KENNETH F. RAFFA
Emeritus Professor, Dept. Entomology
Hilldale / Vilas Distinguished Achievement / Douglas D. Sorenson Professor
Univ. Wisconsin-Madison

EDUCATION:

B.S.	St. Joseph's College	Biology	1972
M.S.	University of Delaware	Entomology	1976
Ph.D.	Washington State University	Entomology	1980

PROFESSIONAL EXPERIENCE:

USDA Forest Service, Pest Management Group, Asheville, NC., Summers 1973, 1974: Forest Tech; Insect & disease surveys; Fusiform rust cultivar and pesticide treatment evaluations

Univ. Delaware, Research Assistant. 1974-1976.
Biological control of the gypsy moth, *Lymantria dispar*

Washington State Univ. Research Assistant. 1976-1980.
Host resistance mechanisms to bark beetles; Population ecology and behavior of the mountain pine beetle and fir engraver

EI DuPont de Nemours & Co. Biochemicals Dept, Section Research Biologist 1981-1985
Nontraditional chemical discovery programs based on plant/insect interactions: Induced defense elicitors, antifeedants; Insecticide Resistance Management, Synergists

Univ. Wisconsin, Dept. Entomology. Assistant Professor 1985-1989; Associate Professor 1989-1992; Professor 1992-present. Forest entomology; Plant-Insect interactions; Insect ecology; Biological control; Symbioses; Invasive species

AWARDS:

Distinguished Dissertation Award finalist, Council of Graduate Schools/University Microfilms International, 1981. $500.
Comstock Outstanding Graduate Student Award, Entomol Soc Amer, Pacific Branch, 1979.
Outstanding Doctoral Dissertation, WSU, 1981.
Glenn Pound Outstanding Researcher Award, College of Agricultural and Life Sciences, University of Wisconsin, 1991. $2000.
ESCOP/ASCOP Leadership Development Course, 1993-4.
USDA Forest Service "Bridging Ideas and Partnerships" Award. 1995.
Robert G.F. and Hazel T. Spitze Land Grant Faculty Award for Excellence in Combined Research, Teaching, and Outreach. 1999. $3000.
Vilas Associate. 2000. $20000.
Michael Duke Memorial Lectureship. North Carolina State Univ. 2000.
E. P. Catts Memorial Lectureship, Washington State University. 2003
Kellett MidCareer Research Award, Univ. Wisconsin. 2008. $60,000.
Best paper during 2009-2010, Agricultural and Forest Entomology. 2010
Beers-Bascom Professorship in Conservation, Univ. Wisconsin. 2010. $75,000.
Entomological Society of America Founders Award. 2010.
Top three most-cited papers during 2006-2010, Ecological Entomology. 2011

Silverstein-Simeone Lecture Award, International Society of Chemical Ecology, 2011.
Landsdowne Lectureship. Univ. Victoria 2011.
Fellow, Entomological Society of America. 2012.
University of Delaware CANR Distinguished Alumnus Award, 2015.
Vilas Distinguished Achievement / Douglas D Sorenson Professor, Univ. Wisconsin. 2015. $75,000.
Hilldale Award in the Biological Sciences, Univ. Wisconsin. 2017. $7500.
Entomological Society of America Plant-Insects Ecosystems Lifetime Achievement Award. 2018
Western Forest Insect Work Conference Founders Award, 2020

GRANTS: $9,606,945

RESEARCH:

Web of Sci: H-Ind: 70, Citat: 18,809; **Google Schol**: H-Ind: 91, Citat: 32,844 110-Ind: 309

Publications

Refereed Primary Journal Articles

1. Raffa, K.F. 1977. Potential alternate hosts of the gypsy moth parasite, *Apanteles porthetriae*. Environ. Entomol. 9: 57-59.
2. Raffa, K.F. 1977. Some parasites of Lepidoptera larvae recently collected in Delaware. Entomol. News 88: 81-84.
3. Zack, R.S., E.J. Davis, & K.F. Raffa. 1979. A new host record and notes on *Nosodendron californicum* Horn. Coleop. Bull. 33: 74.
4. Raffa, K.F., & A.A. Berryman. 1982. Gustatory cues in the orientation of *Dendroctonus ponderosae* (Coleoptera: Scolytidae) to host trees. Can. Entomol. l14: 97-l04.
5. Raffa, K.F., & A.A. Berryman. 1982. Physiological differences between lodgepole pines resistant and susceptible to the mountain pine beetle and associated microorganisms. Environ. Entomol. 11: 486-492.
6. Raffa, K.F., & A.A. Berryman. 1982. Accumulation of monoterpenes and associated volatiles following inoculation of grand fir with a fungus transmitted by the fir engraver, *Scolytus ventralis* (Coleoptera: Scolytidae). Can. Entomol. l14: 797-810.
7. Raffa, K.F., & A.A. Berryman. 1983. The role of host plant resistance in the colonization behavior and ecology of bark beetles. Ecol. Monogr. 53: 27-49.
8. Raffa, K.F., & A.A. Berryman. 1983. Physiological aspects of lodgepole pine wound responses to a fungal symbiont of the mountain pine beetle. Can. Entomol. 115: 723-734.
9. Raffa, K.F., & T.M. Priester. 1985. Synergists as research tools and in agriculture. J. Agric. Entomol. 2: 27-45.
10. Berryman, A.A., B. Dennis, K.F. Raffa, & N.C. Stenseth. 1985. Evolution of optimal group attack, with particular reference to bark beetles (Coleoptera: Scolytidae). Ecology 66: 898-903.
11. Raffa, K.F., A.A. Berryman, J. Simasko, W. Teal, & B.L. Wong. 1985. Effects of grand fir monoterpenes on the fir engraver (Coleoptera: Scolytidae) and its symbiotic fungi. Environ. Entomol. 14: 552-556.
12. Leeper, J.R., & K.F. Raffa. 1986. Baseline resistance/susceptibility data for chlorpyrifos, methomyl, and permethrin in *Heliothis virescens* (F.) and *Heliothis zea* (Boddie) cultures. Tropical Pest Mgmt. 32: 137-145.
13. Raffa, K.F., & A.A. Berryman. 1986. A mechanistic computer model of mountain pine beetle populations interacting with lodgepole pine stands and its implication for forest managers. Forest Sci. 32:789-805.

14. Brattsten, L.B.; C.W. Holyoke, Jr.; J.R. Leeper; & K.F. Raffa. 1986. Insecticide resistance: Challenge to pest management and basic research. Science 231: 1255-1260.
15. Raffa, K.F., & A.A. Berryman. 1987. Interacting selective pressures in conifer-bark beetle systems: A basis for reciprocal adaptations? Amer. Nat. 129: 234-262.
16. Raffa, K.F. 1987. Effect of host plant on cannibalism rates by fall armyworm (Lepidoptera: Noctuidae) larvae. Environ. Entomol. 16: 672-675.
17. Raffa, K.F. 1987. Maintenance of innate feeding preferences by a polyphagous insect despite ingestion of associated deleterious chemicals. Entomol. Exper. & Applic. 44: 221-227.
18. Raffa, K.F. 1987. Influence of host plant on deterrence by azadirachtin of feeding by fall armyworm larvae (Lepidoptera: Noctuidae). J. Econ. Entomol. 80: 384-387.
19. Raffa, K.F., & E.B. Smalley. 1988. Response of Red and Jack Pines to inoculation with microbial associates of the Pine Engraver, *Ips pini*. Can. J. For. Res. 18: 581-586.
20. Raffa, K.F., & J.L. Frazier. 1988. A generalized model for quantifying behavioral desensitization to antifeedants. Entomol. Exp. & Appl. 46:93-l00.
21. Raffa, K.F., & D.J. Hall. 1988. Seasonal activities of the Pine Root Collar Weevil, *Hylobius radicis* Buchanan (Coleoptera: Curculionidae), in Red Pine stands undergoing decline. The Great Lakes Entomol. 21: 69-74.
22. Raffa, K.F., & E.B. Smalley. 1988. Host resistance to invasion by lower stem and root infesting insects of pine: Response to controlled inoculations with the fungal associate *Leptographium terebrantis*. Can. J. For. Res. 18: 675-681.
23. Raffa, K.F., & G.L. Lintereur. 1988. New host record and developmental notes on the pear slug, *Caliroa cerasi* (L.), feeding on *Cotoneaster* and *Chaenomeles* species. The Great Lakes Entomol. 21: 75-79.
24. Raffa, K.F., & D.W. Hunt. 1988. Use of baited pitfall traps for monitoring pales in weevil, *Hylobius pales* (Herbst) (Coleoptera: Curculionidae), adult populations. The Great Lakes Entomol. 21: 125-127.
25. Leeper, J.R., K.F. Raffa, & J.A. Bruhn. 1988. Analysis of mortality characterization in developing LD values from topical application test results. Tropical Pest Mgmt. 34:404-406.
26. Stavney, E.A., & K.F. Raffa. 1988. Collection method of New York Weevil, *Ithycerus noveboracensis*, adults. Entomol. News. 99:164-166.
27. Raffa, K.F., & R.J. Steffeck. 1988. Computation of response factors for quantitative analysis of monoterpenes by gas liquid chromatography. J. Chem. Ecol. 14:1385-1390.
28. Raffa, K.F., & E.B. Smalley. 1988. Seasonal and longterm responses of host trees to microbial associates of the pine engraver, *Ips pini*. Can. J. For. Res. 18: 1624-1634.
29. Raffa, K.F., & D.J. Hall. 1988. *Thrips calcaratus* Uzel (Thysanoptera: Thripidae), a new pest of basswood trees in the Lake States. Can. J. For. Res. 18: 1661-1662.
30. Hunt, D.W.A., & K.F. Raffa. 1989. Attraction of the pine root collar weevil, *Hylobius radicis*, and the pitch-eating weevil, *Pachylobius picivorus* (Coleoptera: Curculionidae), to ethanol and turpentine in pitfall traps. Environ. Entomol. 18: 351-355.
31. Raffa, K.F., & D.W. Hunt. 1989. Microsite and interspecific interactions affecting emergence of root-infesting pine weevils (Coleoptera: Curculionidae) in Wisconsin. Annals Entomol. Soc. Amer. 82: 438-445.
32. Berryman, A.A., K.F. Raffa, J.A. Millstein, & N.C. Stenseth. 1989. Interaction dynamics of bark beetle aggregation and conifer defense rates. Oikos. 56: 256-263.
33. Raffa, K.F. 1989. Genetic engineering of trees to enhance resistance to insects: Evaluating the risks of biotype evolution and secondary pest outbreak. BioScience. 39: 524-534.
34. Raffa, K.F., & K. D. Klepzig. 1989. Chiral escape of bark beetles from predators responding to bark beetle pheromones. Oecologia. 80: 566-569.
35. Rieske, L.K., D.W.A. Hunt, & K.F. Raffa. 1989. *Microctonus pachylobii* (Hymenoptera: Braconidae) parasitizes *Hylobius* weevils in Wisconsin: New host genus and geographic records. Entomol. News. 100: 153-154.

36. Rieske, L.K., & K.F. Raffa. 1990. Use of a monitoring system to evaluate pesticide efficacy and residual activity against two pine root weevils, *Hylobius pales* and *Pachylobius picivorus* (Coleoptera: Curculionidae), in Christmas tree farms. Great Lakes Entomol. 23: 189-193.
37. Rieske, L.K., & K.F. Raffa. 1990. Dispersal patterns and mark-recapture estimates of two pine root weevil species *Hylobius pales* and *Pachylobius picivorus* (Coleoptera: Curculionidae), in Christmas tree plantations. Environ. Entomol. 19: 1829-1836.
38. Rieske, L.K., & K.F. Raffa. 1991. Effect of varying ethanol and turpentine levels on attraction of two pine root weevil species *Hylobius pales* and *Pachylobius picivorus* (Coleoptera: Curculionidae). Environ. Entomol. 20: 48-52.
39. McCown, B.H., D.E. McCabe, D.R. Russell, D.J. Robison, K.A. Barton, & K.F. Raffa. 1991. Stable transformation of *Populus* and incorporation of pest resistance by electrical discharge particle acceleration. Plant Cell Reports. 5: 590-594.
40. Klepzig, K.D., K.F. Raffa, & E.B. Smalley. 1991. Association of insect-fungal complexes with Red Pine Decline in Wisconsin. For. Sci. 37: 1119-1139.
41. Codella, S.G., Jr., W.H. Fogal, & K.F. Raffa. 1991. The effect of host variability on growth and performance of the Introduced Pine Sawfly, *Diprion similis*. Can. J. For. Res. 21: 1668-1674.
42. Raffa, K.F. 1991. Temporal and spatial disparities among bark beetles, predators, and associates responding to synthetic bark beetle pheromones: *Ips pini* in Wisconsin. Environ. Entomol. 20: 1665-1679.
43. Hunt, D.W.A., & K.F. Raffa. 1991. Orientation of *Hylobius pales* and *Pachylobius picivorus* (Coleoptera: Curculionidae) to visual cues. Great Lakes Entomol. 24: 225-229.
44. Krause, S.C., & K.F. Raffa. 1992. Comparison of insect, fungal, and mechanically induced defoliation of larch: Effects on plant productivity and host suitability and availability. Oecologia. 90: 411-416.
45. Raffa, K.F., D.J. Hall, W. Kearby, & S. Katovich. 1992. Seasonal life history of Introduced Basswood Thrips (Thysanoptera: Thripidae) in Wisconsin. Environ. Entomol. 21: 771-779.
46. Hunt, D.W.A., G. Lintereur, & K.F. Raffa. 1992. Rearing methods for Hylobius radicis and Hylobius pales (Coleoptera: Curculionidae). J. Econ. Entomol. 85: 1873-1877.
47. Hoffman, G.D., & K.F. Raffa. 1992. Maturation of the reproductive systems of male pales weevils (Coleoptera: Curculionidae) and their response to females. Annals Entomol. Soc. Amer. 85: 571-577.
48. Reich, P.B., M.B. Walters, S.C. Krause, D.W. Vanderklein, K.F. Raffa, & T. Tabone. 1993. Gas exchange and growth of red pine seedlings and trees one year after defoliation. Trees - Structure and Function. 7: 67-77.
49. Rieske, L.K. & K.F. Raffa. 1993. Potential use of baited pitfall traps in monitoring pine root weevil (*Hylobius pales, H. radicis*, and *Pachylobius picivorus*) populations and infestation levels. J. Econ. Entomol. 86: 475-485.
50. Ramachandran, R., K.F. Raffa, D. Bradley, M. , D. Ellis, & B. McCown. 1993. Activity of an insecticidal protein from *Bacillus thuringiensis* subsp. *thuringiensis* HD-290-I strain to coleopteran and lepidopteran defoliators of poplars. Environ. Entomol. 22: 190-196.
51. Hoffman, G.D., & K.F. Raffa. 1993. *Microctonus pachylobii* (Hymenoptera: Braconidae): a new host record from the pine root collar weevil, and notes on its biology. The Great Lakes Entomol. 26: 55-59.
52. Ramachandran, R., K.F. Raffa, M.J. , D.E. Ellis, & B.H. McCown. 1993. Behavioral and physiological responses of spruce budworm and fall webworm larvae to *Bacillus thuringiensis* Cry 1A(a) toxin. Environ. Entomol. 22: 197-211.
53. Ellis, D.D., D. McCabe, S. McInnis, R.R. Ramachandran, D. Russell, K.M. Wallace, B. Martinell, D. Roberts, K. Raffa, & B. McCown. 1993. Stable transformation of *Picea glauca* by particle acceleration--A model system for conifer transformation. Bio/Technology. 11: 84-89.

