner, E.H. Beers, J.E. Dunley, K.M. Williams, L.E. Schrader, and G.G. Grove.

Exxon, 1998: \$27,500. Use of horticultural oils for control of tree fruit insect pests and diseases. J.F. Brunner, E.H. Beers, J.E. Dunley, K.M. Williams, L.E. Schrader, and G.G. Grove.

1997: \$128,812

Washington State Tree Fruit Research Commission, 1997: \$31,812. Management of abamectin resistance in spider mites. E.H. Beers and J.E. Dunley.

Washington State Tree Fruit Research Commission, 1997: \$17,000. Use of ice-nucleating bacteria for control of pear psylla. R.C. Lee, D.A. Horton, and J.E. Dunley.

USDA-ARS Areawide Codling Moth Management Program in Pome Fruits, 1997: \$25,000. Development of codling moth resistance management programs. S.C. Welter and J.E. Dunley.

USDA-ARS Areawide Codling Moth Management Program in Pome Fruits, 1997: \$25,000. Gene flow in codling moth. S.C. Welter, F.J. Sperling, and J.E. Dunley.

California Pear Pest Management Research Fund, 1997: \$30,000. Development and implementation of pesticide resistance management for codling moth. S.C. Welter and J.E. Dunley.

1996: \$150,812

Washington State Tree Fruit Research Commission, 1996: \$31,812. Management of abamectin resistance in spider mites. E.H. Beers and J.E. Dunley.

Washington State Tree Fruit Research Commission, 1996: \$27,000. Use of ice-nucleating bacteria for control of pear psylla. R.C. Lee, D.A. Horton, and J.E. Dunley.

USDA-ARS Areawide Codling Moth Management Program in Pome Fruits, 1996: \$ 10,000. Development of codling moth resistance management programs. S.C. Welter and J.E. Dunley.

USDA-ARS Areawide Codling Moth Management Program in Pome Fruits, 1996: \$25,000. Gene flow in codling moth. S.C. Welter, F.J. Sperling, and J.E. Dunley.

California Pear Pest Management Research Fund, 1996: \$57,000. Development and implementation of pesticide resistance management for codling moth. S.C. Welter and J.E. Dunley.

1995: \$134,000

Exxon Corp., 1995: \$29,000. Use of horticultural oils in orchard pest management. J.F. Brunner, E.H. Beers, and J.E. Dunley.

Insecticide Resistance Action Committee, 1995: \$23,000. Acaricide resistance management of two-spotted spider mites in pears.

California EPA, 1995: \$25,000. Gene flow in codling moth. S.C. Welter, J.E. Dunley, and F.J. Sperling.

California Pear Pest Management Research Fund, 1995: \$57,000. Development and implementation of pesticide resistance management for codling moth. S.C. Welter and J.E. Dunley

Invited Symposium Presentations

Symposium on marking of insects for the study of dispersal, Annual Meeting of the Pacific Branch, Entomological Society of America, Tucson, AZ, March 2003. The use of rubidium in marking natural populations of insects for the study of dispersal.

Symposium on Organic Tree Fruit Production, Washington State Horticultural Association Annual Meeting, Yakima, WA, December 2002. Areawide organic insect pest management in pear: the Peshastin Creek Project.

Symposium on Use of Mating Disruption in Agriculture, Asian Pan-Pacific Society for Chemical Ecology, Penang, Malaysia, August 2001. Use of pheromone mating disruption for areawide resistance management in tree fruit.

Southwest Resistance Management Project Meeting, Tucson AZ, May 2001. Resistance management in Pacific Northwest tree fruit.

Symposium on Areawide Management, XXI International Congress of Entomology, Foz do Igausso, Brazil, Aug. 2000. Resistance management on an areawide basis in annual versus perennial cropping systems.

ESA Symposium on Resistance Management Programs, Atlanta, GA, Dec. 1999: Current resistance management programs in tree fruit.

Miller Memorial Lecture, Wenatchee Valley College, Wenatchee, WA, Nov. 1999: Genetic engineering and pest management.

Cohoutemoc Fruit Assn. Annual Meeting, Cohoutemoc, Mexico, March 1999: Resistance management of spider mites.

