

LEONARD BRYAN COOP

CURRICULUM VITAE Revised Feb. 14, 2019

Integrated Plant Protection Center & Department of Horticulture
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A. EDUCATION AND EMPLOYMENT INFORMATION

Education

Ph.D. Dept. Entomology, Oregon State University, 1987 Dissertation Title: *Management of Variegated Cutworm in Peppermint* Minor: Statistics

M.S. Dept. Entomology, Oregon State University, 1983 Thesis Title: *Orange Tortrix: Parasitoid Complex and Thermal Constants for Egg Hatch* Minors: Statistics and Integrated Plant Sciences

B.A. Dept. Biology, Baker University, Baldwin City, KS 66006, 1979 Minor: Chemistry

Extra-Education Trainings

CLIMEX Modeling I Training, APHIS PPQ Ft. Collins, CO, Apr 3-7, 2017

GIS/GRASS Basic and Advanced Training, Central WA Univ. Ellensburg, WA, 1992 & 1994

Numerous Courses in Computer Science (over 36 credit hours), OSU, 1983-2002

Employment history

2017 – Present Assistant Professor (Practice), Dept. Horticulture and Associate Director, Integrated Plant Protection Center, Oregon State University (begin date: 8/16/2017)

2014 – Present Associate Director, Decision Support Systems, Integrated Plant Protection Center, Oregon State University

2002 – 2017 Assistant Professor (Senior Research). Oregon State University Botany and Plant Pathology Dept. and Integrated Plant Protection Center

1987 – 2002 Research Associate, Dept. Entomology and Integrated Plant Protection Center, Oregon State University

1983 – 1987 Graduate Research Assistant, Dept. Entomology, Oregon State University

1979 – 1982 Graduate Teaching Assistant, Dept. Entomology, Oregon State University

B. TEACHING, ADVISING, AND OTHER ASSIGNMENTS

While I have been involved in training but not in teaching for the past several years, back in the late 1990s I developed a course on quantitative and computer modeling in IPM. I taught this course as a 3-week intensive workshop to graduate students in Brazil, and then again in the OSU Entomology Dept. to undergrads and graduate students. I taught several modules of the class at Entomology IPM graduate level labs for classes led by Brian Croft, Paul Jepson, and Ralph Berry. This experience is consistent with my philosophy that students greatly benefit from a hands-on learning of quantitative tools in fields such as ecology, IPM, and agronomy.

1. Instructional Summary

I. Credit Courses

Course	Title	Enrollment	Term	Year
ENT 312x	Use of computers in IPM	14	Winter	1998

II. Graduate and Undergraduate Students and Postdoctoral Trainees

Graduate Students, committee member (recent)

Students in Horticulture and related Depts., committee member (recent only)

Jessica Wong PhD 2018
Luguang Wang PhD ongoing (grad rep.) {BEE Dept.}
Riki York MS 2016 (grad rep.)
Fumi Funahashi PhD 2015 {CSS Dept.}
Dani Lightle PhD 2013

Students NOT in Horticulture and related Depts.

Numerous (ca. 48) graduate committees since 2011 (grad rep.) for Depts. Including EECS, CEOS, Forest Engineering, and Zoology.

Postdoctoral trainees

Tyson Wepprich, Post-Doctoral Scholar, BPP Dept. 2017-present [serving as Co-Advisor]
Brittany Barker, Post-Doctoral Scholar, IPPC. 2018-present [sole Advisor]

Visiting scientists hosted

Tor-Einar Skog, Norwegian Institute of BioEconomy, Norway, 2016-2017

III. Other teaching and training activities

Member of Graduate Faculty of OSU since 1995.

Guest Lecturer, OK State Univ. Fruit Production, on Principles of IPM, Spring Term 2017.

Guest Lecturer, HORT 451. Fruit Production, on Principles of IPM, Spring Term 2017.

Guest Lecturer, ENT 420/520. Principles of Insect Ecology, Winter Term 2002.

Assistant Instructor, ENT 442. Principles of IPM: Systems Design, Winter Term 1999, 2000, 2001.

Assistant Instructor, ENT 443. Systems Pest Management Laboratory, Winter Term 1997.

Guest Lecturer, USDA - OSU/IPPC IPM Shortcourse, July 1991, 92, 93, and 94.

Guest Lecturer, Intro IPM ENT 311, 1987, IPM II ENT 443, 1984-87, 1990, 1995.

Laboratory Instructor, IPM I ENT 441 & IPM III ENT 444, 1983-84.

Guest Speaker on insects; kindergarten, third and fourth grade elementary classes, Briarwood Elementary school, 1983, 1984, 1989, 1992, 1999, 2009, 2010.

Laboratory Prep and Teaching Assistant, Baker University, 1977-79: General Biology, General Zoology, General Botany, Invertebrate Zoology.

Volunteer Assistant, OSU Entomology Museum Days (public showcase of insects from around the world) 1996, 2001

V. Non-Credit Courses and Workshops

Workshops organized or co-organized

2018. Oct. Aurora, OR. Solarization Workshop. Oct. 29, 2018. Presenter of Solarization model.

2016. Jan. Corvallis, OR. CROPTIME Scheduling Vegetable Plantings Hands-On Computer Workshop. Co-organizer and served as computer usage and modeling advisor.

2014. Aug. Corvallis, OR. Integrated Plant Protection Center – International IPM Workshop – New methods in IPM assessment and education. Co-organizer & presenter on 2 topics.

1998. Nov. Corvallis, OR. Integrated Plant Protection Center – IPM in Oregon Workshop – Use of Weather data for IPM. Co-organizer & presenter of 1 paper on online IPM decision support.

1996, Oct. Niamey, Niger. CILSS/DFPV Workshop/Conference. Served as chief trainer and presented 2 papers on millet crop loss assessment techniques.

1996, Sept. 11. Corvallis, Oregon. Co-sponsored a workshop "Interactions between the phenology of biocontrol organisms and climatic conditions" for "IPM in Oregon for the 90's and Beyond", organized by the Integrated Plant Protection Center, OSU.

1995, Nov-Dec. Jaboticabal, Brazil. Organized and conducted a 3-week graduate level workshop "Systems modeling for IPM" at Sao Paulo State University, Campus of Jaboticabal.

1995, Sept. Corvallis, Oregon. Conducted a workshop "Computer Applications in IPM" for "IPM in Oregon for the 90's and Beyond", organized by the Integrated Plant Protection Center, OSU.

VI. Collaborative Programs

<i>Program</i>	<i>Funded by</i>	<i>Participants</i>	<i>Recent Activities</i>	<i>Meetings at which I participated</i>
Western & Midwest Weather Workgroups	USDA NIFA IPM Centers 2004-present	Approximately yearly meetings various locations	Report on State and multi-region activities and collaborate on grant programs	Most years 2004-present; 2005 (Corvallis, OR), 2012 (Providence RI), 2013 (Austin, TX), 2016 (Tampa FL)
WERA-1017 Western IPM Coordinators Group	USDA funded yearly	State IPM Coordinators Reports, collaborate on regional and national programs	Fill in for Oregon IPM Coordinator (Paul Jepson, IPPC), present grant progress reports	2010, 2011, 2012, 2014 (Bozeman MT), 2015 (Reno NV), 2017 (Boise ID), 2018 (Portland OR)

WERA-102/WDC37 Climate Data and Analysis for Applications in Agriculture and Natural Resources	USDA funded	Yearly meetings normally attended by State Extension Climatologists	Present state climatology reports; research presentations	2010 (Monterey CA), 2011 (San Diego CA), 2012 (Monterey CA)
USDA-PPQ-CPHST modeling for CAPS (Cooperative Agricultural Pest Survey) program	USDA- PPQ	Mainly CPHST and CAPS personnel	Select target species for modeling; review status of modeling and mapping of invasive pests	2015, 2016, Apr. 2017 (Ft. Collins, CO)
USDA NPDN (National Plant Diagnostic Network)	USDA	Plant disease diagnosticians and epidemiologists; database specialists	Established National Database of plant disease, insect, and other invasive organism diagnostics	Numerous 2004- 2013
National Plant Phenology Network	USGS/U. Arizona	Phenology / GIS specialists	Advise and share technologies for phenology models and maps	Conference calls summer/fall 2018, emails
USDA SARE CROPTIME	USDA- SARE	CROPTIME vegetable planting and harvest scheduling	Grant-funded project led by Nick Andrews, OSU Extension	Numerous 2012- 2016

C. SCHOLARSHIP AND CREATIVE ACTIVITY

1. Publications

A) Peer-reviewed

Summary of peer-reviewed papers

<i>Time frame</i>	<i>Refereed papers</i>	<i>Book chapters</i>	<i>Extension publications</i>	<i>Proceedings (incl. posters)</i>	<i>Other peer- reviewed materials</i>
Since last promotion	10	1	3	27	4
Prior to last promotion	19	1	4	21	0
Total	29	2	7	48	4

I. Refereed publications

29. Crimmins, T. M., K. L. Gerst, D. G. Huerta, R. L. Marsh, E. E. Posthumus, A. H. Rosemartin, J. Switzer, J. F. Weltzin, L. Coop, N. Dietschler, D. A. Herms, S. Limbu, R. T. Trotter, M. Whitmore. 2019. Short-term Forecasts of Pest Insect Activity Inform Management Activities. *Ann. Ent. Soc. Am.* *Submitted*.
28. Burrows, M, Thomas, C., McRoberts, N, Bostock, R. Coop, L., Stack, J. 2016. Coordination of diagnostic efforts in the Great Plains: wheat virus survey and modelling of disease onset. *Plant Disease*, 100:1037-1045.
27. Pfender, W F., L. B. Coop, S. G. Seguin, M. E. Mellbye, G. A. Gingrich, and T. B. Silberstein. 2015. Evaluation of the ryegrass stem rust model STEMRUST_G and its implementation as a decision aid. *Phytopathology*. 105:35-44. Online at: <<http://www.ncbi.nlm.nih.gov/pubmed/25098496>>
26. Grevstad, F. and L. Coop. 2015. The consequences of photoperiodism for species in new climates. *Ecological Applications* 25:1506-1517. Online at: <<http://onlinelibrary.wiley.com/doi/10.1890/14-2071.1/pdf>>
25. Pfender, W., Gent, D., Mahaffee, W., Coop, L., Fox, A. 2011. Decision aids for multiple-decision disease management as affected by weather input errors. *Phytopathology*. 101:644-653. Online at: <<http://dx.doi.org/10.1094/PHYTO-05-10-0131> >
24. Kim, K. S., S. E. Taylor, M. L. Gleason, F. W. Nutter, Jr., L. B. Coop, W. P. Pfender, R. C. Seem, P. C. Sentelhas, T. J. Gillespie, A. D. Marta, S. Orlandini. 2010. Spatial Portability of Leaf wetness models based on Empirical Approaches. *Agric. and Forest Meteorol.* 150:871-880. Online at: <<http://naldc.nal.usda.gov/download/43300/PDF>>
23. Walton, V.M., A.J. Dreves, L.B. Coop, G.V. Jones and P.A. Skinkis. 2010. Developmental parameters and seasonal phenology of *Calepitrimerus vitis* (Acari: Eriophyidae) in wine grapes of Western Oregon. *Environmental Entomology*. 39:2006-2016. Online at: <<http://ee.oxfordjournals.org/content/39/6/2006.long>>
22. Stone, J. K., L. B. Coop, and D. K. Manter. 2008. Predicting effects of climate change on Swiss needle cast disease severity in Pacific Northwest forests. *Canadian Journal of Plant Pathology*. 30:169-176. Online at: <http://sncc.forestry.oregonstate.edu/sites/default/files/Stone_etal2008CanJ.pdf>
21. Bajwa, W., L. Coop, M. Kogan. 2003. Integrated Pest Management (IPM) and Internet-Based Information Delivery Systems. *Neotropical Entomology* 32:373-383. Online at: <<http://scielo.br/pdf/ne/v32n3/18749.pdf>>
20. Song, Y.H., L. Coop, M. Omeg, H. Riedl. 2003. Development of a phenology model for predicting western cherry fruit fly, *Rhagoletis indefferens* Curran (Diptera: Tephritidae), emergence in the Mid-Columbia area of the Western United States. *Journal of Asia-Pacific Entomology*. 6:187-192. Online at: <http://ac.els-cdn.com/S1226861508601855/1-s2.0-S1226861508601855-main.pdf?tid=fe837b9e-7169-11e6-8364-00000aacb360&acdnt=1472861253_0fb819db7217dcb064892692628d1fcc>
19. Croft, B.A. and L.B. Coop. 1998. Heat units, release rate, prey density, and plant age effects on dispersal by *Neoseiulus fallacis* (Acari: Phytoseiidae) after inoculation into strawberry. *J. Econ. Entomol.* 91:94-100. Access online via: <<http://jee.oxfordjournals.org/content/91/1/94>>
18. Coop, L.B. and B.A. Croft. 1995. *Neoseiulus fallacis*: dispersal and biological control of *Tetranychus urticae* following minimal inoculations into a strawberry field. *Exper. Appl. Acarol.*