54. Rieske, L.K., & K.F. Raffa. 1993. Use of ethanol and turpentine baited flight traps to monitor *Pissodes* weevils (Coleoptera: Curculionidae) activity in Christmas tree plantations. The Great Lakes Entomol. 26: 150-160.
55. Hunt, D.W.A., G. Lintereur, S. Salom, & K.F. Raffa. 1993. Performance and preference of *Hylobius radicis* Buchanan, and *H. pales* (Herbst) (Coleoptera:Curculionidae) on various *Pinus* species. Can. Entomol. 125: 1003-1010.
56. Robison, D.J., B.H. McCown, & K.F. Raffa. 1994. Responses of gypsy moth (Lepidoptera: Lymantriidae) and forest tent caterpillar (Lepidoptera: Lasiocampidae) to transgenic poplar, *Populus* spp, containing a *Bacillus thuringiensis* d-endotoxin gene. Environ. Entomol. 23: 1030-1041.
57. Robison, D.J., & K.F. Raffa. 1994. Characterization of hybrid poplar clones for resistance to the forest tent caterpillar. Forest Science. 40: 686-714.
58. Raffa, K.F. & E.B. Smalley. 1995. Interaction of pre-attack and induced monoterpene concentrations in conifer defense against bark beetle-microbial complexes. Oecologia. 102: 285-295.
59. Raffa, K.F. & D.L. Dahlsten. 1995. Differential responses among natural enemies and prey to bark beetle pheromones. Oecologia. 102: 17-23.
60. Krause, S.C., & K.F. Raffa. 1995. Defoliation intensity and larval age interact to affect sawfly performance on previously injured *Pinus resinosa*. Oecologia. 104: 24-30.
61. Codella, S.G., & K.F. Raffa. 1995. Host plant influence on chemical defense in conifer sawflies (Hymenoptera: Diprionidae). Oecologia 104:1-11.
62. Codella, S.G., & K.F. Raffa. 1995. Contributions of female oviposition patterns and larval behavior to group defense in conifer sawflies (Hymenoptera: Diprionidae). Oecologia 103: 24-33.
63. Klepzig, K.D., E.L. Kruger, E.B. Smalley, & K.F. Raffa. 1995. Effects of biotic and abiotic stress on the induced accumulation of terpenes and phenolics in red pines inoculated with a bark beetle vectored fungus. J. Chem. Ecol. 21: 601-626.
64. Rieske, L.K., & K.F. Raffa. 1995. Ethylene emission by a deciduous tree, *Tilia americana*, in response to feeding by the introduced basswood thrips, *Thrips calcaratus*. J. Chem. Ecol. 21: 187-197.
65. Klepzig, K.D., K.F. Raffa, & E.B. Smalley. 1995. *Dendroctonus valens* and *Hylastes porculus* (Coleoptera: Scolytidae) vectors of pathogenic fungi (Ophiostomatales) associated with Red Pine Decline Disease. The Great Lakes Entomol. 28: 81-87.
66. Kleiner, K.W., D.D. Ellis, B.H. McCown, & K.F. Raffa. 1995. Field evaluation of transgenic poplar expressing *Bacillus thuringiensis* d-endotoxin gene against forest tent caterpillar (Lepidoptera:Lasiocampidae) and gypsy moth (Lepidoptera: Lymantriidae). Environ. Entomol. 24: 1358-1364.
67. Krause, S.L., & K.F. Raffa. 1996. Defoliation tolerance affects the spatial and temporal distributions of larch sawfly and natural enemy populations. Ecol. Entomol. 21: 101-111.
68. Klepzig, K.D., Smalley, E.B., & K.F. Raffa. 1996. Combined chemical defenses against insects and fungi associated with a forest decline disease. J. Chem. Ecol. 22: 1367-1388.
69. Krause, S.C. & K.F. Raffa. 1996. Differential growth and recovery rates from defoliation in deciduous and evergreen conifers. Trees: Their Structure and Function. 10: 308-316.
70. Rieske, L.K. & K.F. Raffa. 1996. Bionomics and host range of the introduced basswood thrips, *Thrips calcaratus* Uzel, in Wisconsin. Annals Entomol. Soc. Amer. 89: 75-80.
71. Codella, S.G., & K.F. Raffa. 1996. Individual and social components of wood ant response to conifer sawfly defense behavior (Hymenoptera: Formicidae, Diprionidae). Anim. Behav. 52: 801-811.
72. Klepzig, K.D., E.B. Smalley, & K.F. Raffa. 1996. Interactions of ecologically similar saprogenic fungi and abiotically stressed conifers. Forest Ecol. & Management. 86: 163-169.

73. Hoffman, G.D., D.W.A. Hunt, S.M. Salom, & K.F. Raffa. 1997. Reproductive readiness and niche differences affect conifer root weevil responses to simulated host odors. Environ. Entomol. 26: 91-100.
74. Robison, D.J. & K.F. Raffa. 1997. Effects of constitutive and inducible traits of hybrid poplars on forest tent caterpillar feeding and population ecology. Forest Science 43: 252-267.
75. Hofstetter, R.W., & K.F. Raffa. 1997. New host record for *Ooencyrtus kuvanae* (Hymenoptera: Encyrtidae). Entomol. News. 108: 63-65.
76. Miller, D.R., K.E. Gibson, K.F. Raffa, S.J. Seybold, S.A. Teale & D.L. Wood. 1997. Geographic variation in the response of the pine engraver, *Ips pini* (Say) (Coleoptera: Scolytidae) and associated species to the pheromone, lanierone. J. Chem. Ecol. 23: 2013-2031.
77. Kruse, J.J., & K.F. Raffa. 1997. Effects of hybrid poplar (Salicaceae) clone and phenology on gypsy moth (Lepidoptera: Lymantriidae) performance in Wisconsin. Great Lakes Entomol. 29: 121-127.
78. Kruse, J.J. & K.F. Raffa. 1997. Effects of selected midwestern larval host plants on performance by two strains of the gypsy moth parasitoid *Cotesia melanoscela* (Hymenoptera: Braconidae). Environ. Entomol. 26: 1155-1166.
79. Hofstetter, R.W., & K.F. Raffa. 1997. Effects of host diet on the orientation, development, and subsequent generations of the gypsy moth egg parasitoid, *Ooencyrtus kuvanae* (Hymenoptera: Encyrtidae). Environ. Entomol. 26:1276-1282.
80. Robison, D.J., L.P. Abrahamson, K.F. Raffa, & E.H. White. 1998. Spruce budworm (Lepidoptera: Tortricidae) field fecundity: New insights into its estimation and use. Forest Ecol. & Management 106: 73-81.
81. Robison, D.J. & K.F. Raffa. 1998. Productivity, drought tolerance, and pest status of hybrid *Populus*: Tree improvement and silvicultural implications. Biomass and Bioenergy 14: 1-20.
82. Raffa, K.F., Krause, S.C., & P. Reich. 1998. Long-term influence of defoliation on *Pinus resinosa* suitability to insect herbivores feeding on diverse plant parts. Ecology 79: 352-364.
83. Klepzig, K.D., D.J. Robison, E.B. Smalley & K.F. Raffa. 1997. Effects of feeding by two folivorous arthropods on susceptibility of hybrid poplar clones to a foliar pathogen. Great Lakes Entomol. 30: 99-104.
84. Hofstetter, R.W., & K.F. Raffa. 1998. Endogenous and exogenous factors affecting the orientation and development of the gypsy moth egg parasite, *Ooencyrtus kuvanae*. Entomol. Exper. et Applic. 88: 123-135.
85. Rieske, L.K., & K.F. Raffa. 1998. Interactions among insect herbivore guilds: Influence of thrips-induced bud injury on phytochemistry and subsequent foliar suitability to gypsy moths. J. Chem. Ecol. 24: 501-524.
86. Chenot, A. & K.F. Raffa. 1998. Effects of parasitoid strain and host instar on the interaction of *Bacillus thuringiensis* subsp. *kurstaki* with the gypsy moth larval parasitoid *Cotesia melanoscela* (Hymenoptera: Braconidae). Environ. Entomol. 27: 137-147.
87. Chenot, A., & K.F. Raffa. 1998. Heritability estimates of development time and size characters in the gypsy moth (Lepidoptera: Lymantriidae) parasitoid *Cotesia melanoscela* (Hymenoptera: Braconidae). Environ. Entomol. 27: 415-418.
88. Wallin, K.F., & K.F. Raffa. 1998. Association of within-tree and within-needle variation of water, nutrient and monoterpene concentrations with canopy level and jack pine budworm feeding patterns. Can. J. For. Res. 28: 228-233.
89. Kruse, J.J., & K.F. Raffa 1999. Switching among food plants by a larval host affects parasitoid performance: *Cotesia melanoscela* development in *Lymantria dispar* exposed to reciprocal dietary crosses. Ecol. Entomol. 24: 37-45.
90. Kleiner, K.W., D.D. Ellis, B.H. McCown and K.F. Raffa. 1998. Effect of nitrogen availability on the growth and phytochemistry of hybrid poplar and the efficacy of the *Bacillus thuringiensis* cry1A(a) d-endotoxin on gypsy moth. Can. J. For. Res. 28: 1055-1067.

91. Rieske, L.K., & K.F. Raffa. 1999 Baited pitfall traps and evaluation of dispensing methods, for root weevils in newly established pine plantations in Wisconsin. J. Econ. Entomol. 92: 439-444.
92. Kleiner, K.W., Raffa, K.F., & R.E. Dickson, 1999. Partitioning of 14C labeled photosynthate to allelochemicals and primary metabolites in source and sink leaves of aspen: Evidence for phenolic turnover. Oecologia 119: 408-418.
93. Powell, J.S., & K.F. Raffa. 1999. Effects of selected *Larix laricina* terpenoids on *Lymantria dispar* (Lepidoptera: Lymantriidae) development and behavior. Environ. Entomol. 28: 148-154.
94. Wallin, K.F., and K.F. Raffa 1999. Altered constitutive and inducible phloem monoterpenes following natural defoliation of jack pine: Implications to host mediated inter-guild interactions and plant defense theories. J. Chem. Ecol. 25: 861-880.
95. Powell, J.S., & K.F. Raffa. 1999. Sources of variation in the concentration and composition of foliar monoterpenes in tamarack (*Larix laricina*) seedlings: The roles of nutrient availability, time of season, and plant architecture. J. Chem Ecol. 25: 1771-1797.
96. Broderick, N.A., Goodman, R.M., Raffa, K.F. & J. Handelsman. 2000. Synergy between zwittermicin A and *Bacillus thuringiensis* subsp. *kurstaki* against gypsy moth (Lepidoptera: Lymantriidae). Environ. Entomol. 29: 101-107.
97. Havill, N.P., & K.F. Raffa. 1999. Effects of eliciting treatment and genotypic variation on induced resistance in *Populus*: Impacts on gypsy moth development and feeding behavior. Oecologia. 120: 295-303.
98. Havill, N.P., & K.F. Raffa. 2000. Compound effects of induced plant responses on insect herbivores and parasitoids: Implications for tritrophic interactions. Ecol. Entomol. 25: 171-179.
99. Aukema, B. H., D.L. Dahlsten, & K. F. Raffa. 2000. Exploiting behavioral disparities among predators and prey to selectively target pests: Maximizing bark beetle: predator removal during semiochemically based trap-out. Environ. Entomol. 29: 651-660.
100. Erbilgin, N, & K.F. Raffa. 2000. Effects of host tree species on attractiveness of tunneling pine engravers, *Ips pini* (Coleoptera: Scolytidae), to conspecifics and insect predators. J. Chem. Ecol. 26: 823-840.
101. Wallin, K.F., & K.F. Raffa. 2000. Influences of external chemical cues and internal physiological parameters on the multiple steps of post-landing host selection behavior of *Ips pini* (Coleoptera: Scolytidae). Environ. Entomol. 29: 442-453.
102. Aukema, B.H., D.L. Dahlsten & K.F. Raffa. 2000. Improved population monitoring of bark beetles and predators by incorporating disparate behavioral responses to semiochemicals. Environ. Entomol. 29: 618-629.
103. Werner, S.M., & K.F. Raffa. 2000. Effects of forest management practices on the diversity of Ground-occurring beetles in mixed northern hardwood forests of the Great Lakes Region. For. Ecol. & Manag. 139: 135-155.
104. Aukema, B.H., & K.F. Raffa. 2000. Chemically mediated predator free space: herbivores can synergize intraspecific communication without increasing risk of predation. J. Chem. Ecol. 26: 1923-1939.
105. Erbilgin, N. & K.F. Raffa. 2000. Opposing effects of host monoterpenes on responses by two sympatric species of bark beetles to their aggregation pheromones. J. Chem. Ecol. 26: 2527-2548.
106. Erbilgin, N. & K.F. Raffa. 2001. Kairomonal range of generalist predators in specialized habitats. Entomol. Exper. et Applic. 99: 205-210.
107. Redmer, J. S., K. F. Wallin, & K. F. Raffa. 2001. Effect of host tree seasonal phenology on substrate suitability for the pine engraver, *Ips pini* (Coleoptera: Scolytidae) Implications to population dynamics and enemy free space J. Econ. Entomol. 94: 844-849.