Chihuahua Growers Assn., Nuevo Casas Grande, Mexico, March 1999: Resistance management of spider mites.

ESA Pacific Branch Symposium on New Techniques in Studying Insect Ecology, Honolulu, HI, June 1998: Modeling dispersal in continuous release studies.

ESA Symposium on Resistance Management Programs, Nashville, TN, Dec. 1997: The problem of pears: evolution and management of pesticide resistance in pear psylla.

ESA Symposium on Areawide Management of Codling Moth, Nashville, TN, Dec. 1997: Resistance management in codling moth areawide projects.

Association of Applied Insect Ecologists, Visalia, CA, March 1997: Developing pesticide resistance management programs in pear production systems.

ESA Symposium on Resistance Management Programs, Louisville, KY, Dec. 1996: Integrated mite management: acaricide resistance in worldwide web-spinners.

Symposium on New Developments and Directions in Insect Pest Management, Pacific Entomology Conference, Honolulu, HI, Feb. 1995: Managing pesticide resistance without pesticides: non-chemical IPM tactics for codling moth control.

- Symposium on Managing Insect Resistance in Chemical Control Systems, ESA Pacific Branch Conference, Sparks, NV, June 1994: Regional management of organophosphate resistance in codling moth using pheromone mating disruption.
- Symposium on Mating Disruption as a Replacement for Pesticides in High Value Crops, Pacific Entomology Conference, Honolulu, HI, Feb. 1994: Problems in large scale implementation of mating disruption for codling moth.
- International Symposium on the Population Dynamics of Plant-Inhabiting Mites, Amsterdam, Holland, July 1991: Dispersal and gene flow of pesticide resistance traits in populations of phytoseiid and tetranychid mites.

Scientific Presentations (Since 1995)

- Western Orchard Pest and Disease Management Conference, Portland, OR, Jan. 2003: Areawide organic management in pear.
- Western Orchard Pest and Disease Management Conference, Portland, OR, Jan. 2003: New insecticides for control of codling moth on pear.
- CIRI Resistance Management Meeting, Indianapolis, IN April 2003. Areawide management of codling moth and other tree fruit pests: resistance management in action.
- National Convention, Entomological Society of America, Montreal, Canada, Dec. 2000: Baseline insecticide tolerances and cross-resistance in *Choristoneura rosaceana* and *Pandemis pyrusana* (Lepidoptera: Tortricidae).
- Western Orchard Pest and Disease Management Conference, Portland, OR, Jan. 2000: Developing a grape mealybug insecticide bioassay.
- Western Orchard Pest and Disease Management Conference, Portland, OR, Jan. 2000: Effects of IGRs on pear psylla.
- WSU Tree Fruit School, Wenatchee, WA, July 1999: Management of pear psylla.
- Western Orchard Pest and Disease Management Conference, Portland, OR, Jan. 1999: Biological control of grape mealybug using inundative releases of green lacewings.
- Western Orchard Pest and Disease Management Conference, Portland, OR, Jan. 1999: Response of grape mealybug to novel insecticides.
- Yakima Pear IPM Symposium, Yakima, WA, Jan. 1999: Evolution of resistance and resistance management in pear pests.
- Pacific Branch, Entomological Society of America, Honolulu, HI, June 1998: Baseline tolerance of pear psylla to newly introduced insecticides.
- National Convention, Entomological Society of America, Nashville, TN, Dec. 1997: Modeling of density-dependent mating effects of codling moth.
- National Convention, Entomological Society of America, Nashville, TN, Dec. 1997: Study of intra-orchard dispersal of codling moth.
- Western Orchard Pest and Disease Management Conference, Portland, OR, Jan. 1997: Chemical control programs in pears.
- Western Orchard Pest and Disease Management Conference, Portland, OR, Jan. 1997: Resistance management programs for pear psylla and spider mites in pear.
- National Convention, Entomological Society of America, Louisville, KY, Dec. 1996: Modeling of density-dependent mating success in pheromone-treated orchards.
- National Convention, Entomological Society of America, Louisville, KY, Dec. 1996: Use of rubidium in dispersal studies of codling moth.