17. Horton, D.R., E.C. Burts, T.M. Lewis, and L.B. Coop. 1995. Sticky trap catch of winterform and summerform pear Psylla (Homoptera: Psyllidae) over non-orchard habitats. *Pan-Pacific Entomol.* 71:176-189.
16. Horton, D.R., E.C. Burts, T.R. Unruh, J.L. Krysan, L.B. Coop, and B.A. Croft. 1994. Phenology of fall dispersal by winterform pear psylla (Homoptera: Psyllidae) in relation to leaf fall and weather. *Canadian Entomologist* 126:222-230.
15. Coop, L.B. and B.A. Croft. 1994. Economic injury levels for Sahelian grasshoppers in millet. 1. Survey of grasshoppers and millet Injury. *Nuisibles - Pests - Pragas, CILSS/UCTR/PV Bamako, Mali.* 2:81-100.
14. Coop, L.B., G.P. Dively, A.J. Dreves, and B. Sidibe. 1993. The adjusted length method. In: Jago, N. [ed.] *Millet Crop Loss Assessment Methods. Bull. 62. Natural Resources Institute [Overseas Development Administration] Chatham, England.* pp. 9-12.
13. Coop, L.B., G.P. Dively, A.J. Dreves, and N.D. Jago. 1993. Damage recognition. In: Jago, N. [ed.] *Millet Crop Loss Assessment Methods. Bull. 62. Natural Resources Institute [Overseas Development Administration] Chatham, England.* pp. 48-61.
12. Coop, L.B., B.A. Croft, and R. Drapek. 1993. A model of corn earworm (Lepidoptera: Noctuidae) development, damage, and crop loss in sweet corn. *J. Econ. Entomol.* 86:906-916.
11. Coop, L.B., B.A. Croft. 1993. Pearl millet injury by five grasshopper species (Orthoptera: Acrididae) in Mali. *J. Econ. Entomol.* 86:891-898.
10. Horton, D.R., E.C. Burts, T.R. Unruh, J.L. Krysan, L.B. Coop, and B.A. Croft. 1993. Interorchard changes in distribution of winterform pear psylla (Homoptera: Psyllidae) in relation to leaf fall and weather. *Ann. Ent. Soc. Am.* 86:599-608.
9. Coop, L.B., Drapek, R., B.A. Croft, and G. Fisher. 1992. Relationship of corn earworm (Lepidoptera: Noctuidae) pheromone catch and silking to infestation levels in Oregon processing sweet corn. *J. Econ. Entomol.* 85:240-245.
8. Coop, L.B., B.A. Croft. 1992. Damage rates to pearl millet by adults of five grasshopper species and *Psalydolytta* blister beetles in Mali. *Tropical Pest Management.* 38:201-205.
7. Coop, L.B., B.A. Croft, C.F. Murphy, and S.F. Miller. 1991. A decision support system for economic analysis of grasshopper treatment operations in the African Sahel. *Crop Protection.* 10:485-495.
6. Drapek, R, L.B. Coop, B.A. Croft and G. Fisher. 1990. Improving pheromone trap catch for corn earworm monitoring in Oregon's Willamette Valley. *Southwest. Entomol.* 15:63-69.
5. Coop, L.B., B.A. Croft. 1990. Diapause and life history attributes of *Phytodietus vulgaris* (Hymenoptera: Ichneumonidae), a parasitoid of *Argyrotaenia citrana* (Lepidoptera: Tortricidae). *Ann. Entomol. Soc. Am.* 83:1148-1151.
4. Coop, L., A. Knight and G. Fisher. 1989. Parasitism of orange tortrix on caneberry, *Rubus* spp. in western Oregon and Washington. *J. Entomol. Soc. Brit. Columbia* 86: 63-65.
3. Coop, L.B. 1987. Management of variegated cutworm in peppermint. PhD Thesis. Oregon State University, Dept. of Entomology. 154 pp.

2. Coop, L.B. and R. Berry. 1986. Reduction in variegated cutworm (Lepidoptera: Noctuidae) injury to peppermint by larval parasitoids. *J. Econ. Entomol.* 79:1244-1248.
1. Coop, L.B. 1983. Orange tortrix: parasitoid complex and thermal constants for egg hatch. MS Thesis. Oregon State University, Dept. of Entomology. 125 pp.

II. Book Chapters

2. Stone, J. K., L. B. Coop, and D. K. Manter, 2007. A spatial model for predicting Swiss needle cast severity in the Pacific Northwest. *Encyclopedia of Forest Environmental Threats*. Forest Encyclopedia Network. Online at: <<http://www.forestencyclopedia.net/p/p25/p81>>
1. Hannaway, D. B., C. Daly, L. Coop, D. Chapman and Y. Wei. 2005. GIS-based forage species adaptation mapping. pp. 319-342 in S. G. Reynolds and J. Frame (eds.) *Grasslands: Developments Opportunities Perspectives*. FAO and Science Pub. Inc.

III. Extension Publications

4. Coop, L., A. J. Dreves, and J. Vlach. 2018. Biological Control. Chapter in: Hollingsworth, C, Editor. 2018 Pacific Northwest Insect Management Handbook. Oregon State University Extension and Experiment Station Communications. pp. 594-599. Updated Annually. Online at: <<http://insect.pnwhandbooks.org/ipm/biological-control>>
3. Andrews, N., Coop, L. B., Heinrich, A. L., Myers, J. R., Noordijk, H., Peachey, R. E., Stoven, H. M., Sullivan, D. M. 2017. Two online decision tools: organic nutrient management and crop scheduling in Oregon. *Joint Small and Family Farm Production Conference and Farmer Exchange*.
2. Dreves, A. J., J. Vlach, and L. Coop. 2006-2017. Biological Control. Chapter in: Hollingsworth, C, Editor. 2017 Pacific Northwest Insect Management Handbook. Oregon State University Extension and Experiment Station Communications. pp. 589-594. Updated Annually. Online at: <<http://insect.pnwhandbooks.org/ipm/biological-control>>
1. Knight, A., R. LaLone, G. Fisher and L. Coop. 1988. Managing leafrollers on caneberries in Oregon. Oregon State University Ext. Circ. 1263. 8 pp.

IV. Trade/industry articles

5. Parke, J., C. Mallory-Smith, M. Dragila, B. Hill, N. Wada, C. Weidman, L. Coop, K. Buckland. 2018. Soil Solarization – A potential tool for organic growers to manage weeds and improve soil health. *Organic Farmer Magazine*. Dec 2018-Jan 2019. pp 12-18. <<https://www.yumpu.com/en/document/fullscreen/62280511/organic-farmer-dec-jan-2019>>
4. Andrews, N., Noordijk, H., Coop, L. B. (2016). Coptime: Scheduling Vegetables with Degree-Day Models. *Oregon Small Farm News* (1st ed., vol. XI, pp. 11-14). Corvallis, OR: OSU Extension - Small Farms. http://smallfarms.oregonstate.edu/sites/default/files/sfnarchive_img/sfnwinter2016.pdf
3. Andrews, N., L. Coop, and H. Noordijk. 2015. Scheduling vegetables using degree-days. New crop planning, planting model from Oregon State University. *Tilth Producers Quarterly* 25:4:1-6. Access online via: <<http://tilthproducers.org/quarterly/2015-25-4-scheduling-vegetables-using-degree-days/>>
2. Coop, L. 2014. The Best/Worst Time for Pathogens. New, weather-driven risk models indicate when box blight and apple scab are more likely to spread. *Growing Knowledge Article in Digger Magazine* Pub. by The Ore. Assoc. of Nurseries. Oct. 2014. Online at:

<<http://c.ymcdn.com/sites/www.oan.org/resource/resmgr/Digger2/Digger201410OSU.pdf>>

1. Coop, L. and A. J. Dreves. 2013. Predicting when spotted wing Drosophila begins activity using a degree-day model. Whatcom Ag Monthly. Vol. 2 Issue 3 pp. 2-7. Online at:
<http://whatcom.wsu.edu/ag/documents/newsletters/v2i3_2013MarchWCENewsletter.pdf>

V. Proceedings articles

47. Andrews, N., Coop, L. B., Heinrich, A. L., Myers, J. R., Noordijk, H., Peachey, R. E., Stoven, H. M., Sullivan, D. M. (2017). Two Online Decision Tools: Organic Nutrient Management and Crop Scheduling in Oregon. *Sino-U.S. Agricultural Education* (pp. 8). Corvallis, OR: Oregon State University.
46. Meland, M., O. Frøyenes, L. Coop and C. Kaiser, 2017. Sweet cherry flower phenology in a mesic Nordic climate. Proceedings of the COST Cherry FA 1104 Working Group 2. Cherry phenology, modelling and climate change. *Acta Horticulturae* 1162, 19-22.
45. Coop, L. A. Fox, G. Grove, and G. Cook. 2016. Medium and Extended Range Weather and Climate Forecasts Scaled and Tested for IPM Decision Support in US States. Poster presented at NW Climate Conference, Nov. 15, 2016, Stephenson, WA. Online at:
<http://uspest.org/ipm/USPEST_Climate_Forecasts_NW_CLIM_CONF_2016b.pdf>
44. Andrews, N., L. B. Coop, H. E. Noordijk, and J. R. Myers. 2015. Crop Time: Degree-day Models and an Online Decision Tool for the Vegetable Industry. *HortScience Supplement*. 50:S138. Not avail. Online.
43. Batuman, O., A.J. Campbell, D.E. Ullman, R.L. Gilbertson, N. McRoberts, and L. Coop. 2015. Using a degree day insect development model to guide strategic management of western flower thrips and tomato spotted wilt virus (family Bunyaviridae, genus Tospovirus) on processing tomato in the central valley of California. *Acta Horticulturae* 1069:309-314. Access online at:
<<http://pubag.nal.usda.gov/pubag/article.xhtml?id=3112304&searchText=author%3A%22R.+L.+Gilbertson%22&searchField=>>>
42. Dreves, A. J., L. Coop, A. Ohrn, T. Peerbolt, J. Todd. 2015. Spotted wing Drosophila: Timing early season treatments. Pacific Northwest Pest Management Conference, Portland, OR. Jan 2015. Access online at: <<https://ir.library.oregonstate.edu/downloads/fx719p66z>>
41. Kaiser, C., L. Coop, M. Meland. 2014. Developing a robust, predictive model for sweet cherry (*Prunus avium* L.) flowering, comparing eastern Oregon and mesic Nordic climates. Am. Soc. Hort. Sci. 2013 Annual Conference. Access online at:
<https://www.researchgate.net/publication/267353636_Developing_a_Robust_Predictive_Model_for_Sweet_Cherry_Prunus_avium_L_Flowering_Comparing_Eastern_Oregon_and_Mesic_Nordic_Climates>
40. Coop, L. A.J. Dreves, A. Ohrn, and P. Jepson. 2013. Phenology Models from USPEST.ORG – recent developments. Poster presented at Entomological Society of America, Pacific Branch Annual Meeting, Apr. 3, 2013, Lake Tahoe, CA. Online at: <http://uspest.org/ipm/USPEST_POSTER_Lake_Tahoe_2013_PBESA_Apr_3a.pdf>
39. Thomas, C. S., A. Coggeshall, R. M. Bostock, N. McRoberts, M. Burrows, E. Luke, M. Hill, P. Poe, S. Clark, L. Coop, P. Jepson, F. Nutter, S. Dabade, M. Draper. 2012. NPDP Expands Analysis of the National Repository. *Phytopathology*. 102:13.
38. Coop, L. B. and J. K. Stone. 2010. Climate models for predicting distribution and severity of Swiss Needle Cast. In: D. Shaw, Ed. Swiss Needle Cast Cooperative Annual Report, 2010. College of