108. Erbilgin N. & Raffa K.F. 2001. Modulation of predator attraction to pheromones of two prey species by stereochemistry of plant volatiles. Oecologia. 127: 444 - 453.
109. Wallin, K.F., & K.F. Raffa. 2001. Effects of folivory on subcortical plant defenses: Can defense theories predict interguild processes? Ecology 82: 1387-1400.
110. Raffa, K.F. 2001. Mixed messages across multiple trophic levels: The ecology of bark beetle chemical communication systems. Chemoecology 11: 49-65.
111. Erbilgin, N., A. Szele, K.D. Klepzig, & K.F. Raffa. 2001. Trap type, chirality of alpha-pinene, and geographic region affect sampling efficiency of root and lower stem insects in pine. J. Econ. Entomol. 94:1113-1121.
112. Codella, S.G., Jr. & K.F. Raffa. 2002. Desiccation of Pinus foliage induced by conifer sawfly (Hymenoptera: Diprionidae) oviposition: Effect of egg viability. Ecol. Entomol. 27: 618-621.
113. Erbilgin, N., & K.F. Raffa. 2002. Association of declining red pine stands with reduced populations of bark beetle predators, seasonal increases in root colonizing insects, and incidence of root pathogens. For. Ecol. & Manag. 164: 221-236.
114. Seybold, S.J., Bohlmann, J., & K.F. Raffa. 2000. Biosynthesis of coniferophagous bark beetle pheromones and conifer isoprenoids: an evolutionary perspective and synthesis. Can. Entomol. 132: 697-753.
115. Wallin, K.F. & K.F. Raffa. 2002. Density-mediated responses of bark beetles to host allelochemicals: A link between individual behavior and population dynamics. Ecol. Entomol. 27:484-492.
116. Wallin, K.F. & K.F. Raffa. 2002. Prior encounters modulate subsequent choices in host acceptance behavior by bark beetles. Entomol. Exper. et. Applic. 103: 205-218.
117. Haberkern, K.E., Illman, B.L. & K.F. Raffa 2002. Bark beetles and fungal associates colonizing white spruce in the Great Lakes region. Can. J. For. Res. 32: 1137-1150.
118. Erbilgin, N., E. V. Nordheim, B. H. Aukema, & K. F. Raffa. 2002. Population dynamics of *Ips pini* and *Ips grandicollis* in red pine plantations in Wisconsin: Within- and between- year associations with predators, competitors, and habitat quality. Environ. Entomol. 31: 1043-1051.
119. Aukema, B.H., & K. F. Raffa. 2002. Relative effects of exophytic predation, endophytic predation and intraspecific competition on a subcortical herbivore: Consequences to the reproduction of *Ips pini* and *Thanasimus dubius*. Oecologia. 133: 483-491.
120. Havill, N.P., & K.F. Raffa. 2002. Effects of gypsy moth (Lepidoptera: Lymantriidae) laboratory strain and crowding on emergence of the parasitoid *Cotesia melanoscela (*Hymenoptera: Braconidae). Entomol. News. 113: 197-202.
121. Wallin, K.F., J. Rutledge, & K.F. Raffa. 2002. Heritability of host acceptance and gallery construction behaviors of the bark beetle *Ips pini* (Coleoptera: Scolytidae). Environ. Entomol. 31: 1276-1281.
122. Werner, S.M. & K. F. Raffa. 2002. Seasonal activity of adult, ground-occurring beetles (Coleoptera) in forests of northeastern Wisconsin and the Upper Peninsula of Michigan. Amer. Mid. Naturalist. 149: 96-108.
123. Broderick, N. A., Goodman, R. M., Handelsman, J., & K. F. Raffa 2003. Effect of host diet and insect source on synergy of gypsy moth (Lepidoptera: Lymantriidae) mortality to *Bacillus thuringiensis* subsp. *kurstaki* by Zwittermicin A. Environ. Entomol. 32: 387-391.
124. Erbilgin, N. & K. F. Raffa. 2003. Spatial analysis of forest gaps resulting from bark beetle colonization of red pines experiencing belowground herbivory and infection. For. Ecol. & Manag. 177: 145-153.
125. Raffa, K.F., Havill, N. P. & E.V. Nordheim. 2002. How many choices can your test animal compare effectively? Evaluating a critical assumption of behavioral preference tests. Oecologia. 133: 422-429.
126. Rieske, L.K., & K.F. Raffa. 2003. Evaluation of visual and olfactory cues for sampling three thrips species (Thysanoptera: Thripidae) in northern deciduous forests. J. Econ. Entomol. 96:777-782.

127. Erbilgin, N., J.S. Powell, & K.F. Raffa. 2003. Effect of varying monoterpene concentrations on the response of *Ips pini* (Coleoptera: Scolytidae) to its aggregation pheromone: Implications to the pest management and ecology of bark beetles. J Ag. & For. Entomol 5: 269-274.
128. Powell, J.S. & K. F. Raffa. 2003. Fate of conifer terpenes in a polyphagous folivore: Evidence for metabolism by gypsy moth (Lepidoptera: Lymantriidae). J. Entomol. Sci. 38: 583-601.
129. Raffa, K.F. & J.S Powell. 2005. Tolerance of plant monoterpenes and diterpene acids in four species of Lymantriidae (Lepidoptera) exhibiting a range of feeding specificities. Great Lakes Entomol. 37: 117-129.
130. Haberkern, K. E. & K. F. Raffa. 2003. Phloeophagous and predaceous insects responding to synthetic pheromones of bark beetles inhabiting white spruce stands in the Great Lakes Region. J. Chem. Ecol. 29: 1651-1663.
131. Miller, D.R., K.F. Raffa, M.J. Dalusky, & C.W. Berisford. 2003. North-south variation in the response of the pine engraver, *Ips pini*, to lanierone in eastern North America. J. Entomol. Sci. 38: 468-476.
132. Kopper, B.J., K.D. Klepzig, & K.F. Raffa. 2003. Effectiveness of modified White's solution at removing Ascomycete fungi associated with bark beetles (Coleoptera: Scolytidae). For. Pathol. 33: 237-240.
133. Aukema, B.H., & K. F. Raffa. 2004. Gender- and sequence- dependent predation within group colonizers of defended plants: a constraint on cheating among bark beetles? Oecologia.138: 253-258.
134. Dahlsten, D. L., Six, D. L., Rowney, D. L., Lawson, A. B., Erbilgin, N., & K. F. Raffa. 2003. Attraction of *Ips pini* (Coleoptera: Scolytidae) and its predators to natural attractants and synthetic semiochemicals: Implications for population monitoring in northern California. Environ. Entomol. 32: 1115-1122.
135. Wallin, K.F., & K.F. Raffa. 2004. Feedback between individual host selection behavior and population dynamics in an eruptive insect herbivore. Ecol. Monogr. 74: 101-116.
136. Dahlsten, D. L., Six, D. L,. Erbilgin, N., Raffa K. F., Lawson, A. B., & D. L. Rowney. 2004. Attraction of *Ips pini* (Coleoptera: Scolytidae) and its predators to various enantiomeric ratios of ipsdienol and lanierone in California: Implications for the augmentation and conservation of natural enemies. Environ. Entomol. 33: 1554-1561.
137. Kleiner, K.K. Ellis, D.D., McCown, B.H. and K.F. Raffa. 2003. Leaf ontogeny influences leaf phenolics and the efficacy of the genetically expressed *Bacillus thuringiensis* cry1A(a) d-endotoxin in hybrid poplar against gypsy moth (Lepidoptera:Lymantriidae). J. Chem. Ecol. 29: 2585-2602.
138. Aukema, B.H., & K. F. Raffa. 2004. Behavior of adult and larval *Platysoma cylindrica* (Coleoptera: Histeridae) and larval *Medetera bistriata* (Diptera: Dolichopodidae) during subcortical predation of *Ips pini* (Coleoptera: Scolytidae). J. Insect Behav. 17: 115-128.
139. Broderick, N. A., K. F. Raffa, R. M. Goodman & J. Handelsman. 2004. Census of the bacterial community of the gypsy moth larval midgut using culturing and culture-independent methods. Appl. & Environ. Microbiol. 2004 70: 293-300.
140. Kopper, B. J. , K. D. Klepzig & K. F. Raffa 2004. Components of antagonism and mutualism in *Ips pini* - fungal interactions: Relationship to a life history of colonizing highly stressed and dead trees. Environ. Entomol. 33:28-34.
141. Aukema, B.H., Clayton, M, K. & K. F. Raffa 2004. Density-dependent effects of multiple predators sharing a common prey in an endophytic habitat. Oecologia. 139: 418-426.
142. Aukema, B.H., Richards, G.R., Krauth S.J. & K. F. Raffa. 2004. Species assemblage arriving at and emerging from trees colonized by *Ips pini* in the Great Lakes region: Partitioning by time since colonization, seasonal, and host species. Ann Entomol. Soc. Amer. 97: 117-129.
143. Aukema, B.H., & K. F. Raffa. 2004. Does aggregation benefit bark beetles by diluting predation? Links between a group-colonization strategy and the absence of emergent multiple predator effects. Ecol. Entomol. 29:129-138.

144. Aukema, B.H., & K. F. Raffa. 2005. Selective manipulation of predators using pheromones: Responses to frontalin and ipsdienol pheromone components of bark beetles in the Great Lakes region.. Agr. & For. Entomol. 7: 193-200.
145. Latty E. F., Werner, S. M. Mladenoff, D. J., Raffa, K. F., & T. A. Sickley. 2006. Response of ground beetle (Carabidae) assemblages to logging history in northern hardwood-hemlock forests. For. Ecol. & Manag. 222: 335-347
146. Liebhold, A.M., K.F. Raffa, & A.L. Diss. 2005. Forest type affects predation on gypsy moth pupae in Wisconsin. Agr. & For. Entomol. 7: 179-185.
147. Pinski, R.A., W.J. Mattson & K.F. Raffa. 2005. Host range and ovipositional behavior of adult *Polydrusus sericeus* and *Phyllobius oblongus* (Coleoptera: Curculionidae), nonindigenous inhabitants of northern hardwood forests. Environ. Entomol. 34: 148-157.
148. Pinski, R.A., W.J. Mattson & K.F. Raffa. 2005. Composition, seasonal phenologies, and distribution of an invasive root-feeding weevil (Coleoptera: Curculionidae) complex in northern hardwood forests. Environ. Entomol. 34: 298-307.
149. Aukema, B.H., Clayton, M, K. & K. F. Raffa 2005. Modeling flight activity and population dynamics of the pine engraver, *Ips pini*, in the Great Lakes Region: Effects of weather and predators over short time scales. Pop. Ecol. 47: 61-69.
150. Werner, S.M. & K. F. Raffa.. 2004. Comparison of methods for sampling Thysanoptera on basswood (*Tilia americana*, L.) trees in mixed northern hardwood deciduous forests. For. Ecol. & Manag. 201: 327-334.
151. Aukema, B.H., Werner, RA, Haberkern K.E, Illman, BL Clayton, M, K. & K. F. Raffa. 2005. Quantifying sources of variation in the frequency of fungi associated with spruce beetles: Implications for sampling methodology and hypothesis testing in bark beetle-symbiont relationships. For. Ecol. & Manag. 217: 187-202.
152. Delalibera, I. Jr, J. Handelsman, & K. F. Raffa. 2005. Cellulolytic Activity of microorganisms isolated from the guts of *Saperda vestita* (Coleoptera: Cerambycidae), *Ips pini,* and *Dendroctonus frontalis* (Coleoptera: Scolytidae). Environ. Entomol. 34; 541-547.
153. Werner, S.M., E.V. Nordheim, & K. F. Raffa. 2005. Impacts of the Introduced Basswood Thrips (*Thrips calcaratus* Uzel) on Forest Health in the Great Lakes Region. For. Ecol. & Manag. 214: 183-200.
154. Werner, S.M., M. Albers, T. Cryderman, D. Divini, R. Heyd, B Hrasovic, S Kobro, S Larsson, R. Mech, P. Niemela, M. Rousi, K Scanlon, S Weber & K. F. Raffa. 2005. Is the outbreak status of *Thrips calcaratus* Uzel in North America due to altered host relationships? For. Ecol. & Manag. 225: 200-206.
155. Kopper BJ. Illman BL. Kersten PJ. Klepzig KD. & KF Raffa. 2005. Effects of diterpene acids on components of a conifer bark beetle-fungal interaction: Tolerance by *Ips pini* and sensitivity by its associate *Ophiostoma ips.* Environ. Entomol. 34:486-493.
156. Aukema, B. H., A. L. Carroll, J. Zhu, K. F. Raffa, T. A. Sickley, & S. W. Taylor. 2006. Landscape level analysis of mountain pine beetle in British Columbia, Canada: Spatiotemporal development and spatial synchrony within the present outbreak. Ecography. 29: 427-441.
157. Maroja, L. S., S. M. Bogdanowicz, K. F. Wallin, K. F. Raffa & R. G. Harrison. 2007. Phylogeography of spruce beetles (*Dendroctonus rufipennis* Kirby) (Curculionidae:Scolytinae) in North America: distinctive mtDNA lineages associated with different species of host trees. Molecular Ecol. 16: 2560-2573.
158. Kersten, P. J., Kopper, B. J. , Raffa, K. F. & B. L. & Illman. 2006. High Performance Liquid Chromatography of Abietanes: Application to diterpene resin acid analysis in conifers. J. Chem. Ecol. 32: 2679-2685.
159. Schloss, P. D., I. Delalibera Jr, J. Handelsman, and K. F. Raffa. 2006. Bacteria associated with the guts of two wood-boring beetles: *Anoplophora glabripennis* and *Saperda vestita* (Cerambycidae). Environ. Entomol. 35: 625-629.