- National IPM Symposium, Washington, DC, Feb. 1996. Areawide resistance management of codling moth using pheromone mating disruption.
- Western Orchard Pest and Disease Management Conference, Portland, OR, Jan. 1996: Chemical control programs in pears.
- Western Orchard Pest and Disease Management Conference, Portland, OR, Jan. 1996: Management of organophosphate resistance in codling moth: the Randall Island update.
- Western Orchard Pest and Disease Management Conference, Portland, OR, Jan. 1996: Regional levels of organophosphate resistance in codling moth areawide projects.
- Western Orchard Pest and Disease Management Conference, Portland, OR, Jan. 1996: Stability of pyrethroid resistance in pear psylla.
- National Convention, Entomological Society of America, Las Vegas, NV, Dec. 1995: Potential for grape mealybug biological control in pear.
- National Convention, Entomological Society of America, Las Vegas, NV, Dec. 1995: Sampling and distribution of grape mealybug in unsprayed pear.
- Western Orchard Pest and Disease Management Conference, Portland, OR, Jan. 1995: Competition between IO mg pheromone monitoring traps in codling moth mating disrupted orchards.
- Western Orchard Pest and Disease Management Conference, Portland, OR, Jan. 1995: Management of organophosphate resistance in codling moth: the Randall Island update.
- Western Orchard Pest and Disease Management Conference, Portland, OR, Jan. 1995: The use of 5 mg pheromone traps to better determine the efficacy of mating disruption

Poster Presentations (Since 1995)

- National Meeting of the Entomological Society of America, Cincinnati, OH. Oct 2003. Organic insect pest management on an areawide basis in pear.
- 4th National IPM Conference, Indianapolis, IN April 2003. Organic insect pest management on an areawide basis in pear.
- Washington State Horticultural Assn. Annual Meeting, Wenatchee, WA, Dec. 2003. Areawide organic management in pear.
- Washington State Horticultural Assn. Annual Meeting, Wenatchee, WA, Dec. 2003. Biological control in areawide organic and "super-soft" pear orchards
- Washington State Horticultural Assn. Annual Meeting, Wenatchee, WA, Dec. 2003. New materials for pear psylla control.
- Washington State Horticultural Assn. Annual Meeting, Wenatchee, WA, Dec. 2001. Prebloom applications for.
- National Convention, Entomological Society of America, San Diego, CA, Dec. 2001: Effects of chloronicotinyls on the reproduction of two-spotted spider mites.
- Washington State Horticultural Assn. Annual Meeting, Wenatchee, WA, Dec. 2001. Codling moth control in pears.
- Washington State Horticultural Assn. Annual Meeting, Wenatchee, WA, Dec. 2001. Evaluation of new insecticides for control of grape mealybug.
- Washington State Horticultural Assn. Annual Meeting, Wenatchee, WA, Dec. 2001. Use of kaolin and raynox for seasonal control of pear psylla.
- Washington State Horticultural Assn. Annual Meeting, Wenatchee, WA, Dec. 2001. Evaluation of new miticides for control of spider mites in pear.
- Secondary author on 5 other posters at the Washington State Hort Assn. Annual Meeting, 2001.