Forestry, Oregon State University. pp. 68-82. Online at:
<http://www.fs.fed.us/wwetac/projects/PDFs/SNC_Modeling_report_Oct_2010.pdf>

37. Coop, L, A. Fox, W. Mahaffee, D. Gent, W. Pfender, C. Daly, C. Thomas, P. Jepson. 2009. Forecast and virtual weather driven plant disease risk modeling system. *Phytopathology*. 99:S24.
36. Gent, D., L. Coop, C. Daly, A. Fox, G. Grove, D. Gubler, P. Jepson, D. Johnson, W. Mahaffee, W. Pfender, J. Strand, C. Thomas. 2009. Next steps on the horizon for weather and climate-based decision-support systems. *Phytopathology*. 99:S182.
35. Daly, C., L. Coop, A. Fox, C. Thomas. 2009. Novel approaches to spatial and temporal estimation of diverse western meteorology. *Phytopathology*. 99:S181.
34. Mahaffee, W., D. Gent, L. Coop, C. Daly, A. Fox, G. Grove, D. Gubler, P. Jepson, D. Johnson, P. Pfender, J. Strand, C. Thomas. 2009. Overview of the Western IPM Weather Workgroup-Diverse collaboration to meet challenges. *Phytopathology*. 99:S184.
33. Coop, L., P. Jepson, G. Grove, A. Fox, C. Daly, W. Mahaffee, C. Thomas. 2008. Delivery of IPM Tools in Real Time for Decision Support – Pull. APS Pacific Division Annual Meeting, Jackson, WY, June 25, 2008. Symposium.
<http://pnwpest.org/ipm/Coop_et_al_Pacific_Div_APS_2008.pdf>
32. Berry, R. E and L. B. Coop. 2007. Summary of Integrated Pest Management on Peppermint - IPMP 3.0. Proc. North American Root Weevil Workshop, Nov. 11, 2001. Oregon State University Agric. Exp. Sta. Special Report 1065:33-34.
31. Coop, L. B. and J. K. Stone. 2007. Prediction Maps of Swiss Needle Cast Needle Retention Based on Climatic Factors. In: D. Shaw, Ed. Swiss Needle Cast Cooperative Annual Report, 2007. College of Forestry, Oregon State University. <<http://www.cof.orst.edu/coops/sncc/pdfs/sncc07.pdf>>
30. Coop, L. B., J. K. Stone, and A. Fox. 2007. A spatial model for foliar life expectancy in Douglas fir affected by swiss needle cast. *Phytopathology* 97:S92.
<http://uspest.org/snc/SNC_poster_APS_07_Coop_et_al_1b.pdf >
29. Pfender, W., Coop, L., and Upper, D. 2006. An interactive website to deliver a weather-based stem rust warning system for perennial ryegrass seed crops in NW USA. *Phytopathology* 96:S93. Not available online.
28. Stone, J. K. and L. B. Coop. 2006. Developing spatial models for predicting Swiss needle cast distribution and severity. In: D. Shaw, Ed. Swiss Needle Cast Cooperative Annual Report, 2006. College of Forestry, Oregon State University.
27. Lipp, C., L. Coop, and W. Pfender. 2006. Stem rust prediction and decision aid for disease management on grass seed crops. GSCSSA Progress Report 2006:
<<http://gscssa.wsu.edu/progress/06/706.pdf>>
26. Stone, J. K., L. B. Coop, and D. K. Manter. 2006. A spatial model for predicting effects of climate change on Swiss needle cast disease severity in the Pacific Northwest. USDA-Forest Service: Advances in Threat Assessment and its Implications for Forest and Rangeland Management, Ft. Collins CO, July 18-22, 2006.
25. Gringrich, G. A., Me. E. Mellbye, W. F. Pfender and L. B. Coop. 2005. Preliminary evaluation of the effectiveness of the USDA rust model on perennial ryegrass in 2004. 2004 OSU Seed Research Reports.

24. Spotts, R.A., Serdani, M., and Coop, L.B. 2005. Where has all the pear scab gone? Proceed. Oregon Horticultural Soc. Paper available at pome fruit section at: <http://www.oregonhorticulturalsociety.org/newsletter/index.php>
23. Coop, L. B. 2004. Using Degree-Day Models in Pest Management. Proceedings 6th Annual Small Fruit Grower's Workshop. WSU Vancouver, March 23, 2004. pp. 21-26.
22. Song, Y.H., L. Coop, M. Omeg, A. Walston, H. Riedl. 2004. Development of a phenology model for predicting western cherry fruit fly, *Rhagoletis indefferens* Curran (Diptera: Tephritidae), emergence and oviposition in the Mid-Columbia area of Oregon. Orchard Pest and Disease Management Conference, Portland, Oregon. Jan 2004.
<<http://entomology.tfrec.wsu.edu/wopdmc/2004PDFs/Abs04%20Biology%20Song.pdf>>
21. Coop, L. and P. Jepson. 2003. Online Site-Specific Degree-Day Predictions Using GIS and Climate Map Technologies. 4th National IPM Symposium/Workshop Poster Abstract, Apr. 2003. Indianapolis Indiana. Available from The Oregon IPM Newsletter, Supplement to Issue No. 1. Integrated Plant Protection Center publication, <<http://oregonipm.ippc.orst.edu/On-Line%20DD.pdf>>
20. Coop, L. B. 2003. Degree-days for Pest Management: Website Decision Making Tools. Proceedings 5th Annual Small Fruit Grower's Workshop. WSU Vancouver, March 19, 2003. pp. 60-62.
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13. Coop, L.B. 1995. Survey of integrated pest management in apple: range of practices and level of adoption. IPPC Oregon State Univ. 38 pp.
12. Croft, B.A. and L. Coop. 1995. IPM of spider mites on strawberry using the biological control agent:

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5. Coop, L.B., B.A. Croft. 1990. GHLSIM: Sahelian grasshopper/crop loss simulation. Workshop on modeling pest-crop Interactions. International Benchmark Sites Network for Agrotechnology Transfer. University of Hawaii Research Extension Series 120:30-31.
4. Coop, L.B., B.A. Croft, C. Murphy and S. Miller. 1989. Economic analysis of African locust/grasshopper control. Part I. GHLSIM technical reference. IPPC Oregon State Univ. 35 pp.
3. Coop, L.B., B.A. Croft, C. Murphy and S. Miller. 1989. Economic analysis of African locust/grasshopper control. Part II. GHLSIM user manual. IPPC Oregon State Univ. 44 pp.
2. Coop, L.B., B.A. Croft, C. Murphy and S. Miller. 1989. Economic analysis of African locust/grasshopper control. Part III. Analysis of the 1987 grasshopper campaign in Chad. IPPC Oregon State Univ. 56 pp.
1. Fisher, G., B. Croft, L. Coop and R. Drapek. 1988. Corn earworm pest management. Proc. Oregon Hort. Soc. 79:165-171.

VI. Abstracts from conferences without published proceedings

B) Other Publications

Summary of other publications

<i>Time frame</i>	<i>Proceedings articles</i>	<i>Newsletters</i>	<i>Extension publications</i>	<i>Trade/industry articles</i>	<i>Web sites and Software</i>
Since last promotion	0	0	1	1	22
Prior to last promotion	2	3	4	0	22

TOTAL	2	3	5	1	44
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i. Proceedings articles

2. Coop, L. B. 2001. Pest Management Decision Tools: Examples of web-based phenology models, GIS, and databases for IPM decision support. IPPC/USDA CSREES Western Region Pest Management Center/PNW Pest Management Coalition Agroecological Regions Workshop: The Application of Watershed, Basin, and Ecoregion Analytical Tools to Pest Management. Integrated Plant Protection Center Web Site Publication E.10-01-1: <<http://ippc2.orst.edu/slides/ecoreg1>>
1. Coop, L. B., M. Kogan, W. Bajwa, 2001. Information exchange driven IPM: applied research and decision support. Final Project Report to Western Regional IPM Program - Extension. Integrated Plant Protection Center website <http://pnwpest.org/wea/Rpt_WR_IPM_01c.html>

ii. Newsletters

3. Coop, L., P. Jepson. 2003. Supplement to Oregon IPM Newsletter: On-line, Site Specific Degree-Day Predictions Using GIS and Climate Map Technologies. Oregon State University: Integrated Plant Protection Center. April, 2003 - [cited August 8th, 2003]. Available from Internet: <http://oregonipm.ippc.orst.edu/On-Line%20DD.pdf>
2. Drapek, R, L.B. Coop. 1990. Corn earworm report newsletter IV (1-3). OSU Extension Entomology.
1. Coop, L.B., R. Drapek. 1989. Corn earworm report newsletter III (1-4). OSU Extension Entomology.

iii. Trade/industry articles

1. Croft, B.A. and L.B. Coop. 1994. IPM of spider mites on strawberry using the biological control agent *Neoseiulus fallacis*. Northwest Small Fruit Research 2:62-63.

iv. Web sites, Apps, and Software

44. Stoven, H., L. Coop, N. Andrews, H. Noordijk. 2019. Tomato, *Solanum lycopersicum*, Vegetable Phenology (Degree-Day) Model Documentation. version 1.0, OSU Integrated Plant Protection Center and Dept. Horticulture CROPTIME project. Online at: https://uspest.org/CROPTIME/tomato_varieties_models.pdf (last accessed 2/14/2019)
43. Coop, L, and D. Upper. 2019. Degree-day model app for Android mobile devices. Available at the Google Play Store [First version: available Jan 23, 2019]
42. Coop, L., D. Upper, and A. Fox. 2018. Access to weather station-based data of extended forecasts using NMME and CFSv2 models for degree-day and other daily temperature forecast needs. Access index at: <<http://uspest.org/wea/indexable.html#tables>> [forecasts updated monthly; first online March 2016]
41. Coop, L., and D. Upper. 2018. Boxwood blight risk model app for Apple mobile devices. Available at the Apple App Store [First version: online May 31, 2018]
40. Coop, L., and D. Upper. 2018. Boxwood blight risk model app for Android mobile devices. Available at the Google Play Store [First version: online Apr. 12, 2018]
39. Pfender, W. F., L. B. Coop, J. McQueen. Grass Stem Rust Decision Aid – revised 2018. Oregon State University Integrated Plant Protection Center Web Site Publication E.18-04-1: <<http://uspest.org/cgi-bin/stemrust1.pl>> [first version online 2004]