160. Vasanthakumar, A, I. Delalibera Jr., J. Handelsman, K. D Klepzig P. Schloss & K. F Raffa. 2006. Characterization of gut-associated microorganisms in larvae and adults of the southern pine beetle, *Dendroctonus frontalis* Zimmerman. Environ. Entomol. 35: 1710-1717.
161. Erbilgin, N, S. Mori, J.H. Sun, J.D. Stein, D.R. Owen, L.D. Merrill, K.F. Raffa, T. M. Montiel, D.L. Wood & N.E. Gillette. 2007. Response to host volatiles by native and introduced populations of *Dendroctonus valens* (Coleoptera: Curculionidae, Scolytinae) in North America and China. J. Chem. Ecol. 33: 131-146.
162. Cardoza, Y. J., K. D. Klepzig & K. F. Raffa. 2006. Bacteria in oral secretions of an endophytic insect inhibit antagonistic fungi. Ecol. Entomol. 31: 636-645.
163. Kendrick, A. P., & K. F. Raffa. 2006. Sources of insect and plant volatiles attractive to cottonwood leaf beetles feeding on hybrid poplar. J. Chem. Ecol. 32: 2585-2594.
164. Kendrick, A P., Krauth, S.J. Woodley, N.E., & K.F. Raffa. 2006. Notes on incidence and biology of the parasitoid complex of the cottonwood leaf beetle in Minnesota. Great Lakes Entomol. 38: 203-208.
165. Zhu, J., J. G. Rasmussen, J. Moller, B. H.Aukema & K.F. Raffa. 2008. Spatial-temporal modeling of forest gaps generated by colonization from below- and above- ground bark beetle species. J. American Statistical Association A&CS. 103: 162-177.
166. Salle, A, & K.F. Raffa. 2007. Interactions among intraspecific competition, emergence patterns, and host selection behaviour in *Ips pini* (Col. Scolytinae). Ecol. Entomol. 32: 162-171.
167. Cardoza, Y. J., S. Paskewitz & K. F. Raffa. 2006. Traveling through time and space on wings of beetles: A tripartite insect-fungi-nematode association. Symbiosis 41: 71-79.
168. Guan C., Ju. J., Borlee B., Williamson, L., Shen B., Raffa K., & J. Handelsman. 2007. Signal mimics derived from a metagenomic analysis of gypsy moth gut microbiota. Appl. & Environ. Microbiol. 73: 3669-3676.
169. Broderick, N.A., K. F. Raffa, K.F. & J. Handelsman. 2006. Midgut bacteria required for *Bacillus thuringiensis* insecticidal activity. PNAS. 103: 15196-15199.
170. Rasmussen, J. G., J. Moller, B. H. Aukema, K.F. Raffa, & J. Zhu. 2007. Bayesian inference for multivariate point processes observed at sparsely distributed times. Royal Statistical Society series B. 69: 701-713.
171. Raffa, K.F., Hobson, K.R., LaFontaine, S. & B. H. Aukema. 2007. Can chemical communication be cryptic? Adaptations by herbivores to natural enemies exploiting prey semiochemistry. Oecologia. 153: 1009-1019.
172. Delalibera I., Jr., Vasanthakumar, A., Burwitz, BJ, Schloss, PD, Klepzig, KD, Handelsman J & K.F. Raffa, 2007. Composition of the bacterial community in the gut of the pine engraver beetle, *Ips pini* (Say) (Coleoptera: Curculionidae: Scolytinae). Symbiosis. 47: 93-104.
173. Boone, C. K., D.L. Six, Y. Zheng,& K.F. Raffa. 2008. Exploitation of microbial symbionts of bark beetles by parasitoids and dipteran predators. Environ. Entomol. 37: 150-161.
174. Aukema, B.H, Carroll, A.L., Zheng Y., Zhu, J., Raffa, K.F., Moore, R.D., Stahl, K., & S.W. Taylor. 2008. Movement of outbreak populations of mountain pine beetle: Influences of spatiotemporal patterns and climate. Ecography. 31: 348-358.
175. Gray, R.H., C. G. Lorimer,P.C. Tobin & K.F. Raffa. 2008. Pre-outbreak dynamics of a recently established invasive herbivore: Roles of natural enemies and habitat structure in stage-specific performance of gypsy moth (Lepidoptera: Lymantriidae) populations in northeastern Wisconsin. Environ. Entomol. 37: 1174-1184.
176. Yanek, M. L., & K. F. Raffa. 2008. Evaluation of Gypchek and its carrier on various Lepidoptera species under laboratory conditions. Great Lakes. Entomol. 41: 27-36.
177. Boone, C. K, Six, D. L. & K. F. Raffa. 2008. The enemy of my enemy is still my enemy: Competitors add to predator load of primary bark beetles. Ag. For. Entomol. 10: 411-421.

178. Vasanthakumar, A, I. J. Handelsman, P. Schloss, L. Bauer & K. F Raffa. 2008. Gut microbiota of an invasive wood boring beetle, the emerald ash borer: community composition and structure across different life stages. Environ. Entomol. 37: 1344-1353.
179. Cardoza, Y. J., K. D. Klepzig, J. C. Moser & K. F. Raffa. 2008. Multipartite symbioses among fungi, mites, nematodes and the spruce beetle, *Dendroctonus rufipennis*. Environ. Entomol. 37:956-963.
180. Raffa, K. F., Aukema, B. H., Bentz, B.J., Carroll A.L., Hicke, J.A., Turner MG, & W. H. Romme. 2008. Cross-scale drivers of natural disturbances prone to anthropogenic amplification: The dynamics of bark beetle eruptions. BioScience 58: 501-517.
181. Kanzaki, N, RM Giblin-Davis, YJ Cardoza, KF Raffa, W Ye, & BJ Center. 2008. *Bursaphelenchus rufipennis n. sp*. (Parasitaphelenchidae) and redescription of *Ektaphelenchus obtusus* (Ektaphelenchidae): Associates from nematangia on the hind wings of *Dendroctonus rufipennis* (Coleoptera: Scolytidae). Nematology 10: 925-955.
182. Boone, C.K, Six, D.L., Krauth, S.J. & K.F. Raffa. 2009. Assemblage of Hymenoptera arriving at logs colonized by Ips *pini* (Say) (Coleoptera: Curculionidae) and its microbial symbionts in western Montana. Can. Entomol. 141:172-199.
183. Cardoza, YJ., A Vasanthakumar, A Suazo & KF Raffa. 2009. Survey and phylogenetic analysis of the culturable microbial fauna in the oral secretions of three bark beetle species. Ent Exper. et Applic. 131:138-147.
184. Broderick, N.A., Robinson, C.J., McMahon, M.D., Holt, J., Handelsman, J., & K.F. Raffa. 2009. Contributions of gut bacteria to *Bacillus thuringiensis* - induced mortality vary across a range of Lepidoptera. BMC Biology. 7-11: 9pp.
185. Adams, A., Cardoza, Y., Currie, C., Klepzig, K.D. & K.F. Raffa. 2009. Effects of symbiotic bacteria and tree chemistry on the growth and reproduction of bark beetle fungal symbionts. Can. J. For. Res. 39: 1133-1147.
186. Klepzig, K.D., Adams, A.S., Handelsman, J., & K.F. Raffa. 2009. Symbioses: A key driver of insect physiological processes, ecological interactions, evolutionary diversification and impacts on humans. Environ. Entomol. 38: 67-77.
187. Allen, H.K., K.A. Cloud-Hansen, J. M. Wolinski, C. Guan, S. Greene, S. Lu, M. Boeyink, N. Broderick, K. F. Raffa, & J. Handelsman. 2009. Resident microbiota of the gypsy moth midgut harbors antibiotic resistance determinants. DNA and Cell Biology. 28: 109-117.
188. Robinson, CJ., P. Schloss, Y. Ramos, K. Raffa & J. Handelsman. 2010. Robustness of the bacterial community in the cabbage white butterfly larval midgut. Microbial Ecology 59: 199-211.
189. McMahon, M.D., K. F. Raffa, Nordheim E. V. & B.H. Aukema. 2010. Too close for comfort: Effect of spacing distance and pattern on statistical inference of behavioral choice tests in the field. Ent. Exper. et Applic.136: 66-71.
190. Aukema, B.H., J. Zhu, J. Moeller, J. Rasmussen & K.F. Raffa. 2010. Interactions between below- and above- ground herbivores drive a forest decline and gap-forming syndrome. For. Ecol. & Management. 259: 374-382.
191. Adams, A.S., Adams, S.M., C.R. Currie, N.E. Gillette & K.F. Raffa. 2010. Geographic variation in bacterial communities associated with the red turpentine beetle (Coleoptera: Curculionidae). Environ Entomol. 39: 406-414.
192. Broderick N. A., K. F. Raffa & J. Handelsman. 2010. Chemical modulators of the innate immune response alter gypsy moth larval susceptibility to *Bacillus thuringiensis*. BMC Biology. 10: 129; 13 pp.
193. Hillstrom, M., L. Vigue, D. Coyle, K. F. Raffa & R. Lindroth. 2010. Performance of an invasive weevil, *Polydrusus sericeus* Schaller (Coleoptera: Curculionidae), is influenced by atmospheric CO2 and host species, Ag. & For. Entomol. 12: 285-292.
194. Aukema B.H., J.S. Powell, M.K. Clayton & K.F. Raffa. 2010. Variation in complex semiochemical signals arising from insects and host plants. Environ. Entomol. 39:874-882.

195. Contarini, M, KS. Onufrieva, KW. Thorpe, KF Raffa & PC Tobin. 2009. Mate-finding failure as an important cause of Allee effects along the leading edge of an invading insect population. Entomol. Exper. Applic. 133:307-314.
196. Coyle, D R, WJ Mattson, & K. F. Raffa. 2010. Laboratory performance of polyphagous invasive weevils on the predominant woody plant species of a northern hardwood community. Environ. Entomol. 39: 1242-1248.
197. Broderick, NA, E Vasquez, J Handelsman & KF Raffa. 2010. Effect of clonal variation among hybrid poplars on susceptibility of gypsy moth (Lepidoptera: Lymantriidae) to *Bacillus thuringiensis* subsp. *kurstakii* J. Econ. Entomol. 103: 718-725.
198. Coyle, D.R, M. S. Jordan & K. F. Raffa. 2010. Host plant phenology affects performance of an invasive weevil, *Phyllobius oblongus* L. (Coleoptera: Curculionidae), in a northern hardwood forest ecosystem. Environ. Entomol. 39: 1539-1544.
199. Boone, C., B. Aukema, J. Bohlmann, A. Carroll, & K. F. Raffa. 2011. Efficacy of tree defense physiology varies with herbivore population density. Can. J. For. Res. 41: 1174-1188.
200. McDowell NG, JS Amthor, DJ Beerling, RA Fisher, KF Raffa & M Stitt. 2011. The interdependence of mechanisms underlying vegetation mortality. Trends in Ecol. & Evol. 26: 523-532.
201. Coyle DR, Allred AM, Kosola KR, & KF Raffa. 2011. Altered GAI activity of hybrid aspen has minimal effects on the performance of an invasive weevil, *Polydrusus sericeus* Schaller (Coleoptera: Curculionidae). Entomol. Exper. et Applic. 138: 104-109.
202. Coyle DR, Duman JG, & KF Raffa. 2011. Temporal and species variation in cold hardiness among invasive rhizophagous weevils (Coleoptera: Curculionidae) in a northern hardwood forest. Annals Entomol. Soc. Amer. 104: 59-67.
203. Adams AS, Jordan MS, Adams SM, Suen G, Goodwin LA, Davenport KW, Currie CR, & Raffa KF. 2011. Community and genomic analysis of cellulose-degrading bacteria associated with the invasive woodwasp *Sirex noctilio*. Intern. Soc. Microbial Ecology 5: 1323-1331.
204. Coyle, DR, KE Clark, KF Raffa & SN Johnson. 2011. Prior host feeding experience influences ovipositional but not feeding preference in a polyphagous insect herbivore. Entomol. Exper. et Applic. 138: 137-145.
205. Hulcr, J, A Adams, K Raffa, R Hofstetter, K Klepzig & C Currie. 2011. Presence and diversity of S*treptomyces* in *Dendroctonus* bark beetle galleries across North America. Microb. Ecol. 61: 759-768.
206. Hicke, JA, CD Allen, AR Desai, MC Dietze, RJ Hall, ET Hogg, DM Kashian, D Moore, KF Raffa, RN. Sturrock, J Vogelmann. 2012. Effects of biotic disturbances on forest carbon budgets of the United States and Canada. Global Change Biology. 18:7-34.
207. Simard, M, EN Powell, KF Raffa & MG Turner. 2012. What explains landscape patterns of bark beetle outbreaks in Greater Yellowstone? Global Ecology and Biogeography. 21: 556-557.
208. Raffa RB, & KF Raffa. 2011. High fidelity receptor-mediated transduction mechanisms in insects provides insight for pharmacologic/entomologic interactions and applications. Expert Opinion on Drug Discovery. 6: 1091-1101.
209. Mason, KL, TA Stepien, JE Blum, JF Holt, NH Labbe, JS Rush, KF Raffa & J Handelsman. 2011. From commensal to pathogen: Translocation of *Enterococcus 1 faecalis* from the midgut to the hemocoel of *Manduca sexta*. mBio 2: 1-7.
210. Adams, AS, CK Boone, J Bohlmann & KF Raffa. 2011. Responses of bark beetle-associated bacteria to host monoterpenes, and their relationship to insect life histories. J. Chem. Ecol. 37:808–817.
211. Powell, EN & KF Raffa. 2011. Fire injury reduces inducible defenses of lodgepole pine against mountain pine beetle. J. Chem. Ecol. 37: 1184-1192.
212. Coyle, DR, WJ Mattson, MS Jordan & KF Raffa. 2012. Variable host phenology does not pose a barrier to invasive weevils (Coleoptera: Curculionidae) in a northern hardwood forest. Agric. & For. Entomol. 14: 276-285.