- Washington State Horticultural Assn. Annual Meeting, Yakima, WA, Dec. 2000. Prebloom applications for pear psylla control.
- Washington State Horticultural Assn. Annual Meeting, Yakima, WA, Dec. 2000. Codling moth control in pears.
- Washington State Horticultural Assn. Annual Meeting, Yakima, WA, Dec. 2000. Evaluation of new insecticides for control of grape mealybug.
- Washington State Horticultural Assn. Annual Meeting, Yakima, WA, Dec. 2000. Use of kaolin and raynox for seasonal control of pear psylla.
- Washington State Horticultural Assn. Annual Meeting, Yakima, WA, Dec. 2000. Evaluation of new miticides for control of spider mites in pear.
- Washington State Horticultural Assn. Annual Meeting, Yakima, WA, Dec. 2000. Effect of sex ratios in pear psylla reproduction.
- Washington State Horticultural Assn. Annual Meeting, Yakima, WA, Dec. 2000. Evaluation of new insecticides for postbloom control of pear psylla.
- Washington State Horticultural Assn. Annual Meeting, Wenatchee, WA, Dec. 1999. New acaricides for control of spider mites in pear.
- Washington State Horticultural Assn. Annual Meeting, Wenatchee, WA, Dec. 1999. Integrated management of pear psylla.
- Washington State Horticultural Assn. Annual Meeting, Yakima, WA, Dec. 1998. Baseline tolerances for novel insecticides used for pear psylla control.
- Washington State Horticultural Assn. Annual Meeting, Yakima, WA, Dec. 1998. Evaluation of new insecticides for pear psylla control.
- Washington State Horticultural Assn. Annual Meeting, Yakima, WA, Dec. 1998. Evaluation of new acaricides for control of spider mites and rust mites in pear.
- National Convention, Entomological Society of America, Nashville, TN, Dec. 1997: Modeling of density dependent mating effects of codling moth.
- National Convention, Entomological Society of America, Nashville, TN, Dec. 1997: Areawide resistance management of codling moth.
- Washington State Horticultural Assn. Annual Meeting, Yakima, WA, Dec. 1997. Biological control of grape mealybug.
- National Convention, Entomological Society of America, Louisville, KY, Dec. 1996: Toward biological control of grape mealybug, *Pseudococcus maritimus* (Ehrhorn), on pears.
- Washington State Horticultural Assn. Annual Meeting, Wenatchee, WA, Dec. 1996. Sampling grape mealybug in pear orchards.
- International Congress of Entomology, Florence, Italy, Aug. 1996: Biological control of grape mealybug using augmentative releases of green lacewings and European earwigs.
- Pacific Branch, Entomological Society of America, Big Sky, MT, June 1996: Stability of pyrethroid resistance in pear psylla.
- National Convention, Entomological Society of America, Dallas, TX, Dec. 1994: Modified codling moth traps in mating disrupted orchards: trap competition and seasonal changes in efficacy.
- National Convention, Entomological Society of America, Dallas, TX, Dec. 1994: Areawide management of codling moth using mating disruption: efficacy and regional resistance management.

Extension Presentations (Since 1995)

Northcentral Washington Pear Day: January 2003
Apple Entomology Research Review: January 2003
Okanogan Pear Day: January 2003
Chelan Fruit Grower Meeting: February 2003
Northwest Wholesale Grower Meeting: February 2003
Pear Research Review: February 2003
Wilbur-Ellis Growers' Meeting: February 2003
Wilbur-Ellis Chelan Growers' Meeting: February 2003
Wilbur-Ellis Yakima Growers' Meeting: February 2003
Cascade Ag Growers' Meeting: February 2003
Areawide II Codling Moth Meeting, Wenatchee: February 2003
Areawide II Codling Moth Meeting, Stockton: March 2003
Areawide II Codling Moth Meeting, Visalia: March 2003
Areawide II Codling Moth Meeting, Sacramento: March 2003
Areawide II Codling Moth Meeting, Medford: March 2003
Areawide II Codling Moth Meeting, Yakima: March 2003
Bluestar Growers' Meeting: March 2003
Bayer Cooperator's Meeting: July 2003
Valent Cooperator's Meeting: Nov 2003
Washington State Pest Consultants Meeting, Yakima: Nov 2003
Bluebird Growers' Meeting: Dec 2003
Wilbur-Ellis Fieldmen's Meeting: Dec 2003
Cascade Ag Growers' Meeting: Dec 2003
Pew Pear IPM Project Symposium: January 2001
Northcentral Washington Pear Day: January 2001
Gowan Research Meeting, Yuma AZ: January 2001
Okanogan Pear Day: January 2001
Pear Research Review: February 2001
Northwest Wholesale Grower Meeting: February 2001
MacDougal Fruit Growers Meeting: February 2001
Wilbur-Ellis Growers' Meeting: February 2001
Washington State Hort. Assn. Annual Meeting: December 2001
Chelan-Douglas County Medical Association: October 2000
Novartis Actara Meeting: September 2000
Central Washington Seed Growers' Meeting: March 2000
McDougall Fruit Growers' Meeting: March 2000
Wilbur-Ellis Growers' Meeting: March 2000
Yakima Pear Day: March 2000 (2 talks)
Dovex Growers' Meeting: February 2000
Okanogan Pear Day: February 2000
Pear Research Review: February 2000 (2 talks)
Dovex Growers' Meeting: January 2000
Washington Pear Day: January 2000
Yakima Pear IPM Project: January 2000
Washington State Hort. Assn. Annual Meeting: December 1999
Yakima Extension Pest Management: June 1999