38. Coop, L. 2017. Vapor Drift Risk Model: Predicting Thermal or Vapor Drift from Temperature and Dewpoint. Integrated Plant Protection Center Web Site Publication E. 16-01-1: <<http://uspest.org/risk/models>> [first version online 2010]
37. Coop, L. B. 2017. US degree-day mapping calculator vII. New version and infrastructure coded in R and GRASS GIS for 48 state online degree map mapmaking. Version II.01. Oregon State University Integrated Plant Protection Center Web Site: <<http://uspest.org/dd/mapper>> [first version online 2017]
36. Coop, L. B., D. Upper, F. Funahashi, and J. Parke. 2016. Soil Solarization Program – for using transparent anti-condensation plastic film to manage two soil-borne plant pathogens: *Phytophthora ramorum* and *P. pini*, developed for nursery beds. Version 0.91. Oregon State University Integrated Plant Protection Center Web Site: <<http://uspest.org/soil/solarize>> [first version online 2016]
35. Coop, L. B., D. Upper, and N. Andrews. 2016. CROPTIME: phenology models to schedule vegetable plantings and harvests. Version 1.01. Oregon State University Integrated Plant Protection Center Web Site: <<http://uspest.org/dd/model?mdt=veg>> [first version online 2015]
34. Coop, L., D. Debrito, D. Upper. 2016. MyPest Page: Hourly Weather, Plant Disease Risk, and Degree-day/Phenology Models. Integrated Plant Protection Center Web Site Publication E. 16-01-1: <<http://uspest.org/risk/models>> [first version online 2010]
33. Coop, L. B., G. Cook. 2016. US Degree-Day/Risk/Pest Event Mapmaker (DDRP): degree-day, pest/phenology event, and climate exclusion maps. Version 0.95. Oregon State University Integrated Plant Protection Center Web Site: <<http://uspest.org/dd/maps>> [first version online 2015]
32. Pfender, W. F., L. B. Coop, D. Debrito. Grass Stem Rust Estimator - 2016 version. Oregon State University Integrated Plant Protection Center Web Site Publication E.16-07-1: <<http://uspest.org/cgi-bin/stemrust1.pl>> [first version online 2004]
31. Coop, L. B., A. Dreves, and P. Jepson. 2016 version. Western Specialty Crops ipmPIPE – Spotted Wing Drosophila Decision Tools. Pest Incidence, Phenology and Overwintering Mortality Models. <<http://uspest.org/swd>> [first version online 2013]
30. Coop, L. B. 2016. Online phenology degree-day models. 2016 version. Oregon State University Integrated Plant Protection Center Web Site: <<http://uspest.org/cgi-bin/ddmodel.us>> [first version online 2013]
29. Coop, L., D. Debrito, D. Upper. 2016. MyPest Page: Plant Disease Risk Maps for Selected Regions. Integrated Plant Protection Center Web Site Publication E. 16-07-1: <http://uspest.org/risk/grid_display> [first version online 2012]
28. Coop, L. B. 2016. U. S. degree-day mapping calculator. Version 6.0. Oregon State University Integrated Plant Protection Center Web Site Publication E.16-03-1: <<http://uspest.org/cgi-bin/usmapmaker.pl>> [first version online 1998]
27. Coop, L. B. 2009. Online pest and disease models homepage for Milton-Freewater, Oregon. Oregon State University Integrated Plant Protection Center Web Site: <<http://uspest.org/MF>> [updated regularly to the present]
26. Coop, L. B. and J. Stone. 2008. Douglas fir: Swiss needle cast risk model – Online mapping and model visualization. A climate and terrain based model of swiss needle cast severity. <<http://uspest.org/snc>> [last updated 2008]
25. Coop, L. B. 2008. Daily and interactive degree-day maps for the USA. Oregon State University

- Integrated Plant Protection Center Web Site: <<http://uspest.org/wea/indexable.html>> [updated regularly to the present]
24. Coop, L. B. 2005. Web Publishing System for Pacific Northwest Weed Management Handbook. 2005 Edition. William, R. Lead Editor. OSU Extension / Integrated Plant Protection Center Web Site Publication E.05-05-1: <<http://pnwpest.org/pnw/weeds>> [updated yearly 2001-2010]
 23. Coop, L. B. 2004. IPM Centers - Pacific Northwest Coalition Portal website. Oregon State University Integrated Plant Protection Center Web Site: <<http://pnwpest.org/pmc/index.pl>> [updated 2002-2005]
 22. Coop, L. B. 2002. Online pear scab and powdery mildew risk model summaries for Hood River and Medford, Oregon. Oregon State University Integrated Plant Protection Center Web Site (e.g. Hood River: <<http://pnwpest.org/hr>> [updated regularly to the present]
 21. Coop, L. B. 2002. MINTSIM - simulation model of Variegated Cutworm injury and economic thresholds in Peppermint (Pascal). PC & Web software. Most recent version completed 2002. Released as part of IPMP 2.0 and 3.0., Online at <<http://mint.ippc.orst.edu/msim.html>> [nominally updated to the present]
 20. Coop, L. B. 2002. IPPC Grasslinks 3.2b: Public Access GIS. Web interface to maps, databases, and Geographic Information Systems analysis. <<http://ippc2.orst.edu/glinks>> [updated regularly to the present]
 19. Coop, L. B. 2002. Web Publishing System for Pacific Northwest Insect Management Handbook. McGrath, D. Lead Editor, 2002-2007; Hollingsworth, C. Lead Editor, 2008-2012. OSU Extension / Integrated Plant Protection Center Web Site Publication E.02-02-1: <<http://pnwpest.org/pnw/insects>> [published yearly 2002-2012]
 18. Berry, R. E and L. B. Coop. 2001. Integrated Pest Management on Peppermint - IPMP 3.0. Oregon State University Integrated Plant Protection Center Web Site Publication E.01-01-1: <<http://mint.ippc.orst.edu>> [updated to the present]
 17. Coop, L. B. 2001. Web Publishing System for Pacific Northwest Weed Management Handbook. William, R. D. Lead Editor. OSU Extension / Integrated Plant Protection Center Web Site Publication E.01-04-1: <<http://pnwpest.org/pnw/weeds>> [published yearly 2001-2011]
 16. Coop, L. B. 2000. Downscaling algorithm and preliminary documentation for improving resolution of climate maps. IPPC web site <<http://ippc2.orst.edu/dscale/>>
 15. Berry, R. E, G. L. Reed and L. B. Coop. 2000. Identification and Management of Major Pest and Beneficial Insects in Potato. Oregon State University Integrated Plant Protection Center Web Site Publication E.04-00-1: <<http://ippc2.orst.edu/potato>>
 14. Coop, L. B. 1999. Phenology Models Research and Delivery for Areawide Tree Fruit IPM. Area Wide Codling Moth Project Report - 1999. Oregon State University Integrated Plant Protection Center Web site: <<http://osu.orst.edu/dept/ippc/wea/phenolrpt99.html>>
 13. Coop, L. B. 1999. Area Wide Codling Moth Project Program Evaluation - 1 page grower survey - 1995-1998 Area Wide Codling Moth Project Report - 1999. Oregon State University Integrated Plant Protection Center Web site: <<http://ippc.orst.edu/IPMsurvey/camp/campsurvprt99.html>>
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University Integrated Plant Protection Center Web Site: <<http://ippc2.orst.edu/cgi-bin/ddmodel.pl>>

11. Coop, L. B. 1998. Oregon degree-day mapping calculator. Version 1.0. Oregon State University Integrated Plant Protection Center Web Site Publication E.98-00-1: <<http://ippc2.orst.edu/cgi-bin/mapmaker.pl>> [updated regularly to the present, now at: <<http://uspest.org/cgi-bin/usmapmaker.pl>>]
10. Coop, L. B. 1998. Online IPM weather data and degree-days for pest management decision making in Oregon. Oregon State University Integrated Plant Protection Center Web Site: <<http://www.orst.edu/Dept/IPPC/wea>> [updated regularly to the present, now at: <<http://uspest.org/wea>>]
9. Coop, L. B. and D. Upper. 1998. Online daily degree-day maps of Oregon. GIS/mapping and degree-day modeling system for Oregon. Oregon State University Integrated Plant Protection Center Web Site: <<http://uspest.org/wea/ddmaps.html>> [updated daily to the present]
8. Coop, L. B. 1998. Oregon pear growers survey (online database analysis system). Oregon State University Integrated Plant Protection Center Web Site: <<http://ippc.orst.edu/IPMSurvey/cfgph/pearsurvey.cfm>> [available 1998-2012; currently off-line]
7. Coop, L. B., R. Rosetta, and B. A. Croft. 1997. Release calculator and guidelines for *Neoseiulus fallacis* to control two-spotted spider mites in strawberry. Oregon State University Dept. of Entomology Web Site: <<http://www.orst.edu/Dept/entomology/ipm/mcalc.html>> [nominally updated, now at <<http://uspest.org/ipm/mcalc.html>>]
6. Coop, L. B., R. E. Berry, G. Fisher, and M. Kogan. 1997. Insect pest management in peppermint (IPMP) - online version 1.0. Oregon State University Integrated Plant Protection Center Web Site: <<http://www.orst.edu/Dept/entomology/ipm/ipmp2.html>> [nominally updated; now at <<http://mint.ippc.orst.edu>>]
5. Coop, L. B., R. E. Berry, G. Fisher, and M. Kogan. 1995. Insect pest management in peppermint (IPMP) - version 2.0. Computer Software Publication CS195. Integrated Plant Protection Center. Oregon State University. [PC software; replaced by online version]
4. Coop, L. B., R. Drapek, B. Croft and G. Fisher. 1990. CEWSIM: Corn Earworm Damage Simulator. Simulation model and decision support software for corn earworm in sweet corn. Version 1.5 User's manual. OSU Extension Entomology. 20 pp. [PC software; no longer available]
3. Berry, R. E., L. B. Coop and J. Duvall. 1989. IPMP - Insect pest management in peppermint. Users Guide. OSU Special Pub. No. 834. [initial release of PC software]
2. Coop, L. B. 1989. GHLSIM - simulation model/database system for grasshopper/locust damage to millet (West Africa) (Pascal). [PC software Submitted to USAID/Africa Bureau]
1. Coop, L.B., Drapek, R., B.A. Croft and G. Fisher. 1989. CEWSIM: Corn Earworm Damage Simulator. Version 1.1 Users manual. OSU Extension Entomology. 20 pp. [initial release of PC software]

2. Presentations to peers

Year	Within Region	National	International	Total	No. Invited
2018	1	2	2	4	2

2017	2			2	1
2016	1	2		3	
2015	2	2		4	
2014	3	3	1	7	1
2013		1	1	2	1
2003-2012 (totals)	5	16	10	30	5
1990-2003 (totals)	6	10	16	32	19

76. Grevstad, F., T. Wepprich, D. Bean, and L. Coop. 2018. Incorporating photoperiodism in insect phenology models. Poster presentation at: DoD SERDP Conference and meeting Nov 28, 2018. Washington, D.C.
75. Coop. L. 2018. Concepts of systems modeling in agroecosystems. Invited seminar/class at Oklahoma State NIMFFAB. Oct. 12, 2018. Stillwater, OK (via Zoom). Online at: https://uspest.org/okstate/Systems_Modeling_Oct_2018b.pdf >
74. Coop, L. 2018. Boxwood blight infection risk model – when and where to be on alert. International Congress of Plant Pathology. Invited Presentation. Boston, MA, July 31, 2018.
73. Bean, D., T. Dudley, F. Grevstad and L. Coop. 2018. How Two Generations Became Six: Evolving Photoperiod Cues and Shifting Temperature Regimes Alter the Life History and Phenology of *Diorhabda carinulata*, a Biocontrol Agent for *Tamarix* spp. Presented at the annual Riparian Restoration Conference, sponsored by the Tamarisk Coalition and the Water Center at Colorado Mesa University, Grand Junction, CO, Feb. 6, 2018.
72. Coop, L. A. Fox, and P. Jepson. 2018. Weather and Climate driven models for IPM and invasive species management. Poster presented at 9th International IPM Symposium, Mar. 21, 2018, Baltimore, MD. Online at: http://uspest.org/ipm/P4_Weather_and_Climate_Driven_Models_for_IPM.pdf>
71. Coop. L. 2017. Systems modeling of crop and insect development for agricultural decision support. Horticulture Dept. Seminar. Oct. 24, 2017. Corvallis, OR. Online at: https://media.oregonstate.edu/media/t/0_72jrm3vb/80127602 >
70. Bean, D., Dudley, T. Grevstad, F. and Coop, L. 2017. Rapidly evolving responses to photoperiod cues allow phenology shifts and southward range expansion in *Diorhabda carinulata*, a biocontrol agent for *Tamarix*. An invited presentation for the symposium Tamarisk: from organism to landscape 14th Biennial Conference of Science and Management for the Colorado Plateau and Southwest Region, Flagstaff, AZ, Sept. 13, 2017.
69. Grevstad, F., L. Coop, D. Bean. 2016. Incorporating photoperiodism in insect phenology models with application for the biological control of weeds on DoD lands. Presentation at Dept. Of Defense, Sept. 14, 2016. Arlington, VA.
68. Coop. L., A. Fox, C. Daly. 2016. Update on weather and climate data and models at USPEST.ORG. Presentation at Combined Weather Workgroup Meeting, Aug. 4, 2016. Tampa, FL.