213. Powell, EN, Townsend PA & KF Raffa. 2012. Wildfire provides refuge from local extinction but is an unlikely driver of outbreaks by mountain pine beetle. Ecol. Monogr. 82:69-84.
214. Raffa, RB, N. Eltoukhy & KF Raffa. 2012. Implications of climate change (Global Warming) for the healthcare system. J. Clinical Pharmacy and Therapeutics 37: 502–504.
215. Costa A, A Min, CK Boone, AP Kendrick, R Murphy, W Sharpee, KF Raffa & JD Reeve. 2013. Dispersal and edge behaviour of bark beetles and predators inhabiting red pine plantations. Agric. & For. Entomol. 15: 1–11.
216. Adams AA, F Aylward, SM. Adams, N Erbilgin, B Aukema, C Currie, G Suen & KF Raffa. 2013. Mountain pine beetles colonizing historical and naïve host trees are associated with a bacterial community highly enriched in genes contributing to terpene metabolism. Applied & Environ. Microbiology 79: 3468-3475.
217. Lindgren, BS. & KF Raffa. 2013. Evolution of tree-killing in bark beetles: Trade-offs between the maddening crowds and a sticky situation. Can. Entomol. CP Alexander Review 145: 471-495.
218. Tobin, PC, LM Blackburn, RH Gray, CT Lettau, AM Liebhold, & KF Raffa. 2013. Using delimiting surveys to characterize spatiotemporal dynamics facilitates the management of an invasive non-native insect. Pop. Ecology. 55: 545-555.
219. Jamieson MA, Trowbridge AM, Raffa KF & RL Lindroth. 2012. Consequences of climate change for plant-insect and multitrophic interactions. Plant Physiol, Update. 160: 1719-1727.
220. Raffa KF, Powell EN & PA Townsend. 2013. Temperature-driven range expansion of an irruptive insect heightened by weakly coevolved plant defenses. PNAS 110: 2193-2198.
221. Coyle DR, Murphy MW, Paskewitz SM, Orrock JL, Lee X, Murphy RJ, McGeehin MA, & KF Raffa. 2013. Belowground herbivory initiates a cascade that increases abundance of Lyme disease vectors. Forest Ecology & Management. 302:354-362.
222. Boone CK, Adams AA, Bohlmann, J, Keefover-Ring, K, Mapes AC, & KF Raffa. 2013. Bacteria associated with a tree-killing insect reduce concentrations of plant defense compounds. J. Chem. Ecol. 39: 1003-1006.
223. Pfammatter JA Moser JC & KF Raffa. 2013. Mites phoretic on *Ips pini* (Say) (Coleoptera: Curculionidae: Scolytinae) in Wisconsin red pine stands. Annals Entomol. Soc. Amer. 106: 204-213.
224. Miller DR, KJ Dodds, A Eglitis, CJ Fettig, RW Hofstetter, DW Langor, A Mayfield III, A Munson, TM Poland & KF Raffa. 2013. Trap lure blend of pine volatiles and bark beetle pheromones for *Monochamus* spp. (Coleoptera: Cerambycidae) in pine forests of Canada and the United States. J. Econ. Entomol. 106: 1684-1692.
225. Hanshew AS, Mason CJ, Raffa KF, Currie CR. 2013. Minimization of chloroplast contamination during 16S rRNA gene pyrosequencing of insect herbivore bacterial communities. **J.** Microbiol Methods. 95:149-155.
226. Coyle DR, WJ Mattson Jr., AL Friend & KF Raffa. 2014. Effects of an invasive herbivore at the single plant scale do not extend to population scale seedling dynamics. Can. J. For. Res. 44: 8-16.
227. Raffa, KF. 2014. Terpenes tell different tales at different scales. Glimpses into the chemical ecology of conifer - bark beetle - microbial interactions. J. Chem. Ecol. 40: 1-20.
228. Mason, CJ & KF Raffa. 2014. Acquisition and structuring of larval midgut bacterial communities in the gypsy *moth (Lymantria dispar).* Environmental Entomology. 43: 595‹604.
229. Mason, CJ, JJ Coutre & KF Raffa. 2014. Plant-associated bacteria degrade defense chemicals and reduce their adverse effects on an insect defoliator. Oecologia. 3:901-910.
230. Johnson, TD, JP Lelito & KF Raffa. 2014. Responses of two parasitoids, the exotic *Spathius agrili* Yang and the native *Spathius floridanus* Ashmead, to volatile cues associated with the emerald ash borer, *Agrilus planipennis* Fairmaire. Biol. Control. 79: 110-117.

231. Schwartzberg EG, MA Jamieson, KF Raffa, PB Reich, RA Montgomery & RL Lindroth. 2014, Simulated climate warming alters phenological synchrony between an outbreak insect herbivore and host trees. Oecologia. 175: 1041-1049.
232. Lee X, Coyle DR, Johnson DKH, Murphy MW, McGeehin MA, Murphy RJ, Raffa KF & SM Paskewitz. 2014. Prevalence of *Borrelia burgdorferi* and *Anaplasma phagocytophilum* in *Ixodes scapularis* (Acari: Ixodidae) nymphs collected in managed red pine forests in Wisconsin. J. Medical Entomol. 51: 694-701.
233. Mason, CJ, Z Cannizzo, & KF Raffa. 2014. Influence of diet and density on laboratory cannibalism behaviors in gypsy moth larvae (*Lymantria dispar*).J. Insect Behavior. 27: 693-700.
234. Mason CJ, EL Zeldin, CR Currie, KF Raffa & BH McCown. 2014. Populations of uncultivated American cranberry in sphagnum bog communities harbor novel assemblages of Actinobacteria with antifungal properties Botany. 92: 589-595
235. Thorn, S, C Bässler, T Gottschalk, T Hothorn, H Bussler, K Raffa & J Müller. 2014, New insights into the consequences of post-windthrow salvage logging revealed by functional structure of saproxylic beetles assemblages. PLOS ONE. 9: e101757. 8pp.
236. Book A, Lewin G, McDonald B, Takasuka T, Doering D, Adams S, Blodgett J, Clardy J, Raffa, K, Fox B & Currie C. 2014. Cellulolytic *Streptomyces* strains associated with herbivorous insects share a phylogenetically-linked capacity for the degradation of lignocellulose. Applied & Env. Microbiol. 80:4692-4701.
237. Aylward, FO, G Suen, PHW Biedermann, AS Adams, JJ Scott, SA Malfatti, TG del Rio, SG Tringe, M Poulsen, KF Raffa, KD Klepzig & CR Currie. 2014. Convergence of bacterial microbiota in agriculture in insects. mBio. 5(6) doi:10.1128/mBio.02077-14..
238. Arango RA, Marschalek DA, Green F III, Raffa KF, Berres ME. 2015. Genetic Analysis of termite colonies in Wisconsin. Env. Entomol. 44: 890-897.
239. Mason, CJ, JA. Pfammatter, LM Holeski & KF Raffa 2015. Foliar bacterial community of trembling aspen in a common garden. Can. J. Microbiol. 61: 143-149.
240. Mason CJ, Rubert-Nason, KF, Lindroth RL & KF Raffa. 2015. Aspen defense chemicals influence midgut bacterial community composition of gypsy moth. J. Chem. Ecol. 41: 75-84.
241. Jamieson MA, Schwartzberg EG, Raffa KF, Reich PB, & RL Lindroth. 2015. Experimental warming alters aspen and birch phytochemistry and performance traits for an outbreak insect herbivore. Global Change Biology 21: 2698–2710.
242. Mason CJ, Klepzig KD, Kopper BJ, Kersten PJ, Illman BL & KF Raffa. 2015. Contrasting patterns of diterpene acid induction by red pine and white spruce to simulated bark beetle attack, and interspecific differences in sensitivity among fungal associates. J. Chem. Ecol. 41: 524-532.
243. Therrien J, CJ Mason, A Adams, BH Aukema, CR Currie, KF Raffa & N Erbilgin. 2015. Bacteria influence mountain pine beetle brood development through interactions with symbiotic and opportunistic fungi: implications to climate-driven host range expansion. Oecologia. 179: 467-485.
244. Anderegg, WRL , JA Hicke, RA Fisher, CD Allen, J Aukema, B Bentz, S Hood, JW Lichstein, AK Macalady, N McDowell, Y Pan, KF Raffa, A Sala, JD Shaw, NL Stephenson, C Tague & M Zeppel. 2015. Tree mortality from drought, insects, and their interactions in a changing climate. New Phytol. 208: 674-683.
245. Bentz BJ, Boone, C., & KF Raffa. 2015. Tree response and mountain pine beetle attack preference, reproduction, and emergence timing in mixed whitebark and lodgepole pine stands. Agric. & For. Entomol 17: 421-432.
246. Pfammatter JA, Krause A & KF Raffa. 2015. Evaluating predators and competitors in Wisconsin red pine forests for attraction to mountain pine beetle pheromones for anticipatory biological control. Env. Entomol. 44:1161-1171.

247. Miller DR, Crowe CM, Dodds KJ, Gallagin LD, DeGroot P, Hoebeke ER, Mayfield AE III, Poland TM, Raffa KF & Sweeney JD. 2015. Ipsenol, ipsdienol, and alpha-pinene: Trap lure blend for Cerambycidae and Buprestidae (Coleoptera) in pine forests of Eastern North America. J. Econ. Entomol. 108: 1837-1851.
248. Lerch AP, Pfammatter JA, Bentz BJ, & KF Raffa. 2016. Mountain pine beetle dynamics and reproductive success in post-fire lodgepole and ponderosa pine forests in northeastern Utah. PlosOne. http://dx.doi.org/10.1371/journal.pone.0164738
249. Fahrner, JS Albers, MA Albers, T Lanigan, R Murphy, KF Raffa & BH Aukema. 2016. Oviposition and feeding on red pine by jack pine budworm, a historically monophagous defoliator. Agric. & For. Entomol. 18: 214-222.
250. Pfammatter, JA DR Coyle, KJK Gandhi, N Hernandez, RW Hofstetter, JC Moser & KF Raffa. 2016. Structure of phoretic mite assemblages across subcortical beetle species at a regional scale. Environ. Entomol. 45: 53-65.
251. Buotte PC, JA Hicke, HK Preisler, JT Abatzoglou, KF Raffa & JA Logan. 2016. Historical and future climate influences on mountain pine beetle outbreaks in whitebark pines in the Greater Yellowstone Ecosystem. Ecological Applications. 26: 2505-2522.
252. Uelmen JA Jr., JG Duman, RL Lindroth, EG Schwartzberg & KF Raffa. 2016. Supercooling points of diapausing forest tent caterpillar eggs, Can. Entomol. 148: 512-519.
253. Uelmen JA Jr., RL Lindroth, PC Tobin, PB Reich, EG Schwartzberg, KF Raffa. 2016. Population source, spring temperatures, and overwintering regime interact to structure phenology of insect - plant interactions: implications to changing climate in the southern boreal forest. For. Ecol. & Mngmt. 362: 241-250.
254. Pfammatter JA, & KF Raffa. 2015. Do phoretic mite influences the reproductive success of *Ips grandicollis* (Coleoptera: Curculionidae)? Environ. Entomol. 44: 1498-1511.
255. Pfammatter JA, K. Malas & KF Raffa. 2016. Behaviours of phoretic mites (Acari) during host colonization and development by *Ips pini* and *Ips grandicollis* (Coleoptera: Curculionidae). Agric. & For. Entomol. 18: 108–118.
256. Mason CJ, Lowe TM, Rubert-Nason, KF, Lindroth RL & KF Raffa. 2016. Interactions between bacteria and aspen defense chemicals at the phyllosphere – herbivore interface. J. Chem. Ecol. 42:193–201.
257. Mason CJ, AS Hanshew & KF Raffa. 2016. Contributions by host trees and insect activity to bacterial communities in *Dendroctonus valens* LeConte galleries, and their high overlap with other microbial assemblages of bark beetles. Environ. Entomol. 45: 348-356.
258. Johnson TD, Lelito,JP, Pfammatter JA & Raffa KF. 2016. Evaluation of tree mortality and parasitoid recoveries on the contiguous western invasion edge of emerald ash borer. Agr. & For. Entomol. 18: 327-339.
259. Keefover-Ring K, Trowbridge A, Mason CJ, & Raffa, KF. 2016. Rapid induction of multiple terpenoid groups by Ponderosa Pine in response to bark beetle -associated fungi. J. Chem. Ecol. 42: 1-12.
260. Book AJ, Gina R. Lewin GR, McDonald BR, Takasuka TE, Wendt-Pienkowski E, Doering DT, Suh S, Raffa KF, Fox BG & Currie CR. 2016. Evolution of high cellulolytic activity in *Streptomyces.* PlosOneBiology. 14(6): e1002475. doi:10.1371/journal.pbio.1002475.
261. Arango RA, Carlson, CM, Currie CR, McDonald BR, Book AJ, Green F III, Lebow NK, & Raffa KF. 2016. Antimicrobial activity of Actinobacteria isolated from the guts of subterranean termites. Env. Entomol. 45: 1415-1423.
262. Seidl R, Donato DC, Raffa KF & Turner MG. 2016. Spatial variability in tree regeneration after wildfire delays and dampens future bark beetle outbreaks. PNAS. 113: 13075-13080.
263. Liu Z, Xin Y, Xu B, Raffa KF & Sun J. 2016. Sound-triggered production of anti-aggregation pheromone limits overcrowding of *Dendroctonus valens* attacking pine trees. Chemical Senses. 42: 59-67.