Wilbur-Ellis Growers' Meeting: March 1999
Yakima Pear Day: March 1999 (2 talks)
Chamberlin Growers' Meeting: February 1999
Chief Wenatchee Growers' Meeting: February 1999
Northwest Wholesale Annual Meeting: February 1999
Pear Research Review: February 1999 (2 talks)
Dovex Growers' Meeting: January 1999
Washington Pear Day: January 1999
Yakima Pear IPM Project: January 1999
Washington Hort. Assn. Annual Meeting: December 1998
Brewster Area Growers' Meeting: March 1998 (2 talks)
Columbia Fruit Packers Meeting: March 1998
Wilbur-Ellis Growers' Meeting: March 1998
Yakima Pear Day: March 1998 (2 talks)
Chamberlin Growers' Meeting: February 1998
Chief Wenatchee Growers' Meeting: February 1998
Columbia Fruit Packers Annual Meeting: February 1998
Northwest Wholesale Annual Meeting: February 1998
Pear Research Review: February 1998 (2 talks)
Wilbur-Ellis (Chelan) Growers' Meeting: February 1998
Apple Research Review: January 1998
Blue Bird Growers' Meeting: January 1998
Washington Pear Day: January 1998
North Central Washington Fieldman's Assn.: April 1997
Brewster Area Growers' Meeting: March 1997 (2 talks)
Columbia Fruit Packers Meeting: March 1997
WSU-CE Organic Production Symposium: March 1997 (2 talks)
Chamberlin Growers' Meeting: February 1997
Chelan Horticultural Meeting: February 1997
Chief Wenatchee Growers' Meeting: February 1997 (2 talks)
Columbia Fruit Packers Annual Meeting: February 1997 (2 talks)
Northwest Wholesale Annual Meeting: February 1997
Okanogan Horticultural Assn.: February 1997 (2 talks)
Okanogan Pear Day: February 1997 (2 talks)
Pear Research Review: February 1997 (2 talks)
Wilbur-Ellis (Chelan) Growers' Meeting: February 1997
Wilbur-Ellis Growers' Meeting: February 1997 (2 talks)
WSU-Extension Workshop: On-farm testing: February 1997
Apple Research Review: January 1997
Blue Bird Growers' Meeting: January 1997
Dovex Growers' Meeting: January 1997
Washington Cherry Day: January 1997 (2 talks)
Washington Pear Day: January 1997 (3 talks)
UC Extension Short Course on Resistance, Davis, CA: Nov 1996.
Yakima Pom Club: October 1996
Brewster Area Growers' Meeting: March 1996

Columbia Fruit Packers Meeting: March 1996
WSU-CE Organic Production Symposium: March 1996
Chief Wenatchee Growers' Meeting: February 1996
Columbia Fruit Packers Annual Meeting: February 1996
Okanogan Horticultural Assn.: February 1996
Okanogan Pear Day: February 1996
Pear Research Review: February 1996
Wilbur-Ellis (Chelan) Growers' Meeting: February 1996
Wilbur-Ellis Growers' Meeting: February 1996
Chelan-Manson Pear Day: January 1996
North Central Washington Biorational Fieldman's Assn.: January 1996
North Central Washington Fieldman's Assn.: January 1996
Washington Pear Day: January 1996
Washington Tree Fruit Research Commission: January 1996
Yakima Pear Day: January 1996
Ciba Fenoxycarb Use Meeting: October 1995
North Central Washington Fieldman's Assn.: October 1995
North Central Washington Biorational Fieldman's Assn.: July 1995
Columbia Fruit Packers Annual Meeting, Wenatchee, WA: February 1995
Okanogan Horticultural Assn., Omak, WA: February 1995
Okanogan Pear Day, Omak, WA: February 1995.
Pear Research Review, Hood River, OR: February 1995
Washington Tree Fruit Research Commission, Wenatchee, WA: February 1995
Chelan-Manson Pear Day, Manson, WA: January 1995
North Central Washington Biorational Fieldman's Assn., Entiat, WA: January 1995
North Central Washington Fieldman's Assn., Wenatchee, WA: January 1995
Washington Pear Day, Wenatchee, WA: January 1995
Yakima Pear Day, Yakima, WA: January 1995.