67. Coop, L., A. Fox, G. Grove, A. Dreves. 2016. Extended forecasts for IPM Decision Making. NIFA-CPPM-ARDP Grant Report at WERA-1017: Western Region IPM Coordinators Meeting. July 8, 2016. Boise, ID.
66. Coop, L. and G. Cook. 2015. DDRP Mapping: Degree-day, Risk, and Pest Event Maps. Invited talk. USDA-APHIS-PPQ-CPHST. Dec. 9, 2015. Ft. Collins, CO.
65. Coop, L. 2015. Pest Phenology Model Development & Online Tools. Oregon Agric. Extension Assoc. invited presentation. Apr 28, 2015, Medford, OR.
64. Coop, L. 2015. NW Pest Prediction Models Using Weather Data. IR-4 State Commodity Liaison Meeting. Invited presentation. Apr 22, 2015, Portland, OR.
63. Coop, L. 2015. Oregon IPM Coordinators Report 2015. WERA-1017 National and Western Region IPM Coordinators meetings. Mar 23, 2015. Salt Lake City, UT.
62. Coop, L. 2014. Phenology model for the omnivorous leafhopper, *Cnephasia longana*: reviving intensive research from a bygone era. Presentation at ESA National Meeting, Portland, OR, Nov. 23, 2014.
61. Kaiser, C., Christensen, J.M., Coop, L. and Masterson, K., 2014. Collaboration and Grant Writing in County Extension. OSUEA Annual Conference, Corvallis, OR – Sept 2014. (Invited Presentation)
60. Kaiser, C., Coop, L. and Meland, M., 2014. Developing a robust, predictive model for sweet cherry (*Prunus avium* L.) flowering, comparing eastern Oregon and mesic Nordic climates. ASHS Annual Conference. July 22-29, 2014. Orlando, FL.
59. Kaiser, C. and Coop, L., 2014. Camp program in the Walla Walla Valley. NACAA Annual Conference, July 19-24, 2014. Mobile, AL. (Invited presentation for National Award – Search for Excellence).
58. Coop, L. 2014. Oregon IPM report. WERA-1017 Western Region IPM Coordinators meeting Western Region. July 7, 2014. Bozeman MT.
57. Coop, L. 2014. Boxwood Blight: Epidemiology and Monitoring. Developing a Predictive Model for the United States. 2014 Boxwood Summit. May 13, 2014. Beltsville, Maryland.
56. Coop, L., F. Grevstad, and G. Cook. 2014. Pest event mapping: a new tool to aid in prediction of insect phenology. Presentation and paper presented at: Pacific Northwest insect management conference. Jan. 6, 2014, Portland, Oregon.
55. Thomas, C. Coop, L. Mahaffee, W. Pfender, W. Fox, A. Daly, C. Johnson, D. Gent, D. Gubler, W. McRoberts, N. Hoogenboom, G. 2013. Update on the Western Weather Work Group. Presentation at North Central Weather Workgroup Meeting, Aug. 9, 2013. Austin, TX.
54. Coop, L. et al. 2013. Spotted Wing Drosophila phenology and overwintering mortality models and maps for the US. COST-Action FA 1104 Meeting – WG3 Crop Protection. Advances and prospects on monitoring and modelling of *Drosophila suzukii* in Europe. Wädenswil, Switzerland 26-27 March 2013
53. Campbell, A, O. Batuman, L. Chen, L., Coop, R. Gilbertson, N. McRoberts. 2012. Development and application of a degree-day model to predict thrips growth and development of tomato spotted wilt virus in California tomato fields. Phytopathology. 09/2012. Abstract online at: http://www.apsnet.org/meetings/Documents/2012_Meeting_Abstracts/aps12abP527.htm
52. Coop, L., P. Jepson. 2012. Automated mesoscale pest risk forecast maps for agricultural production and potential plant biosecurity threats. – Presentation at Midwest Weather Working

Group Meeting: Setting Uniform standards for design of pest-warning systems, Aug. 3, 2012, Providence, RI.

51. Coop, L. P. Jepson, C. Thomas. 2012. Online Phenology and Infection Risk Modeling System – 2012 Update. Poster. International IPM Symposium, Mar. 28, 2012, Memphis. http://www.ipmcenters.org/ipmsymposium12/092_Coop.pdf
50. Coop, L., V.M Walton, A.J. Dreves, D.T. Dalton, P.C. Jepson. 2012. A model estimating spotted wing *Drosophila* overwintering mortality. 71st Annual PNW Insect Management Conf. Portland, OR 01/10/12.
49. Coop, L. 2011. Spatialized Disease Risk Forecasting for IPM and Plant Biosecurity. Dept. Botany and Plant Pathology Seminar Series, Oct 17, 2011, Corvallis, OR.
48. Thomas, C., Coggeshall, A., R. Bostock, E. Luke, M. Hill, T. Creswell, C. Estep, D. Barber, L. Coop, P. Jepson, H. Beck, F. Nutter, L. Madden. 2009. NPDPN Launches Epidemiology Analysis Program. Poster at: NPDPN National Meeting, Miami FL, Dec. 2009.
47. Coop, L. 2009. Oregon Report presenting: Oregon IPPC & Western Weather Workgroup Activities – Nov. 2009. WERA-102 Annual Meeting: Climatic Data and Analyses for Applications in Agriculture and Natural Resources, Monterey, CA. Nov 17, 2009.
46. Coop, L., A. Fox, W. Mahaffee, D. Gent, W. Pfender, C. Daly, C. Thomas, P. Jepson. Forecast and Virtual Weather Driven Plant Disease Risk Modeling System. Poster at: APS National Annual Meeting, Portland, OR, August 2009.
45. Coop, L. 2009. Forecasting weather and climate for plant disease models: A western perspective. North Central Division APS Annual Meeting, Ames, IA, June 22, 2009. Symposium: Implications of Climate Change on Plant Pathogens.
44. Ambrosino, MD., L. Coop, P. Jepson. Enhancing Leafroller Parasitoids in Caneberries. Poster at: Sixth International IPM Symposium, Portland, OR, March 2009.
43. Coop, L., P. Jepson, G. Grove, A. Fox, C. Daly, W. Mahaffee, C. Thomas. 2008. Delivery of IPM Tools in Real Time for Decision Support – Pull. APS Pacific Division Annual Meeting, Jackson, WY, June 25, 2008. Symposium.
42. Coop, L., J. K. Stone, and A. Fox. 2007. A Spatial Model for Foliar Life Expectancy in Douglas Fir Affected by Swiss Needle Cast. Poster. APS National Meeting, Jul 29-30 2007. San Diego, CA. *Phytopathology* 97:S24.
41. Coop, L., C. Daly, A. Fox, D. Gent. G. Grove, D. Gubler, P. Jepson, W. Mahaffee, W. Pfender, G. Taylor. Taming Uncertainties in Multi-Scale Pest and Disease Model and Decision Support Tools for Plant Biosecurity. Presentation. APS National Meeting, Jul 29-30, 2007. San Diego, CA.
40. Pfender, W., W. Mahaffee, L. Coop, A. Fox, C. Daly, C. Thomas, W. Gubler, G. Grove, D. Gent, J. Strand, G. Taylor, P. Jepson, R. Graw. 2007. Western Weather Systems Workgroup: A collaborative effort to improve weather information for IPM. APS National Meeting, Jul 29-30 2007. San Diego, CA. *Phytopathology* 97:S92
39. Pfender, W., J. Eynard, L. Coop. 2007. Sensitivity of a rust simulation model to inputs of temperature obtained at standard weather observation height vs canopy height. APS National Meeting, Jul 29-30 2007. San Diego, CA. *Phytopathology* 97:S92
38. Stone, J. K. and L. B. Coop. 2006. Predicting the effects of climate change on Swiss needle cast.

Western International Forest Disease Work Conference. Oct 2-6, 2006. Smithers, BC.

37. Stone, J. K. and L. B. Coop. 2006. Predicting effects of climate change on Swiss needle cast disease in the Pacific Northwest. APS/CPS/MSA joint meeting, Jul 29-Aug 2, 2006, Quebec-City, QC.
36. Stone, J. K., L. B. Coop, and D. K. Manter. 2006. A spatial model for predicting effects of climate change on Swiss needle cast disease severity in the Pacific Northwest. July 18-22, 2006. Ft. Collins CO. USDA-Forest Service: Advances in Threat Assessment and its Implications for Forest and Rangeland Management.
35. Coop, L. B. 2006. Online IPM Weather Data and Degree-Days – 2006 Update. L. Coop. Poster. Apr. 6, 2006. St. Louis, MO. 5th International IPM Symposium.
34. Coop, L. and P. Jepson. 2006. Oregon State University IPPC Online Programs: IPM Decision Support Tools. Presentation. Apr. 6, 2006. St. Louis, MO. 5th International IPM Symposium.
33. Blodgett, S. W. Lanier, L. Coop and C. Ford. 2006. Montana's Integrated Pest Management Program: Developing a Museum IPM Program and a Regional Cutworm Forecast. Presentation. Apr. 5, 2006. St. Louis, MO. 5th International IPM Symposium.
32. Coop, L. 2006. Use of GIS and Weather data for online crop and pest management models. Jan 9, 2006. Corvallis, OR. OSU CSS Dept. Seminar.
31. Coop, L. 2005. Interpolation & Pest Modeling: Codling Moth Degree-Day Model. Presentation. Nov. 10, 2005. Corvallis, OR. ipmPIPE Meeting – Western Weather Systems Workgroup & CSREES.
30. Coop, L., P. Jepson, A. Fox, D. Upper. 2005. Weather networks and internet-based management tools for orchard IPM. Invited Presentation, 3rd Asia-Pacific Congress of Entomology. Oct. 2005. Jeju, S. Korea.
29. Song, Y., H. Riedl, L. Coop, M. Omeg, S. Castagnoli, and L. E. Long. 2004. Development and validation of phenology models for predicting cherry fruit fly oviposition in the Mid-Columbia area. Poster, 44th Annual Pest Management Conf., Jan 2004, Portland Oregon.
28. Coop, L. W. Bajwa, P. Jepson. Apr. 2003. Online IPM Decision Tools In the Northwest. Indianapolis Indiana. 4th National IPM Symposium/Workshop. Poster Abstract .
27. Coop, L. P. Jepson. 2003. Online Site-Specific Degree-Day Predictions Using GIS and Climate Map Technologies". Indianapolis Indiana. 4th National IPM Symposium/Workshop. Poster Abstract.
26. Apr. 2003. Indianapolis Indiana. 4th National IPM Symposium/Workshop. Poster Abstract, "Regionalization of Cutworm Forecasts and Risk Warnings". Will Lanier, Sue Blodgett, Gregory D. Johnson, and Leonard Coop.
25. Apr. 2003. Indianapolis Indiana. 4th National IPM Symposium/Workshop. Poster Abstract, "A Multi-Region Internet-based Extension Pest Alert System". Waheed Bajwa, Leonard Coop, and Paul Jepson.
24. Mar. 2003. Wageningen, The Netherlands. Poster Presentation, "A Phenological modeling and mapping system for NW USA: monitoring networks, pest models, online GIS, and site-specific predictions using open source technologies" at European Phenological Conference: Towards an operational system for monitoring, modeling, and forecasting of phenological changes and their socio-economic impacts. 31 March - 2 April.