264. Liu Z, Xu B, Guo Y, Raffa KF, & Sun J. 2017. Gallery and acoustic traits related to female body size mediate male mate choice. Animal Behaviour. 125:41-50.
265. Mason, CJ, Villari C, Keefover-Ring K, Jagemann S, Zhu J, Bonello P. & Raffa KF. 2017. Spatial and temporal components of induced plant responses relate to herbivore life history and impact on host. Functional Ecol. 31: 2034-2050
266. Raffa KF, Mason CJ, Bonello P, Cook, S., Erbilgin N, Keefover-Ring K, Klutsch JG, Villari C & Townsend PA. 2017. Defense syndromes in lodgepole - whitebark pine ecosystems relate to degree of historical exposure to mountain pine beetles. Plant, Cell and Environment. 40: 1791-1806.
267. Buotte PC, JA Hicke, HK Preisler, JT Abatzoglou, KF Raffa & JA Logan. 2017. Recent and future climate suitability for whitebark pine mortality from mountain pine beetle varies across the western US. Forest Ecol. & Manag. 399: 132-142.
268. Hu X, Li M, Raffa KF, Luo Q, Fu H, Wu S, Liang G, Wang R & Zhang F. 2017. Bacterial communities associated with the pine wilt disease vector *Monochamus alternatus* during different larval instars. J. Insect Science. 17 (6) doi.org/10.1093/jisesa/iex089.
269. Krause, AM, Townsend PA, Lee Y. & Raffa KF. 2018. Predators and competitors of the mountain pine beetle, *Dendroctonus ponderosae* (Coleoptera: Curculionidae) in stands of changing forest composition associated with elevation. Agric. & For. Entomol. 44: 1161-1171.
270. Howe M, Keefover-Ring K & Raffa KF. 2018. Pine engravers carry bacterial communities whose members reduce concentrations of host monoterpenes with variable degrees of redundancy, specificity, and capability. Environ. Entomol. 47: 638-645.
271. Falk MA, Lindroth RL, Keefover-Ring K & Raffa KF. 2018. Genetic variation in aspen phytochemical patterns structures windows of opportunity for gypsy moth larvae. Oecologia 187: 471-482.
272. Jagemann SM, Juzwik J, Tobin PC, & Raffa KF. 2018. Seasonal and regional distributions, degree-day models, and phoresy rates of the major sap beetle (Coleoptera: Nitidulidae) vectors of the oak wilt fungus, *Bretziella fagacearum*, in Wisconsin. Environ. Entomol. 47: 1152-1164.
273. Mason CJ, Keefover-Ring K, Villari C, Klutsch JG, Cook S., Bonello P, Erbilgin N, Raffa KF & Townsend PA. 2018. Anatomical defenses against bark beetles relate to degree of historical exposure between species and are allocated independently of chemical defenses within trees. Plant Cell and Environ. 31: 2034-2050
274. Showalter DN, Smith JA, Raffa KF, Sniezko RA, Herms DA, Liebhold AM & Bonello P. 2018. Strategic deployment of tree resistance against forest pathogen and insect invasions. Fron. Ecol. & Evol. 6: 10.3389/fevo.2018.00124.
275. Buma B, Harvey B, Gavin D, Kelly R, Loboda T, McNeil B, Marlon J, Meddens A, Morris J, Raffa K, Shuman B, Smithwick E & McLauchlan K. 2019. The value of linking paleoecological and neoecological perspectives to understand spatially-explicit ecosystem resilience. Landscape Ecol. 34: 17-33.
276. Liu Z, Mi G, KF Raffa KF & Sun J. 2019. Physical contact, volatiles, and acoustic signals contribute to monogamy in an invasive aggregating bark beetle. Insect Science. DOI 10.1111/1744-7917.127.
277. Kolb T, Keefover-Ring K, Burr SJ, Hofstetter R, Gaylord M & Raffa K. 2019. Interactions between drought stress and induced defenses determine mortality of ponderosa pine to bark beetles. J Chem Ecol. 45:888-900.
278. Huang J, Kautz M, Trowbridge AM, Hammerbacher A, Raffa KF, Adams HD, Goodsman DW, Xu C, Meddens AJH, Kandasamy D, Gershenzon J, Seidl R & Hartmann H. 2019. Tree defence and bark beetles in a drying world: carbon partitioning, functioning and modeling. New Phytol. doi.org/10.1111/nph.16173.
279. Mech AM, Thomas KA, Marsico TD, Herms DA, Allen CR, Ayres MP, Gandhi KJK, Gurevitch J, Havill NP, Hufbauer RA, Liebhold AM, Raffa KF, Schulz AN, Uden DR & Tobin

PC. 2019. Evolutionary history predicts high-impact invasions by herbivorous insects. Ecology and Evolution. 9: 12216-12230
280. Raffa KF, Bonello P & Orrock JL. 2019. Why do entomologists and plant pathologists approach trophic relationships so differently? Identifying biological distinctions to foster synthesis. New Phytol. doi.org/10.1111/nph.16181.
281. Falk MN, Donaldson JR, Stevens MT, Raffa KF & Lindroth RL. 2019. Phenological responses to prior-season defoliation and soil nutrient availability vary among early- and late-flushing aspen (*Populus tremuloides* Michx) genotypes. For. Ecol. & Mgmt. 458 doi.org/10.1016/j.foreco.2019.117771.
282. Schulz A, Mech A, Allen C, Ayres M, Gandhi KJK, Gurevitch J, Havill N, Herms D, Hufbauer R, Liebhold AM, Raffa K, Raupp MJ, Thomas K, Tobin P & Marsico TD. 2020. The impact is in the details: evaluating a standardized protocol and scale for determining non-native insect impact. NeoBiota 55: 61-83.
283. Howe M, Mason CJ, Gratton C, Keefover-Ring K, Wallin K, Yanchuk A, Zhu J & Raffa KF. 2020. Relationships between conifer constitutive and inducible defenses against bark beetles change across levels of biological and ecological scale. Oikos. 129: 1093-1107.
284. Li Z, Rubert-Nason KF, Jamieson M, Raffa KF & Lindroth RL. 2021. Root secondary metabolites in *Populus tremuloides*: effects of simulated climate warming, defoliation, and genotype. J Chem Ecol. 47:313–321.
285. Schulz AN, AM Mech, MP Ayres, KJK Gandhi, NP Havill, DA Herms, AM Hoover, RA Hufbauer, AM Liebhold, TD Marsico, KF Raffa, PC Tobin, DR Uden & KA Thomas. 2021. Predicting non-native insect impact: focusing on the trees to save the forest. Biol. Invasions. 23: 3921-3936. doi.org/10.1007/s10530-021-02621-5.
286. Hlásny T, König L, Krokene P, Lindner M, Montagné-Huck C, Müller J, Qin H, Raffa KF, Schelhaas M-J, Svoboda M, Viiri H & Seidl R. 2021. Bark beetle outbreaks in Europe: State of knowledge and ways forward for management. Current For. Repts. doi.org/10.1007/s40725-021-00142-x
287. Kichas NE, Trowbridge AM, Raffa KF, Malone SC, Hood SM, McWethy DB & Pederson GT. 2021. Growth and defense characteristics of whitebark pine (*Pinus albicaulis*) and lodgepole pine (*Pinus contorta* var *latifolia*) in a high elevation, disturbance prone mixed-conifer forest in northwestern Montana, USA. For. Ecol. & Mgmt. Vol. 493. 10.1016/j.foreco.2021.119286.
288. Howe M, Carroll A, Gratton C & Raffa KF. 2021. Climate-induced outbreaks in high-elevation pines are driven primarily by immigration of bark beetles from historical hosts. Global Change Biol. 27: 5786-5805
289. Erbilgin N, Zanganeh L, Klutsch JG, Chen S-h, Zhao S, Ishangulyyeva G, Burr SJ, Gaylord M, Hofstetter R, Keefover-Ring K, Raffa KF & Kolb T. 2021. Combined drought and bark beetle attacks deplete non-structural carbohydrates and promote death of mature pine trees. Plant, Cell and Environment 44: 3636-3651.
290. Howe M, Raffa KF, Aukema B, Gratton C & Carroll A. 2022. Numbers matter: How irruptive bark beetles initiate transition to self-sustaining behaviour during landscape-altering outbreaks. Oecologia. 198: 681-698.
291. Tobin PC & Raffa KF. 2022. Establishment and spread rates do not necessarily predict outbreak dynamics in a broadly distributed invasive insect. For. Ecol. & Mgmt. doi.org/10.1016/j.foreco.2022.120357.
292. Uden DR, Mech AM, Havill NP, Schulz AN, Ayres MP, Herms DA, Hoover AM, Gandhi KJK, Hufbauer RA, Liebhold AM, Marsico TD, Raffa KF, Thomas KA, Tobin PC & Allen CR. 2022. Phylogenetic risk assessment is robust for forecasting the impact of non-native insects on North American trees. Ecol. Appl. DOI: 10.1002/eap.2761
293. Liu Z, Xing L, Huang W, Liu B, F Wan, Raffa KF, Hofstetter R, Qian W, Sun J-H. 2022. Chromosome level genome assembly and population genomic analysis provide insights

level into adaptive evolution of the red turpentine beetle, *Dendroctonus valens*. BMC Biology 20(1). DOI: 10.1186/s12915-022-01388-y.

294. Raffa KF, Brockerhoff EG, Grégoire J-C, Hamelin RC, Liebhold AM, Santini A, Venette RC & Wingfield MJ. 2023. Approaches to forecasting damage by invasive forest insects and pathogens: A cross-assessment. BioScience 73: 85-111. doi.org/10.1093/biosci/biac108.
295. Howe M, Yanchuk A, Wallin KF & Raffa KF. 2024. Quantification of heritable variation in multiple lodgepole pine chemical and physical traits that contribute to defense against mountain pine beetle (*Dendroctonus ponderosae*). For. Ecol. & Manag.. doi.org/10.1016/j.foreco.2023.121660.
296. Hofstetter RW, Raffa KF & Halevy M. 2024. Oviposition behavior of the quasi-gregarious parasitoid, *Ooencyrtus kuvanae* (Hymenoptera: Encyrtidae). J Insect Science. DOI.10.1093/jisesa/ieae018.
297. Schulz A Havill N, Marsico T, Ayres M, Gandhi K, Herms D Hoover A, Hufbauer R, Liebhold A, Raffa K, Thomas K, Tobin P, Uden D & Mech A. 2025. What is a specialist? Quantifying host breadth enables impact prediction for invasive herbivores. Ecol. Letters. doi: 10.1111/ele.70083.
298. Pokorny SW, Aukema BH, Raffa KF & AL Carroll. 2025. Population phase-dependent niche requirements may limit outbreaks of the range-expanding mountain pine beetle in the western boreal forest. For. Ecol. & Manag. 597. https://doi.org/10.1016/j.foreco.2025.123172.

Refereed Annual Reviews

1. Paine, TD, KF Raffa & TC Harrington. 1997. Interactions among scolytid bark beetles, their associated fungi, and host conifers. Ann. Rev. Entomol. 42: 179-206.
2. Little, A, CJ Robinson, SB Peterson, KF Raffa & J Handelsman. 2008. Rules of Engagement: Interspecies interactions that regulate microbial communities. Ann. Rev. Microbiology. 62: 375-401.
3. Williams GM, Ginzel MD, Ma Z, Adams DC, Campbell F, Lovett GM, Pildain MB, Raffa KF, Gandhi KJK, Santini A, Sniezko RA, Wingfield MJ & Bonello P. 2023. The global forest health crisis: a public good social dilemma in need of international collective action. Annual Review of Phytopathology. 61:377–401.

Books

1. Wagner, M.R. & K.F. Raffa. 1993. (eds.), "Sawfly Life History Adaptations to Woody Plants." Academic Press. NY. 581 pp.
2. National Research Council "The Future Role of Pesticides in US Agriculture." Berenbaum et al. National Academic Press. Washington, DC. 581 pp.

Book Chapters and Proceedings (Excluding Abstracts), Databases

1. Raffa, K.F., & A.A. Berryman. 1980. Flight responses and host selection by bark beetles. Pages 213-233. In: A.A. Berryman & L. Safranyik, eds. Proceedings of the second IUFRO conference on dispersal of forest insects: Evaluation, theory, and management implications. Conference Office, Cooperative Extension Service, Washington State University, Pullman WA.
2. Raffa, K.F. 1987. Devising pest management tactics based on plant defense mechanisms--theoretical and practical considerations. Pages 303-329, In: S. Ahmad and L.B. Brattsten (eds.). Molecular mechanisms in insect-plant interactions. Plenum Press, N.Y.
3. Raffa, K.F. 1988. Host orientation behavior of *Dendroctonus ponderosae*: Integration of token stimuli and host defenses. Pages 369-390. In: W.J. Mattson, J. Levieux, and C. Bernard-Dagan

(eds.), Mechanisms of Woody Plant Resistance to Insects and Pathogens. Springer-Verlag. N.Y.

4. Raffa, K.F. 1988. Chapter 24. The Mountain pine beetle, *Dendroctonus ponderosae* in western North America. Pages 505-530. In: A.A. (ed.), Population dynamics of forest insects: Patterns, causes and management strategies. Plenum Press. New York.
5. Robison, D.J., & K.F. Raffa. 1990. Hybrid poplar productivity, and suitability for the forest tent caterpillar: A framework for evaluation. Proc. 1989 Aspen Symposium: 155-162.
6. Schabel, H.G., & K.F. Raffa. 1991. Root and root collar insects in forestry: North America. Pages 232-241, In: R.L. Alfaro and S.G. Glover. Proc. IUFRO International Congress. Montreal, Quebec.
7. Raffa, K.F. 1990. Biology and impact of *Thrips calcaratus* in Wisconsin. Pages 317-324, In: B. Parker, M. Skinner, and T. Lewis (ed.), Towards Understanding Thysanoptera, USDA FS Gen. Tech. Report NE-147. Proc.1989 Internat. Thrips Confer.
8. Raffa, K.F. 1991. Induced defensive reactions in conifer-bark beetle systems. Pages 245-276. In: D.W. Tallamy and M.J. Raupp (eds.), Phytochemical Induction by Herbivores. Academic Press. NY.
9. Haissig, B.E., T.K. Kirk, W.L. Olsen, K.F. Raffa, & J.M. Slavicek. 1991. Applications of Biotechnology to Tree Culture, Protection, and Utilization. Internat. Sympos. Abstr. USDA FS Gen. Tech. Rept. NE-152. 141 pp.
10. Raffa, K.F. & K.D. Klepzig. 1992. Tree defense mechanisms against insect-vectored fungi. Pages 354-390. In: R.A. Blanchette and A.R. Biggs, eds. Defense Mechanisms of Woody Plants against Fungi. Springer-Verlag.
11. Smalley, E.B., K.F. Raffa, R.H. Proctor, & K.D. Klepzig. 1993. Tree response to infections by species of *Ophiostoma* and *Ceratocystis*. Pages 207-217, In: M.J. Wingfield, K.A. Seifert, and J.F. Webber. *Ceratocystis* and *Ophiostoma*: Taxonomy, Ecology, and Pathology. American Phytopathol. Soc. Press, St. Paul, MN.
12. Raffa, K.F., T. Phillips, & S. Salom. 1993. Strategies and mechanisms of host colonization by bark beetles. Pages 103-128. In T.O. Schowalter and G. Filip, eds. Interactions among bark beetles, pathogens, and conifers in North American forests. Academic Press.
13. Krause, S.C., M.R. Wagner, & K.F. Raffa. 1993. Effects of tree response to stress on sawfly outbreaks. Pages 211-227. In M.R. Wagner & K.F. Raffa (eds.), "Sawfly Life History Adaptations to Woody Plants." Academic Press. NY.
14. Codella, S.G., Jr. & K.F. Raffa. 1993. Defensive strategies of folivorous sawflies. Pages 261-294. In: M.R. Wagner & K.F. Raffa (eds.), "Sawfly Life History Adaptations to Woody Plants." Academic Press. NY.
15. Raffa, K.F., & M.R. Wagner. 1993. Implications of sawfly adaptations to plant-insect interaction theory. Pages 547-564. In: M.R. Wagner & K.F. Raffa (eds.), "Sawfly Life History Adaptations to Woody Plants." Academic Press. NY.
16. Raffa, K.F., B. McCown, D. Ellis, R. Ramachandran, & D. J.Robison. 1993. Prospects and approaches to genetically engineered pest resistance in energy trees. Proc. Internat. Energy Agency. 1991 Joint Meeting of Task Force V Groups on Exchange of Genetic Materials and Joint Trials of *Alnus, Populus, & Salix*. Ames, Iowa. 98-106.
17. Raffa, K.F. 1993. Current status and critical research needs in Scolytid genetics. Pp. 18-19, In J. Robertson & J. Hayes (eds.), Proc. Bark Beetle Genetics Workshop. USDA FS Gen. Tech. Rept. PSW-GTR-138.
18. Skilling, D., K.F. Raffa, D.J. Robison, & P. Berrang. 1994. Application with vegetative propagules. Pp. 137-152, In G.S. Foster & A.M. Disser (eds.), Proc. Southern Regional Information Exchange Group Biennial Symposium on Forest Genetics: Application of Vegetative Propagation in Forestry. USDA FS. SO-108.152.