Academic Service (Since 1995)

Peer Review Panels:

USDA CSREES NRI Entomology / Nematology Subprogram, 1998
USDA CSREES Special Research Grants Program for Pest Management Alternatives
Research, 1996

USDA CSREES Coordinating Committees:

Member, WCC-43
Member, W-185
Member, WCC-60
Member, WCC-69
Chairman, WCC-43, 1996-97

IFAFS/RAMP (\$3.9 M CSREES Competitive Grant) Executive Committee Member

WSU Committees

Computer Committee - WSU TFREC, 1995-2000
WWW Committee Chairman - WSU TFREC, 1996-2000
Space Committee Chairman - WSU TFREC, 1996-1998
Entomology Work Climate Committee - WSU Dept. of Entomology, WSU, 1997

Professional Society Service

National Committee on Awards, Entomol. Soc. Am., 2003-current
Organizer: Formal Conference on Arthropod Resistance, Entomol. Soc. Am., 1999
Organizer: Symposium on new techniques in studying insect ecology, ESA Pacific Branch 1998
Organizer: Formal Conference on Arthropod Resistance, Entomol. Soc. Am., 1997
Reviewer: Journal of Economic Entomology
Reviewer: The Canadian Entomologist
Reviewer: Environmental Entomology
Reviewer: Entomologia Experimentalis et Applicata
Reviewer: Experimental and Applied Acarology
Judge, Student Paper Competition (MS and PhD), Pacific Branch ESA, 1994

Industry Service

Program Co-Chair, WSU Fruit School, 1998-99
Program Co-Chair, Washington State Horticultural Association Convention, 1997
Washington Tree Fruit Industry Task Force, 1995-current
Advisory Committee, EPA Pesticide Environmental Stewardship Program, Winter Pear Control Committee, 1996-current
Advisory Committee, Pear IPM Program for Yakima County, Pew Charitable Trust, 1997-current
Advisory Committee, Wenatchee Valley Pear IPM Program, 1997-current
Chelan-Douglas County Committee on Pest Importation, 1997-current
Program Committee cochairman, Western Orchard Pest Management Conference, 1996
Chairman, Western Orchard Pest and Disease Management Conference, 2002-2003
Editor, Western Orchard Pest and Disease Management Conference, 2003-current

Professional Society Memberships

Entomological Society of America
International Organization for Biological Control
Sigma Xi
Gamma Sigma Delta
American Association for the Advancement of Science

Awards and Honors

Federal Laboratory Consortium for Technology Transfer National Award, 'Award for Excellence in Technology Transfer,' 2000
Federal Laboratory Consortium for Technology Transfer National Award, 1999
WSU CAHE Team Excellence Award, 1998
USDA Technology Transfer Award, 1998
IPM Innovator Award, California EPA, Dept. of Pesticide Regulation, 1994
Knud Swenson Memorial Award for Outstanding Student Publication, OSU, 1991
President's Prize, Entomological Society of America, First Place (Section F), 1990
OSU Entomology Graduate Student Travel Award, 1991
OSU Graduate and Professional Student Assn. Travel Award, 1991
OSU Entomology Graduate Student Travel Award, 1990
Pacific Northwest Pest Management Conference Outstanding Student Award, 1989

Lab Personnel:

Bruce Greenfield: Ag. Research Technician III

Tara Madsen: Associate in Research

Gregory Hannig: graduate student, MS 2001

Dr. Ross H. Miller: Post-doctoral research associate; 1995-1997, currently Asst. Prof. at
University of Guam

Dr. Xiaolong Li: Post-doctoral research associate, 1996-1998

Professional Organizations:

Entomological Society of America

Ecological Society of America

AAAS

Phi Sigma, Honorary Biology Society

Gamma Sigma Delta, Honorary Agricultural Science Society

Add abstracts, posters, talks from 2002