23. Jan. 2003. Bozeman, Montana. "Applied Phenology Models. Combining weather networks, degree-days, GIS and the web for IPM decision support". Invited seminar at Dept. Entomology, Montana State University.
22. Feb. 2002. Corvallis, Oregon. "Open Source Software and IPM Decision Tools". OSU Entomology Dept. Seminar.
21. Feb. 2002. Boise, Idaho. L. Coop. "Demonstration of PMC Portal, Pest Alerts, and Web-GIS Pest Management Decision Tools". 45 minute presentation. IPPC/USDA CSREES Western Region Pest Management Center/PNW Pest Management Coalition Meeting.
20. Oct. 2001. Corvallis, Oregon. L. Coop. "Pest Management Decision Tools: Examples of web-based phenology models, GIS, and databases for IPM decision support". 45 minute presentation. IPPC/USDA CSREES Western Region Pest Management Center/PNW Pest Management Coalition Agroecological Regions Workshop: The Application of Watershed, Basin, and Ecoregion Analytical Tools to Pest Management.
19. July 2001. Queensland, Australia. L. Coop. "A Web-Based Server System for Phenology Modeling. Combining weather networks, development and risk models, GIS and the internet for Agricultural & IPM decision". Invited seminar and workshop conducted at Queensland Gov. Natural Resources and Mines, Brisbane, Queensland Australia.
18. June-July 2001. Victoria, Australia. L. Coop. "A Web-Based Server System for Phenology Modeling. Combining weather networks, development and risk models, GIS and the internet for Agricultural & IPM decision support". Invited seminar and workshop conducted at Agric. Research institutes in Knoxfield, Rutherglen, Tatura, and Horsham, Victoria Australia.
17. Jan. 2001. Bozeman, Montana. L. Coop. "Applied Phenology Models. Combining weather networks, degree-days, GIS and the web for IPM decision support". Invited seminar and workshop conducted at Dept. Entomology, Montana State University.
16. Aug. 2000. Iguassu Falls, Brazil. L. Coop, W. Bajwa, M. Kogan. "Online Application Server for Phenology Models and Maps". Poster presented at the XXIII International Congress of Entomology.
15. Dec. 1999. Atlanta, GA. L. Coop, W. Bajwa, and M. Kogan. "On-line phenology modeling and mapping using weather station networks, climate maps and GIS". Entomological Society of America, National Meetings.
14. Nov. 1999. Yakima, WA. Areawide Codling Moth Research Reports. Presentation entitled "Update on Online weather data and phenology models for areawide codling moth management".
13. April. 1999. Corvallis, Oregon. "Online IPM Decision Support". IPM in Oregon Conference 1999: Achievements and Future Directions.
12. Feb. 1999. Corvallis, Oregon. "Introduction to online Phenology Models". OSU Entomology Dept. Seminar.
11. Oct. 1998. Corvallis, Oregon. Areawide Codling Moth Research Reports. Presentation entitled "Online weather data and phenology models for areawide codling moth management".
10. Nov. 8, 1995. Raleigh, NC. Represented Oregon State University at the second meeting of the National IPM Network.
9. April 7-9, 1994. Dakar, Senegal. Presented a paper entitled 'Developing Economic Injury Levels for Grasshopper Pests of Millet' at the Sahel IPM Conference.

8. July 14, 1993. Medford, Oregon. International Pear Research Conference. Presented a paper entitled 'Geographic information systems and simulation in regional orchard management: pesticide resistance in Hood River Valley, Oregon'.
7. June 29, 1993. Portland, Oregon. Entomological Society of America (ESA) regional meetings. Presented a paper entitled 'Pear psylla resistance patterns and geographic information systems'.
6. Dec. 5-10, 1992. Baltimore, MD. ESA national meetings. Presented a paper entitled 'Grasshopper damage to pearl millet in Mali, West Africa'.
5. Dec. 6-10, 1991. Reno, Nevada. ESA national meetings. Presented a poster display entitled, 'Crop Loss Assessment and Decision Tools for Grasshoppers in Sub-Saharan Africa'.
4. July 8-12, 1991, Corpus Christi, Texas. International Sorghum/Millet INTSORMIL CRSP conference. Presented two poster displays: 1. Crop loss assessment in millet. 2. Millet pest damage recognition.
3. March 16-28, 1991. Ouagadougou, Burkina Faso, West Africa. Participated in USAID sponsored colloquy, 'Millet crop loss assessment: A colloquy on the current state of knowledge'.
 - 3a. 45 minute talk entitled 'The adjusted-length crop loss assessment method, with emphasis on USAID-funded research done in Gambia, Senegal, Mali and Chad, 1980-90'.
 - 3b. 45 minute talk entitled 'Crop loss assessment research on millet near Mourdiah, Mali'.
 - 3c. 25 minute talk entitled 'Analysis of grasshopper control in the Sahel: GHLSIM model'.
 - 3d. . Poster display entitled 'Damage recognition and assessment for pests of millet'.
2. May 1990, Corvallis, Oregon. Departmental seminar entitled 'Analysis of grasshopper control in the Sahel'. Oregon State University Department of Entomology.
1. Jan. 1990. Honolulu, Hawaii. Participated in a workshop entitled 'Modeling pest-crop interactions' organized by USAID-sponsored International Benchmark Sites Network for Agrotechnology Transfer. Presented paper GHLSIM: Sahelian grasshopper/crop loss simulation.

3. Grant and contract support – current grant support:

Year(s)	PI(s)	Agency	Title	Total \$	\$ my program
Sept 2017 - Aug 2020	Murray, K. (PD) Jepson, P. Coop, L. Halbleib, M.	USDA/ NIFA/C PPM/EI P	Climate and Weather-based decision support	\$900,000	\$120,000
July 2017 – Aug 2019	Hong, C., A Baudoin, M. Benson, L. Coop, J. Crouch, N. Dart, et al.	USDA/ APHIS/ PPQ	Enhancing boxwood blight mitigation through innovation, integration, and education	\$490,000	\$42,639
May 2017- Apr 2021	Grevstad, F (PD), Coop, L. (Co-PD), D. Bean	DoD SERDP	Incorporating photoperiodism in insect phenology models with application for the biological control of weeds on DoD lands	\$971,374	\$229,615

Aug 2018- Dec 2019	Coop, L (PD)	USDA APHIS PPQ CAPS	Development of new mapping technologies for improved risk analysis and support of field operations	\$85,000 + \$55,000 = \$140,000	\$85,000 + \$55,000 = \$140,000
July 2017- Dec 2018	J. Parke (PD), Nackley, L, Coop, L (Co- PDs)	USDA WR- IPM Center	Enhanced Implementation of the online soil solarization forecast model	\$30,000	\$8,000

**Prior Grants – cumulative total awards to my program and grants for which I was PI:
\$6,210,639. Total since last promotion: \$5,573,855.**

Aug 2018-Aug 2019. USDA APHIS PPQ CAPS. Development of new mapping technologies for improved risk analysis and support of field Operations. L. Coop, J. Bowers. \$140,000.

Sept 2017-Aug 2020. USDA NIFA CPPM EIP. Coop Portion Title: Climate and weather-based decision support. K Murray (PD), P Jepson, L Coop (Co-PD). \$900,000 [Full Grant], \$120,000 [Coop Portion].

July 2017 – Dec 2018. USDA/APHIS/PPQ. Enhancing boxwood blight mitigation through innovation, integration, and education. Hong, C., A Baudoin, M. Benson, L. Coop, J. Crouch, N. Dart, et al. \$490,000 [Full Grant], \$42,639 [Coop Portion]

July 2017- Dec 2018. USDA WR-IPM Center. Enhanced Implementation of the online soil solarization forecast model. J. Parke (PD), Nackley, L, Coop, L (Co-Pds). \$30,000 [Full Grant], \$8,000 [Coop Portion].

May 2017-Feb 2021. Dept of Defense/SERDP. Incorporating photoperiodism in insect phenology models with application for the biological control of weeds on DoD lands. F. Grevstad (PD), D. Bean (Co-PD), L Coop (Co-PD). \$971,374 [Full Grant], \$229,615 [Coop Portion].

Aug 2016-Dec 2017. USDA APHIS PPQ CPHST. Development of new mapping technologies for improved risk analysis and support of field Operations. L. Coop, G. Cook. \$89,000.

July 2016-Dec 2017. USDA WR-IPM Center. A model to predict duration of soil solarization for disinfecting nursery soils contaminated by Phytophthora spp. J. Parke (PD), Coop, L (Co-PD). \$30,000 [Full Grant], \$8,000 [Coop Portion].

July 2015- Dec 2017. USDA/APHIS (Farm Bill). Understanding environmental factors for boxwood blight development. Hong, C (PD)., A. Baudoin, M. Benson, L. Coop, J. Crouch, N. Dart, et al. \$496,178 (2015-16) + \$89,300 (2016-17) [Full Grants], \$38,809 (2015-16) + \$5,900 (2016-17) [Coop / OSU Portion].

Sept 2014- Aug 2018. USDA WR-IPM Center Signature Program. Climate and weather-based decision support tools. L. Coop (PD) and P. Jepson. \$193,066.

Sept 2014- Dec 2017. USDA/NIFA/CPPM/ARDP. Medium and extended range weather and climate forecasts scaled and tested for improved IPM decision support in US States. Coop, L., (PD), G. Grove, A. Fox, D. Johnson, A. Dreves. \$240,466 [Full Grant], \$156,492 [Coop Portion].

Sept 2012-Aug 2017. USDA NIFA SCRI. Rear and release psyllids as biological control agents - An economical and feasible mid-term solution for Huanglongbing (HLB) disease of citrus. Tom Turpen (PD) H. Browning (co-PD) J. Brown (co-PD) ...Coop, L (Key Personnel). >\$10M. OSU/Coop: \$85,829.

Sept 2015-Aug 2016. USDA APHIS PPQ CPHST. Development of new mapping technologies for improved risk analysis and support of field Operations. G. Cook, L. Coop, \$109,000.

Sept 2013-Aug 2014. USDA APHIS PPQ CPHST. Development of new mapping technologies for improved risk analysis and support of field Operations. G. Cook, L. Coop, \$25,000.

Sept 2012-Aug 2015. USDA-SARE Global Food Security and Hunger/Crop Production. A Collaborative Phenology Modeling System to Enhance Crop Management on Vegetable Farms. Andrews, N. (PD), Coop, L. (Co-PD). \$203,608. (Crop phenology/web development portion \$74,932).

Aug 2014-Jun 2015. USDA APHIS PPQ. Understanding environmental factors for boxwood blight development. C. Hong, A. Baudoin, M. Benson, L. Coop et. al. \$21,902 (subaward to L. Coop).

Apr 2013-Mar 2015. USDA-Forest Health BCIP. Incorporating Photoperiod in the Prediction of Biocontrol Agent Photoperiod in the Prediction of Biocontrol Agent Phenology and Voltinism. Grevstad, F. (P.I.), Coop, L. (Co-PI). Year 1 \$44,765, Year 2 \$46,000.

Aug 2010-Jul 2014. WSC-PIPE. Specialty Crops in the Western USA - Pest Information Platform for Extension and Education. Monitoring, diagnosis, forecasting and reduced risk management of invasive pests and diseases. USDA RMA Jepson, P (PD), Coop, L (Co-PD). \$999,969. (Pest risk modeling and mapping portion \$260,195)

Jan 2010-Jul. 2012. Sustainable grape pest management for California using weather data, models, and cultural controls. Calif. Dept. Food and Agri. SCBGP. Coop, L. (PD of subcontract); Gubler, W.D., Broome, J.C. \$154,359.

Mar 2010 – Feb 2014. Automated mesoscale pest risk forecast maps for agricultural production and potential plant biosecurity threats. USDA AFRI Plant Biosecurity. Coop, L (PD), Gent, D, Mahaffee, W, Johnson, D., Gubler, W.D. \$996,112.

July 2009 – June 2010. NPDN Diagnostic Data Anomalies: Geographic Visualization and Mining System USDA NPDN (Nat. Plant Diag. Network). L. Coop, P. Jepson. \$53,400.

Sept 2009 – Aug 2011. IPM Disease Risk Forecasts and Virtual Weather for Western States. USDA WRIPM Specialty Grants. Coop, L.B., Jepson, P., Gent, D., Grove, G. \$179,221.