19. Wraith, S., D. Ellis, K. Raffa, K. Kleiner, G. Stanosz, & B. McCown. 1994. Biorational strategies for deploying pest-resistant poplars in bioenergy plantations. Proc. Aspen Symposium.
20. Ellis, D., J. Rintamaki-Strait, B.H. McCown, K. Kleiner, & K.F. Raffa. 1994. Proc. Expression of Introduced Genes in Trees: Practical and Environmental Considerations. International Conference of Technical Assoc. of Pulp & Paper Industry R&D Division of Biological Sciences Symposium. St. Paul, MN.
21. Rieske, L.K., & K.F. Raffa. 1995. Thrips calcaratus--induced defoliation and subsequent foliar susceptibility. In B.L. Parker, M. Skinner, and T. Lewis (eds.). Thrips Biology and Management. Proc. 1993 Intern. Conf. on Thysanoptera, Towards Understanding Thrips Management.
22. Raffa, K.F. 1995. Differential responses among natural enemies and prey to bark beetle pheromones: Implications of chemical, temporal, and spatial disparities to evolutionary theory and pest management. Pp. 208-225. In Hain, F., S.M. Salom, W.F. Ravlin, T. Payne, & K. F. Raffa, In Behavior, Population Dynamics and Control of Forest Insects." Proc. International Union of Forestry Research Organizations.
23. Hain, F., S.M. Salom, W.F. Ravlin, T. Payne, & K. F. Raffa, (eds.) 1995. Behavior, Population Dynamics and Control of Forest Insects." Proc. International Union of Forestry Research Organizations. The Ohio State University, and USDA FS Northwestern Forest Exp. Stn.
24. Bryant, J., & K. F. Raffa. 1995. Chemical Antiherbivore Defense. Pp. 365-381, in B.L. Gartner (ed.), Stems and Trunks in Plant Form and Function. Academic Press.
25. Raffa, K.F. Bark beetles, fungi, trees, and humans: 1995. Four perspectives, four agendas. Pp. 7-9, In Christiansen (ed.), Bark Beetle, Blue-Stain Fungi, and Conifer Defense Systems Nr. 6-95.
26. Raffa, K.F. 1996. Population ecology and behavior of root-damaging Hylobius in North America. Pp. 177, In. Proc. World Congress, International Union of Forestry Research Organizations.
27. Ellis, D.D., J. Rintamaki-Strait, K. Francis, K. Kleiner, K. Raffa, & B. McCown. 1996. Transgene expression in spruce and poplar: From the lab to the field. In Boerjan & Ahija (eds.). Somatic Cell Genetics and Molecular Genetics of Trees. Klawer Academic Pub. The Netherlands.
28. Hart, E.R., R.R. James, T.E. Nebeker, D.J. Robison, K.F. Raffa, & M.A. Wagner. 1996. Entomological research in North American *Populus* and *Salix*: An overview. Proc. Internat. Poplar Commission.
29. Raffa, K.F. 1996. Biotechnology: A modern technology in an antiquated philosophy? Or a useful tool for addressing gaps in tree protection and natural resource management? Pp. 120-121. In Billings, R.W., & T.E. Nebeker, (eds.). Proceedings of the Second North American Forest Insect Work Conference. Texas Forest Service Publ. 160.
30. McCown, B.H., K.F. Raffa, K.W. Kleiner & D.D. Ellis. 1996. Risk in bioenergy crops: Ameliorating biological risk by using biotechnology and phytochemistry. Pp. 220-228, In Fuller, G., McKeon, T.A., & D.D. Bills (eds). Agricultural Materials as Renewable Resource: Nonfood and Industrial Applications. ACS Sympos. Series. 647. ACS, Washington.
31. Raffa, K.F. 1996. Tri-trophic interactions in bark beetle ecology. Pp. 118-119, In Billings, R.W. & T.E. Nebeker (eds.). Proceedings of the Second North American Forest Insect Work Conference. Texas Publ. 160.
32. Herms, D., & K.F. Raffa. 1996. Effects of stresses on the expression of plant resistance to herbivores: An overview. Pg. 162, In Proc. World Congress, International Union of Forestry Research Organizations.
33. Kirkendall, L.R., D.S. Kent, & K.F. Raffa. 1997. Interactions among males, females and offspring in bark and ambrosia beetles: The significance of living in tunnels for the evolution

of social behavior. Pp. 181-215. In, J.C. Choe & B.J. Crespi, (eds.), The Evolution of Social Behavior in Insects and Arachnids Cambridge Univ. Press, Cambridge.

34. Raffa, K.F., K.W. Kleiner, D.D. Ellis & B.H. McCown. 1997. Environmental risk assessment and deployment strategies in genetically engineered insect-resistant *Populus*. pp. 249-263. In Klopfenstein, N.B., Y.W. Chun, M-S Kim, & M.R. Ahiya (eds.). Micropropagation, Genetic Engineering, and Molecular Biology of Populus.
35. Ellis, D.D. & K.F. Raffa. 1997. Expression of transgenic Bacillus thuringiensis d-endotoxin in poplar. Pp. 178-186. In Klopfenstein, N.B., Y.W. Chun, M-S Kim, & M.R. Ahiya (eds.). Micropropagation, Genetic Engineering, and Molecular Biology of Populus. USDA FS Tech. Rept. RM-CTR-297.
36. Raffa, K.F. & K.D. Klepzig. 1996. Effects of root inhabiting insect - fungal complexes on aspects of host resistance to bark beetles. Pp. 211-223. In Mattson, W., Niemela, P., & Rousi, M. (eds.), Dynamics of Herbivory: Quest for Pattern and Principle. Proc. International Union of Forestry Research Organizations. USDA FS Gen. Tech. Rept. NC-183.
37. Raffa, K.F. 1999. Semiochemical disparities among bark beetles & natural enemies responding to bark beetle pheromones. In: Hayes, J. & K. Raffa (eds.) Proc. Bark Beetle Genetics Workshop. USDA FS PNW Gen. Tech. Rept-4.66.
38. Malmstrom, C.M., & K.F. Raffa. 2000. Biotic disturbance agents in the boreal forest: considerations for vegetation change models Global Change Biology. 6: 35-48.
39. Stanosz, G., K.F. Raffa, and R.L. Giese, 2001. Forest Protection. Chapter 10 In: Young, R.A. & RL. Giese (eds.). Introduction to Forest Science. Third Edition. J.Wiley & Sons.
40. Dahlsten, D.L., K.F. Raffa, D.L. Six, B.H. Aukema, & D.L. Rowney. 1999. Application of chemical ecology to conservation and augmentation of bark beetle natural enemies, 1997 results for northern California and Wisconsin. In: Hayes, J. & K. Raffa (eds.), Proc. Bark Beetle Genetics Workshop. USDA FS PNW Gen. Tech. Rept. 466.
41. Wallin, K.F. & K.F. Raffa. 1999. Density-dependent host selection behavior as a possible contributing factor to the population dynamics of insect herbivores. In: Hayes, J. & K. Raffa (eds.), Proc. Bark Beetle Genetics Workshop. USDA FS PNW Gen. Tech. Rept. 466.
42. Hayes, J. & K.. Raffa (eds.) 1999, Proc. Bark Beetle Genetics Workshop. USDA FS PNW Gen. Tech. Rept. 466.
43. Haberkern, K., Raffa, K.F. & B. Illman. 2000. Ophiostomoid fungi associated with bark beetle species colonizing white spruce in the Great Lakes region. Pgs. 109 – 110. In: Goheen, E. M. Proc. 1999 Western Internat. Forest Disease Work Conf. and Forest Insect Work Conf. Breckenridge, CO.
44. Raffa, K.F., B. Aukema, & D. L. Dahlsten 2000. Using semiochemical disparities among bark beetles and predators to improve the monitoring and conservation of natural enemies. Pgs. 37 - 39. In: Goheen, E. M. Proc. 1999 Western Internat. Forest Disease Work Conf. And Forest Insect Work Conf. Breckenridge, CO.
45. Werner, R.A., K.F. Raffa, & B. L. Illman Insect and Pathogen Dynamics. 2006. Pgs. 133-146, In Alaska's Changing Boreal Forest. Chapin, F.S., III, M. Oswood, K. Van Cleve, L.A. Viereck & D. Verbyla. Oxford Univ. Press, Oxford. 354 pp.
46. Raffa, K.F. 2004. Transgenic resistance in short rotation plantation trees: Benefits, risks, integration with multiple tactics, and the need to balance the scales. In, Strauss, S.H., & H.D. Bradshaw. Pp 208-227. The Bioengineered Forest. Challenges for Science and Technology. Resources for the Future, Washington DC.. 245 pp.
47. Czokajlo, D., J. McLaughlin, A. Ayyash, S. Teale, J. Wickham, J. Warren, R. Hoffman, B. Aukema, K. Raffa, & P. Kirsch. 2003. Intercept Panel Trap (INT PT) effective in management of forest Coleoptera. Pgs. 125-126, In: McManus, M.L. & A.M. Liebhold. 2003. Ecology, Survey and Management of Forest Insects. Proc. IUFRO 2002. Krakow, Poland. USDA FS Gen. Tech. Rept. NE-311.

48. Raffa KF, Aukema BH, Erbilgin N, Klepzig KD, & Wallin, KF. 2005. Interactions among Conifer Terpenoids and Bark Beetles across Multiple Levels of Scale: An attempt to understand links between population patterns and physiological processes. Rec. Adv. Phytochem. 39: 80-118.
49. Handelsman, J., C. J. Robinson, & K.F. Raffa. 2005. Analysis of microbial communities in lepidopteran guts: From models to metagenomics. Pgs. 143-168. In: McFall-Ngai , M., B. Henderson & E. Ruby (eds.) The Influence of Cooperative Bacteria on Animal Host Biology. Cambridge Univ. Press.
50. Raffa, K.F., L.S. Moroja, S.M. Bogdanowicz, K.F. Wallin, & R.G. Harrison. 2007. Phylogeographic analysis of *Dendroctonus rufipennis* based on mtDNA and microsatellites. Pp. 27-28, In B. Bentz, A. Cognato, & K. Raffa (eds.), Genetics of Bark Beetles and Associated Microorganisms: Third Workshop Proc. USDA FS RMRS-P-45; IUFRO WP 7.03.05. 51.pp.
51. Vasanthakumar, A, L Bauer, J Handelsman, & K. Raffa, 2007. Gut microbial flora of the emerald ash borer Pp. 7-8, In V Mastro, R Reardon & G Parra (eds.), Emerald Ash Borer: Research & Technol. Dev. Meeting 2005 Proc. USDA FHTET-2005-16. 72 .pp.
52. Vasanthakumar, A., Y. Cardoza, I. Delalibera, P. Schloss, J. Handelsman, K. Klepzig, & K. Raffa, 2007. Gut bacteria of bark and wood boring beetles Pp. 49-51, In B. Bentz, A. Cognato, & K. Raffa (eds.), Genetics of Bark Beetles and Associated Microorganisms: Third Workshop Proc. USDA FS RMRS-P-45; IUFRO WP 7.03.05. 51.pp.
53. Bentz, B, A. Cognato & K. Raffa 2007. Genetics of Bark Beetles and Associated Microorganisms: Third Workshop Proc. USDA FS RMRS-P-45; IUFRO WP 7.03.05. 51.pp.
54. Coyle, D., W. Mattson, & K. Raffa. 2008. Invasive root feeding insects in natural forest ecosystems of North America. Pp. 146-162, In S. Johnson & P. Murray (eds), Root Feeders: an ecosystem perspective. CABI.
55. KF Raffa, A Adams, N Broderick, C Boone, Y Cardoza, I Delalibera, & A Vasanthakumar. 2009. Symbionts of invasive insects: Characterization, ecological roles, and relation to invasive potential and management potential. Proc. 19th. USDA Interagency Forum. 60-62.
56. PC Tobin, AE Hajek, LM Blackburn, JJ Hannam, A Diss-Torrence, KF Raffa, & C Nielson. 2008. Space-time interactions between gypsy moth and associated entomopathogens in newly established populations. Proc. 19th. USDA Interagency Forum. 81.
57. Bentz, B. CD Allen, M Ayres, E Berg, A Carroll, M Hansen, J Hicke, L Joyce, J Logan, W MacFarlane, J MacMahon, S Munson, J Negron, T Paine, K Raffa, J Regniere, M Reid, W Romme, S Seybold, D Six, D Tomback, J Vandygriff, T Veblen, M White, J Witcosky, D Wood. 2009. Bark beetle outbreaks in western North America: Causes and Consequences. Univ. Utah Press. 42 pp.
58. Goodrich-Blair H, J-M Ané, J Bever, S Bordenstein, M Bright, J Chaston, K Clay, C Currie, A Douglas, N Gerardo, M Harrison, R Ley, M McFall-Ngai, A Mukherjee, B Rader, K Raffa, E Ruby, M B Saffo, Marc-André Selosse, Sonnenburg, S P Stock, G Suen, K Turnau, M Udvardi, K Visick, V Weis. 2010. Symbiosis Research, Technology, and Education: Proceedings of the 6th International Symbiosis Society Congress. 19pp.
59. Arango. RA, Green F III, Esenther, GR, Marschalek DA,Berres ME & Raffa KF. 2013. Mechanisms of termite spread in Wisconsin and potential consequences as a result of changing climate trends. Proc. Amer. Wood Protect. Assoc. Nat. Meetings.
60. Arango. RA, Green F III, & Raffa KF. 2013. Changes in bacterial gut community of *Reticulitermes flavipes* (Kollar) and *Reticulitermes tibialis* Banks after feeding on termiticidal bait material.
61. Van Driesche R. & KF Raffa. 2014. Larch Sawfly, Chpt 13: pp. 145-153,; Introduced Basswood Thrips, Chpt, 23: pp 255-257, In: R. Van Driesch & R. Readon, "The Use of Classical Biological Control to Preserve Forests in North America. USDA FS FHTET-2013-2. 414 pp.