April 2009 – Mar 2011. Adapting and improving swiss needle cast management tools to incorporate climate change. USDA Forest Service PNW Region – FHP Technology Development Program. Stone, J., Coop, L. \$121,581.

Jan 2008 - Dec 2009. Accessing IFPnet weather data through the OSU Integrated Plant Protection Center pest and disease modeling system. Columbia Gorge Fruit Growers/ARF. L. Coop, S. Castagnoli, L. Long. \$12,000.

July 2008 – June 2009. NPDN Diagnostic Data Anomalies: Geographic Visualization and Mining System USDA NPDN (Nat. Plant Diag. Network). L. Coop, P. Jepson. \$82,583.

Apr 2009 – Mar 2011. Implementing conservation biological control for caneberries. USDA PMAP. P. Jepson, L. Coop, J. Lambrinos. \$270,835.

Jun 2007 – May 2008. NPDN Diagnostic Data Anomalies: Geographic Visualization and Mining System USDA NPDN (Nat. Plant Diag. Network). L. Coop, P. Jepson. \$80,000.

Jan-Nov 2007. A Spatial model for predicting swiss needle cast distribution and severity. Swiss Needle Cast Cooperative. J. Stone, L. Coop. \$48,532.

Jul 2006 – Jun 2007. NPDN Diagnostic Data Anomalies: Geographic Visualization and Mining System

USDA NPDN (Nat. Plant Diag. Network). L. Coop, P. Jepson. \$81,000.

Jan 2006-Jan 2009. Taming uncertainties in multi-scale pest and disease model and decision support tools for plant biosecurity. USDA NRI – Plant Biosecurity. L. Coop, P. Jepson, C. Daly, W. Mahaffee, G. Taylor. \$645,000.

Jul 2005 – Jun 2006. NPDN Diagnostic Data Anomalies: Geographic Visualization and Mining System USDA NPDN (Nat. Plant Diag. Network). P. Jepson, L. Coop, H. Luh. \$110,000.

Jun 2005 – May 2006. Assessing the contribution of biocontrol for leafrollers in caneberries ORBC (OR Raspberry and blackberry Commission/ARF): L. Coop, M. Ambrosino. \$9,879.

Mar 2005 – Dec 2005. Determining the potential of biocontrol for leafrollers in caneberries. USDA WR-IPM. L Coop, P. Jepson. \$59,979

Sep 2005 – Aug 2008. Enabling transition to biocontrol of leafrollers in caneberries. USDA CAR (Crops at Risk). P. Jepson, L. Coop. \$477,427.

Sep 2005 – Aug 2006. Swiss Needlecast GIS modeling framework. Swiss Needle Cast Cooperative. J. Stone, L. Coop, D. Manter. \$25,000.

Jul 2004 – Jun 2005. NPDN Diagnostic Data Anomalies: Geographic Visualization and Mining System USDA NPDN (Nat. Plant Diag. Network). P. Jepson, L. Coop, H. Luh. \$105,000

Jun 2005. New server for pest modeling, GIS, and webserving. NPDN/WRPMC. L. Coop, P. Jepson. \$5,000.

Feb 2004 - May 2004. Development of a Database of Host and Pest Taxonomies for NPDN (National Plant Diagnostic Network). L. Coop, D. Upper, P. Jepson. Subcontract with USDA/APHIS/NAPIS/NPDN/Purdue Univ. \$10,000.

July 2004 - June 2006. Stem Rust Prediction and Decision Aid for Disease Management. C. Lipp, L. Coop, W. Pfender. CSREES GSCSSA. \$84,908.

Aug 2003 - July 2005. Regional Internet and GIS-Based Multiple pest Forecasting and Risk Management System. L. Coop, and R. Spotts, Project Directors. USDA WR-IPM Grants Program. \$98,000.

Aug 2003 - July 2005. Electronic Delivery of IPM and Decision Support Tools for Field Use. R. William, M. Engels. USDA WR-IPM Grants Program. \$29,000.

======(17 grants, \$636,784 total to date)

Jan - July 2003. Cutworm Risk Mapping GIS. Sub-contract to Montana State University. Provide automated data processing and mapping of cutworm risk monitoring data for 7-state western region. \$5,000.

Sept 2001 - Aug 2003. IPM Web Portal System. Western Regional Pest Management Centers USDA Grants Program. Oregon Proposal FY 2002-2003 \$26,000 (Objective 2. Establish a state/multi-state/territory based pest management information and communication network linking USDA and other Federal agencies with agricultural researchers and stakeholders throughout the region.) (Lead authors Jeffrey Jenkins, Paul Jepson and Marcos Kogan).

July 1999 - July 2002. Information Exchange Driven IPM: Applied Research and Decision Support. L. Coop, M. Kogan, W. Bajwa. WR-IPM USDA Grants Program. \$100,000.

July 1999 - June 2001. Web-based Decision Support System for Integrated Pest Management. Online

version of PNW Pest Control Handbooks. L. Coop, Principal Investigator. OSU Extension Service Innovative Projects. \$10,000.

July 1999 - Jan 2002. Online Decision Support System for Integrated Pest Management on Peppermint - IPMP version 3.0. R. Berry, L. Coop. Mint Industry Research Council & Oregon Mint Commission. \$19,648.

Jan 1999 - Sept 1999. Areawide management of Codling Moth. USDA areawide control project. (Co-author with M. Kogan and W. Bajwa). \$20,000.

July 1998 - June 1999. Oregon Processed Vegetable Commission. Regional pest monitoring program. \$9,800.

Mar 1998 - Feb 1999. Areawide Management of Codling Moth. L. Coop, M. Kogan, W. Bajwa. USDA Areawide Control Project. \$15,000

Mar 1997 - Feb 1998. Areawide Management of Codling Moth. L. Coop, M. Kogan. USDA Areawide Control Project. \$27,416

Jun 1996 - Jun 1998. Phenology Mapping of Tree Fruit Pests. L. Coop, M. Kogan. Western Regional IPM USDA Grants Program. \$60,000.

Jun 1995 - July 1996. Phenology Mapping of Tree Fruit Pests. L. Coop, M. Kogan, B. A. Croft. Western Regional IPM USDA Grants Program. \$15,910.

March 1995. Biological Control of Spider Mites with Neoseiulus fallacis. L. Coop, B. A. Croft. Strawberry Commission/CAAR. \$12,000.

Feb 1995 - Jan 1996. Dispersal of Neoseiulus fallacis, a Biological Control Agent of Spider Mites in Strawberry and Raspberry. L. Coop, B. A. Croft. Northwest Center for Small Fruits Research (USDA). \$12,000.

May 1991 - Apr 1992. Decision tools for grasshopper control in the Sahel. \$101,000. L. Coop, B. A. Croft. USAID/Africa Bureau. Matched by additional field research support of \$25,000 by USAID/Mali.

Jan 1990 - Apr 1991. Economic analysis of grasshopper and locust control in the Sahel of Africa. L. Coop, B. A. Croft. \$61,000. USAID/Africa Bureau. Matched by additional field research support of \$50,000 by USDA/OICD and USAID/Mali.

June 1987 - May 1989. Management of corn earworm in processed sweet corn. L. Coop, R. Drapek, B. A. Croft. Oregon State University Agricultural Experiment Station. \$30,000.

Jan 1987 - Dec 1991. Control of corn earworm in processed sweet corn. L. Coop, R. Drapek, B. A. Croft. Oregon Processed Vegetable Commission. \$47,000.

D. SERVICE

1. University Service

a. Integrated Plant Protection Center

I serve as Associate Director for Decision Support Systems and participate and assist in meetings, committees, decision making, CAS Unit Head meetings, etc. I have served as IPPC/Oregon IPM Coordinator Representative and numerous WERA-1017 Western Region IPM Coordinator meetings. I

served as lead P.I. for the NIFA/WR-IPM Center funded Signature Program (2013-2018).

b. Entomology, BPP, and Horticulture Depts.

I have served in the usual ways by serving on committees, giving and participating in seminars and trainings, and providing guest lectures at courses led by others in the unit.

2. Service to the Professional Community

2a) Peer-Review of Journal Articles

2014, 2015, 2016 – Review articles for the Journals: 1) Plant Disease, 2) Phytopathology (x2), and 3) Invasion Biology

2b) Service on Grant and Awards Review Panels:

2016 – Undergraduate Entomology Scholarship Award

2013 – USDA NIFA Pest Management Alternatives Program (PMAP)

3. Service to the Public (Professionally Related)

3a. Extension Presentations

EXTENSION ACTIVITIES, PRESENTATIONS, TRAININGS, AND INTERNATIONAL (last 28 years)

Total no. since last promotion (2003): 44 (probably several more unaccounted for)

Total no. 1990-2003: 12

44. Coop, L. 2017. Weather Models and Predictive Tools for IPM. Pesticide Stewardship Conference and Recertification Course, Univ. Idaho Extension. Nov. 30, 2017. Boise, ID. 1 hr invited talk.
43. Coop, L. 2017. Web based decision tools for pest management: New and Used. Pesticide Recertification Course. Jan 24, 2017. Central Point, OR. 1 hr invited talk.
42. Coop, L. and N. Andrews. 2016. Introducing and Using CROPTIME: Forecast Options for DD Models. Hands-on computer workshop. Mar. 14, 2016. Aurora, OR.
41. Coop, L. and N. Andrews. 2016. Weather forecasting (long-term forecasts) and future capacity for the modeling system and user interface. In: Introducing and Using CROPTIME: Vegetable Crop Schedule with Degree-Days. 2.5 hr lecture and hands-on computer workshop. 2016 Small Farms Conference. Feb. 20, 2016. Corvallis, OR.
40. Coop, L. 2016. Integrated Pest Management as it Relates to Climate. Blue Mountain Horticulture Society Annual Meeting. Feb. 10, 2016. Milton Freewater, OR.
39. Coop, L., P. Jepson, and C. Landgren. 2015. Tools for sprayers and IPM innovators – with focus on aphids and midges. Oregon Christmas Tree Assoc. Meeting. Mar 6, 2015. Wilsonville, OR.
38. Coop, L. 2015. Crops and Climate – Has it been getting warmer in the Pacific Northwest and how will that affect plant/crop phenology. FRED Talk (Food and Farming Research Extension and Development). Small Farms Conference. Corvallis OR Feb. 28th 2015.
37. Andrews, N., D. Andrews, L. Coop. 2015. Croptime: Crop Phenology Models Interface Usability Tests. NWREC Aurora, OR. Jan 27, 2015.

36. Halbleib, M, C. Landgren, G. Ellen, L. Coop, G. Ahrens, T. Stone, D. Silen, others. Visioning session for IPM of Christmas Trees program. NWREC Aurora, OR. Jan 23, 2015.
35. Andrews, N., C. Bubl, L. Coop, A. Garrett, S. Kawai, J. Myers, H. Noordijk, E. Peachey, and D. Sullivan. 2015. Croptime: Vegetable degree-days. NW Horticultural Soc. Ann. Mtg. Jan 13, 2015, Canby, OR.
34. Coop, L. and A. Dreves. 2014. Using a phenology model for spotted wing Drosophila. SWD Tool Conversations - Extension Worksop. NWREC Aurora, OR Dec 11, 2014.
33. Coop, L. 2014. Spotted Wing Drosophila: Predict Spring Activity and Generation Increase: Degree Day Model. NWREC Spotted Wing Drosophila Extension Workshop May 22, 2014. Aurora, OR.
32. Coop, L. 2014. Tree fruit decision support – phenology and plant disease risk models. Presentation at N. Willamette Tree Fruit Growers Meeting. Feb. 15, 2014. Salem, Oregon.
31. Coop, L. 2014. Weather data and weed control: degree-day models and pesticide drift forecasts. Presentation at Douglas County Weed Day 2014. Feb. 5, 2014. Roseburg, Oregon.
30. Coop, L. 2014. Using phenology models and pheromone traps. Presentation at IPPC Chemical Applicators Short Course, Jan. 7, 2014. Wilsonville, Oregon.
29. Coop, L. 2013. Degree Days, Climate and Mosquito Risks - Some Guidelines and Tools For Decision Support. Oregon Mosquito and Vector Control Association – Fall Meeting and Recertification Workshop. Oct 17, 2013, Newport Oregon.
28. Coop, L., M. Guzzy. 2012. IPPC capabilities with pest modeling and risk mitigation models – NORPAC growers meeting. Grower Meeting. Feb. 15, 2012, Salem, OR.
27. Coop, L. 2012. Update on Weather Driven Pest Models for IPM – IFPNET Cherry & Pear Growers. IFPnet Management Team Meeting. Feb. 10, 2012. The Dalles, OR.
26. Coop, L. 2012. Using Degree-day Tools to Improve Pest Management. Presentation at: Non Crop Vegetation Management Course. Jan. 25, 2012, Corvallis, OR.
25. Coop, L., S. Castagnoli. 2011. Use of virtual weather for tree fruits. Hood River, OR. Training workshop for consultants and fieldmen. Mar. 10, 2011.
24. Mahaffee, W., Coop, L., 2011. Use of virtual weather for winegrapes. Training workshop for winegrape growers. Salem, OR. Mar. 2, 2011.
23. Coop, L., 2011. Using weather driven Models and virtual data at uspest.org/wea. Training workshop - Potato Seed Growers Meeting. Missoula, MT. Feb. 18, 2011.
22. Coop, L., P. Jepson, M. Halbleib, B. Pfender 2011. Virtual Weather Stations for the Willamette Valley. Training workshop for agricultural consultants and field representatives. Chemeketa Campus Extension. Feb. 10, 2011, Salem, OR.
21. Coop, L., 2010. Using weather driven Models at uspest.org/wea. Invited talk at Montana Potato Seed Growers Meeting. Nov. 11, 2010, Bozeman, MT.
20. Ellen, G., P. Jepson, L. Coop, Mace Vauhan. 2010. Farmscaping for Predators, Parasitic Wasps, and Native Bees in PNW Berry Systems. Farmwalk and Farmscaping Exercise for Blueberry and Caneberry Growers. Riverbend Organic Farms, LLC, July 13, 2010, Jefferson, OR.

19. Coop, L., G. Ellen, P. Jepson. 2010. Biological and landscape alternatives for leafroller management in caneberries – Fifth Annual Pre-Season Production Workshop for Caneberry Growers. Oregon Raspberry and Blackberry Commission. Mar. 3, 2010, Woodburn, OR.
18. Coop, L. & The Western Weather Workgroup. 2010. The Prospect of virtual weather for pest and disease management in winegrapes. Oregon Wine Industry Symposium. Feb 22, 2010, Eugene, OR.
http://explorer.oregonwine.org/symposium/files/Sessions/Viticulture/VineyardTech/Vineyard_Tech.pdf
17. Coop, L. 2010. Virtual Weather Stations and Their Application to Pest and Disease Modeling. Blue Mountain Horticultural Society. Annual Meeting. Feb. 2, 2010, Milton Freewater, OR.
16. Coop, L., G. Ellen, P. Jepson. 2010. Biology and Ecology of Parasitoids in Raspberries – Extension talk at 55th Annual N. Willamette Horticulture Society Meeting, Organic Section, Jan. 12, 2010.
15. Coop, L., S. Castagnoli. 2009. Hood River IPM Insect and Disease Pest Modeling Website Review/Preview and Focus Group. 2-hour meeting/presentation/focus session w/selected growers and fieldmen. Dec. 11, Hood River, OR.
14. Coop, L., L. Long. 2009. The Dalles IPM Insect and Disease Pest Modeling Website Review/Preview and Focus Group. 2-hour meeting/presentation/focus session w/selected growers and fieldmen. Dec. 11, The Dalles, OR.
13. Coop, L., G. Ellen. 2009. On-going Work on Beneficials in Caneberries. Caneberry Open House – Extension Event, NWREC, July 8, 2009. Aurora, OR.
12. Coop, L. 2009. Conservation Biological Control – Supporting the Needs of Leafroller Parasitoids in Caneberries. Bugscaping Farm Walk – Extension Program, June 16th, 2009. Woodburn, OR.
11. Coop, L. 2008. Orange Tortrix: Biology and Biological Control. NW Horticultural Society Meeting, invited speaker. Jan. 17, 2008. Canby, OR.
10. Coop, L. 2008. Swiss Needle Cast Risk Model Presentation. Swiss Needle Cast Cooperative Field trip, Apr 29, 2008. Newport-Corvallis, OR.
9. Coop, L. 2006. Weather Models and Pest Management Decision Timing. Integrated Soil Nutrient and Pest Management Workshop, Nov. 8, 2006. Corvallis, OR. OSU Extension Service.
8. Coop, L. and P. Jepson. 2006. Support for grower networks by OSU IPPC – Online weather data and pest models. Sept 12, 2006. Milton-Freewater, OR. Grower meeting run by Umatilla Co. Extension.
7. Coop, L. 2006. Weather Models and Pest Management Decision Timing. Presentation. Feb 17, 2006. Redmond, OR. Presentation – Central Oregon Pest Management Course, OSU Extension.
6. Coop, L. 2006. Concepts of IPM. Redmond, OR. Feb 17, 2006. Redmond, OR. Presentation – Central Oregon Pest Management Course, OSU Extension.
5. Coop, L. 2005. Weather Models and Pest Management Decision Timing. Integrated Soil Nutrient Management Options: Practices and Tools to Protect Water Quality. Oct. 26, 2005. Vancouver, WA. iSNAP Workshop.
4. Coop, L. 2005. Web-Based Decision Support Tools for Nursery IPM. Farwest Nursery Show

Seminars. Oregon Convention Center, Aug 2005. Portland, OR.

3. Coop, L. 2005. Using Degree-Day Models in Pest Management. Washington State University. 6th Annual Small Fruit Grower's Workshop, Mar. 2004. Vancouver, WA.
2. Coop, L. 2003. Dec. Lyndon, Washington. "Degree-days for Pest Management: Website Decision Making Tools" presentation at the 5th Annual Small Fruit Grower's Workshop. WSU Lyndon, WA.
1. Coop, L. 2003, Jun. Londrina, Brazil. Co-presented a workshop, "Systems IPM, Decision Support Systems and Pest Alerts", sponsored by USDA and Embrapa, Brazil.

Last Promotion Oct 2003.

12. Coop, L. 2003. Apr. Hood River, Oregon. "Web-based phenology modeling and mapping: applications for pest and disease management in tree fruits". Mid-Columbia Agric. Res. and Ext. Center Seminar.
11. Coop, L. 2003. Mar. Vancouver, WA. "Degree-Days for Pest Management: Website Decision Making Tools". Washington State University. 5th Annual Small Fruit Grower's Workshop in Vancouver WA.
10. Coop, L. 2003. Jan. Bozeman, Montana. "Applied Phenology Models. Combining weather networks, degree-days, GIS and the web for IPM decision support". IPM Crop School Workshop, Montana State University.
9. Coop, L. 2001, Sept. Corvallis, Oregon. "Web-Based Pest Management Tools". 2.5 hour OSU Extension Conference Technical Workshop with B. Simko, W. Bajwa, J. Pscheidt.
8. Coop, L. 2001, July 11. Victoria, Australia. "Virtual crop a model answer to growers' prayers" By Andrew Madden. The Weekly Times, Business Section. (Newspaper article).
7. Coop, L. M. Kogan, and W. Bajwa. 1999. Dec. Wenatchee, Washington. "Extending the principles and lessons learned outside the project and to other commodities". In: "Areawide Program for Suppression of Codling Moth: Summary of the Effect of 5 years of Control". Washington Horticultural Association Annual Meeting.
6. Coop, L. 1999. May. The Dalles, Oregon. "Introduction to online phenology models for IPM decision support", IPM workshop with Cherry producers.
5. Coop, L. 1998. Dec. Portland, Oregon. Portland Parks/Recreation Pesticide Applicators Recertification Class, Presentation titled "IPM on the World Wide Web".
4. Coop, L. 1991. Aug-Oct. Mali, West Africa. Directed second year of project, Crop Loss Assessment and Improved Decision Tools for Grasshopper Control in the Sahel. Survey of pest and crop in eight villages, a yields and harvest crop loss assessment, and cage experiments to determine millet damage rates by five grasshoppers species. Supervised project personnel including one American Entomologist (MS), one Senegalese Entomologist (PhD), two Malian Agronomists (MS), and three Malians for language interpretation/field work. Included at least 4 Extension meetings with growers on "IPM practices for millet pests".
- 1-3. 1990. June-July & Aug-Oct. Mali, West Africa. Supervision of crop loss assessment project. Sampling of grasshoppers and millet, crop loss assessment, cage experiments on effects of grasshoppers and Meloidae to millet spikes. Included at least 3 Extension meetings with growers on "IPM practices for millet pests".

E. AWARDS

1. National and International Awards and Memberships

2013-2018 Western IPM Centers Signature Program

2012 IPM International Achievement Award, IPM Symposium Mar. 28, 2012, Memphis TN. Awarded to members of the Integrated Plant Protection Center.

2007-2015. Member American Phytopathological Society

1983-2001,2007-present. Member of Entomological Society of America.

2005-present. Member Western & Midwest Weather Systems Workgroups

2004-2014. Member National Plant Diagnostics Network

1997-2003. Member local and campus Linux computer user groups.

1998. Infoworld Top 100 Innovative Technology Achievements Award.

1995-2006. National IPM Network representative and member of Standards Committee.

1992-1995. Member Organization for Sustainable Agriculture.

1988-1992. Member of Southwestern Entomological Society.

1986. OSU Entomology graduate student travel award.

1980-81, 1984-85. Departmental representative in Graduate and Professional Student Association.

1977. Freshman chemistry award (top student in general chemistry).

1975-79. Kansas State Scholar award and scholarship.

1975-79. Baker University Honors scholarship.

SKILLS

Development of integrated pest management systems

Systems modeling of arthropod, weed, disease, and crop phenology, population dynamics and ecological interactions

Development of decision support systems (integrated delivery systems, knowledgebases, expert systems, models, databases, and GIS)

Development and maintenance of World Wide Web pages (HTML, XML, Javascript, etc.)

Geographic information systems: GRASS 5.4 & 6.4, GRASSLinks, IDRISI, ArcView

GIS database development and delivery (USGS NLCD & DEM, US Census Bureau TIGER, EPA Ecoregions, STATSGO Soils, etc.)

Development of database applications (MySQL, Perl DBI, DB_Browser)

Global Positioning Systems (GPS)

Statistical Analysis: NCSS, R

Spatial Population Modeling and Climate Suitability Mapping: GRASS GIS, R, CLIMEX

Statistics Classes Completed: Statistical Methods for Research Workers, Field Plot Techniques, Regression Analysis, Multivariate Analysis, Quantitative Ecology, Systems Ecology, Simulation Analysis (audit), Statistical Computing Survey

Programming Languages: Perl, R, C, C++, Pascal, FORTRAN, BASIC, PROLOG, UNIX shell scripts, CGI, HTML, Javascript, Coldfusion

Computer Science Classes Completed: Intro Computing (structured BASIC), Fund. Comp. Prog. (Pascal I & II), Computer Organization and Architecture, Data Structures I-III, Computer Languages (ML, Lisp, C++, Smalltalk, Prolog), Expert Systems for Agriculture (Prolog), C/Unix (audit), Unix Systems Administration (audit), Networking (audit)

Computer Operating Systems/Applications: UNIX, LINUX & PC systems administration, internet, Macintosh, Windows, spreadsheet, database, word processing, graphics (Photoshop/GIMP), multimedia, Google Maps API, GRASS GIS, GRASSLinks webGIS, Idrisi GIS, ArcView GIS, open source software tools in general.

Collaborative: teaching, personnel management, project management, grant writing and submission

LANGUAGE PROFICIENCY

English (native)

French (2 years University level): written, verbal - some.

German (3 years High School, 2 years University level): written, verbal - some.

REFERENCES

Current and former supervisors may be contacted. A list of additional references will be provided upon request.