62. Raffa KF, Grégoire J-C, & Lindgren BS. 2015. Natural history and ecology of bark beetles. Chpt. 1, pp 1-40, In Vega FE & Hofstetter RW, Bark Beetles: Biology and Ecology of Native and Invasive Species. Elsevier, New York, NY. 620 pp.
63. Grégoire J-C, Raffa KF, & Lindgren BS. 2015. Economics and politics of bark beetles. Chpt. 17, pp 585-605, In Vega FE & Hofstetter RW, Bark Beetles: Biology and Ecology of Native and Invasive Species. Elsevier, New York, NY. 620 pp.
64. Raffa KF, Aukema BH, Bentz BJ, Carroll AL, Hicke JA & Kolb TE. 2015. Responses of tree-killing bark beetles to a changing climate. In Bjorkman C & Niemela P. Climate Change and Insect Pests, CABI, Wallingfored England. Pp. 173-201.
65. Lindroth, RL & KF Raffa. 2016. Experimental approaches for assessing invertebrate responses to global change factors. In Johnson, SN & TH Jones (eds.). Global Climate Change and Terrestrial Invertebrates. John Wiley & Sons. Chichester, UK. pp 30-45.
66. Raffa KF, Andersson MN & Schlyter S. 2016. Host selection by bark beetles" Playing the odds in a high-stakes game. In Tittiger C & Blomquist G. (eds.) Pine Bark Beetles, Advances in Insect Physiology. Elsevier. London. 50: 1-74.
67. Cansler CA, Hood SM, Varner JM, van Mantgem PJ, Agne MC, Andrus RA, Ayres MP, Ayres BD, Bakker JD, Battaglia MA, Bentz BJ, Breece CR, Brown JK, Cluck DR, Coleman TW, Corace RG, Covington WW, Cram, DS Cronan JB, Crouse JE, Das AJ, Davis RS, Dickinson DM, Fitzgerald SA, Fulé PZ, Ganio LM, Grayson LM, Halpern CB, Hanula JL, Harvey BJ, Hiers JK, Huffman DW, Keifer MB, Keyser TL, Kobziar LN, Kolb TE, Kolden CA, Kopper KE,, Kreitler JR, Kreye JK, Latimer AM, Lerch AP, Lombardero MJ, McDaniel VL, McHugh CW, McMillin JD, Moghaddas JJ, O'Brien JJ, Perrakis DDB, Peterson DW, Prichard SJ, Progar RA, Raffa KF**,** Reinhardt ED, Restaino JC, Roccaforte JP, Rogers BM, Ryan KC, Safford HD, Santoro AE, Shearman TM, Shumate AM, Sieg CH, Smith SL, Smith RJ, NL, Stuever M, Stevens JT, Stoddard MT, Thies WG, Vaillant NM, Weiss SA, Westlind DJ, Woolley TJ & Wright MC. 2020. The Fire and Tree Mortality Database for empirical modeling of individual tree mortality after fire. Scientific Data. doi.org/10.1038/s41597-020-0522-7.
68. Mech AM, Hoover AM, Schulz AN, Barnes BF, Boyd KS, Durden L, Havill NP, Hufbauer RA, Liebhold AM, Marsico TD, Raffa KF, Singareddy C, Teach E, Tobin PC, Wolf AW & Thomas, K.A., 2020. Traits and Factors Catalog (TRAFAC): Hardwood specialists of North America: U.S. Geological Survey data release, https://doi.org/10.5066/P9FT7C1O.
69. Schulz, AN, RA Hufbauer, CF Aoki, MP Ayres, KJK Gandhi, NP Havill, DA Herms, AM Liebhold, S Maco, TD Marsico, KF Raffa, KA Thomas, PC Tobin, DR Uden & AM Mech. 2021. Synthesis and utilization of big data for forecasting the impacts of non-native forest insects in North America Proc. 2021 North Amer. Forest Insect Work Conf. USDA FS Gen. Techn. Rept.
70. Raffa KF. 2022. Appreciating our careers as brief snapshots of forests, insects, and human values, but also an opportunity to help shape their shared trajectory. Pages 10-24 in Arango RA & Pureswaran DS (Tech. Eds.) Proc. 7th. North Amer. Forest Insect Work Conf: Shaping forests: Action in a changing world. USDA FS. 232pp.
71. Mech, A.M., K.A. Thomas, T.D. Marsico, D.A. Herms, C.R. Allen, M.P. Ayres, K.J.K. Gandhi, J. Gurevitch, N.P. Havill, R.A. Hufbauer, A.M. Liebhold, K.F. Raffa, A.N. Schulz, D.R. Uden, and P.C. Tobin. 2021. How available data can be used to predict the impact of non-native forest insects. Soc. Amer. Foresters 2020 Nat. Conv. Proc. (Suppl. Infor.). J. Forestry 119(2), pp. S87, https://doi.org/10.1093/jofore/fvab002

Presentations:

Invited Symposia

1. International Union of Forestry Research Organizations, Aug. 30, 1979. Symposium on dispersal of forest insects: Flight responses and host selection by bark beetles. K.F. Raffa & A.A. Berryman. Sandpoint, ID.
2. Southern Forest Insect Work Conference, July, 1983. Symposium on Plant-Insect Interactions: The role of host-mediated selection pressures in bark beetle population trends. Biloxi, MS. K.F. Raffa. Biloxi MS.
3. Entomological Society of America, National Meetings, Dec. 1984. Symposium on Better Understanding Insecticide Resistance in Phytophagous Insects: Synergists as research tools and in agriculture. K.F. Raffa.
4. Entomological Society of America, Eastern Branch Meetings, Sept., 1984. Symposium on Insect-Plant Interactions: Mechanisms providing for evolutionary stability: Devising pest management tactics based on plant defense mechanisms--Theoretical and practical aspects. Hershey, PA. K.F. Raffa.
5. Gordon Conference on the Chemistry of Plant-Insect Interactions, Jan.1986. Symposium on Trophic Level Interactions: Conifer-Bark Beetle Systems. Oxnard, CA. K.F. Raffa.
6. North Central Forest Pest Workshop. Plenary Session. Oct. 14, 1987. Insect and Disease Interrelationships in red pine. Eau Claire, WI. K.F. Raffa & E. Smalley.
7. International Symposium on the Ecology and Control of *Dendroctonus* Bark Beetles, Sept. 1987. To kill a tree: On the nature of bark beetle aggression and conifer defense. Borzhomy, Georgia, USSR. A.A. Berryman, K.F. Raffa, & N.C. Stenseth.
8. XIII International Congress of Entomology, July 7, 1988. Induced defensive reactions in conifer-bark beetle systems. Vancouver, British Columbia. Canada. K.F. Raffa.
9. Entomological Society of America, Southeastern Branch Meetings. Centennial Symposium and Plenary Session. Jan., 1989--Plant Genetic Engineering for Resistance to Insects: Evaluating the risks of biotype evolution and secondary pest outbreaks: Trees as a model system. K.F. Raffa.
10. International Thrips Conference, Feb., 1989. Defoliation of Lake States basswood by *Thrips calcaratus*, a new threat to hardwood management. Burlington, VT. K.F. Raffa.
11. Joint Meetings of the Western International Forest Disease and Western Forest Insect Work Conferences, Sept. 1989. Dynamics of root infestation in predisposing red pines to pine engraver attack. Bend, Oregon. K.F. Raffa, E.B. Smalley, & K.D. Klepzig.
12. Entomological Society of Canada, National Meetings, October 2, 1989. Plenary session. The role of plant stress in conifer-bark beetle interactions. St. John's, Newfoundland, Canada. K.F. Raffa.
13. XIX World Congress, International Union of Forestry Research Organizations, August, 1990. Root insects affecting North American forests. Montreal, Canada. H.G. Schabel & K.F. Raffa.
14. International Symposium on the Taxonomy and Biology of the Ophiostomatales, August 21, 1990. Tree response to infections by species of *Ophiostoma*. Bod Windsheim, West Germany. E. Smalley & K.F. Raffa.
15. North American Forest Insect Work Conference, March, 1991. Interactions among root beetles, fungi, and bark beetles in promoting forest declines: Dynamics of infection and mortality in Lake States red pine. Denver, CO. K.F. Raffa, K.D. Klepzig, & E. Smalley.
16. North American Forest Insect Work Conference, March, 1991. A bark beetle/*Ceratocystis* association: A paradox. Denver, CO. E. Smalley & K.F. Raffa.
17. North American Forest Insect Work Conference, March, 1991. Use of host volatiles in monitoring pine root weevil dispersal, and their management implications. Denver, CO. L.K. Rieske & K.F. Raffa.
18. International Symposium on The Applications of Biotechnology to Tree Culture, Protection, and Utilization, Aug., 1991. Transgenic trees exhibiting insect and disease resistance. B.H. McCown, D.D. Ellis, K.F. Raffa, & D.J. Robison.

19. International Energy Association: Joint Meeting of Task Activity Groups on Exchange of Genetic Material and Pest/Disease Management, August 1991. Prospects and approaches for transgenic insect resistance in energy trees. Ames, Iowa. K.F. Raffa, B.A. McCown, D.D. Ellis, R. Ramachandran, D.J. Robison & E. Zeldin.
20. North Central Forest Pest Workshop, October 1991. Host range, development, and behavior of the Introduced Basswood Thrips. Cable, WI. K.F. Raffa. & L.K. Rieske.
21. North Central Forest Pest Workshop, October, 1991. Predator-prey interactions between wood ants and conifer sawflies. Cable, WI. S. Codella & K.F. Raffa.
22. North Central Forest Pest Workshop, October, 1991. Biotechnological approaches to tree improvement. Cable, WI. D.D. Ellis, B.H. McCown, R. Ramachandran, D.J. Robison, & K.F. Raffa.
23. Eastern Spruce Budworm Research Conference, Jan. 1992. Prospects for the use of genetically engineered pest resistance in trees. Opportunities and risks. Sault Ste. Marie, Ontario. K.F. Raffa, B.H. McCown, D.D. Ellis, & R. Ramachandran.
24. Southern Forest Tree Improvement Annual Meeting, Aug. 1992. Research applications with vegetative propagules. Huntsville, AL. D. Skilling, K.F. Raffa, D.J. Robison, & P. Berrang.
25. The 1993 International Conference on Thysanoptera; Sept. 1993. Influence of introduced basswood thrips - induced defoliation on subsequent foliar suitability. L.K. Rieske & K.F. Raffa.
26. Entomological Society of America National Meetings. Dec. 1993. Symposium on Plant Odor and Adult Behavior of Herbivorous Insects. Integration of tree volatiles into the orientation sequence and interspecific associations of subcortically feeding beetles. K.F. Raffa.
27. International Union of Forestry Research Organizations, Behavior, Population Dynamics, and Control of Forest Insects. April, 1994. Factors affecting the orientation and distribution of natural enemies of the pine engraver. K.F. Raffa & D.L. Dahlsten.
28. International Conference on the Evolutionary Biology of Scolytidae. Sept. 1994. Host- and Natural Enemy- Mediated Selective Pressures Affecting Reproductive Fitness and Evolutionary Diversification in Bark Beetles. Kananaskis, Alberta. K.F. Raffa.
29. Southern Forest Pest Work Conference. 1994. Root and stem insect-fungal complexes associated with Red Pine Decline Disease. K.D. Klepzig & K.F. Raffa.
30. Southern Forest Pest Work Conference. 1994. Application of genetic engineering to tree bioenergy production: Integration of ecological theory and molecular biology to develop stable protection against multiple pest complexes. K. Raffa, D. Ellis, K. Kleiner, B. McCown, & G. Stanosz.
31. International Conference of Technical Assoc. of Pulp & Paper Industry R&D Division of Biological Sciences Symposium. Oct. 1994. Expression of Introduced Genes in Trees: Practical and Environmental Considerations. St. Paul, MN. D. Ellis, J. Rintamaki-Strait, B.H. McCown, K. Kleiner, & K.F. Raffa.
32. Gordon Conference on Plant-Insect Interactions. Jan. 1995. Implications of plant-insect interaction theory to current and emerging natural resource issues. Oxnard, CA. K.F. Raffa.
33. International Union of Forestry Research Organizations. July 1995. Conference on Host Plant Resistance. Bark beetles, fungi, trees, and humans: Four perspectives, four agendas. Os, Norway. K.F. Raffa.
34. International Union of Forestry Research Organizations World Congress. August 1995. Population ecology and behavior of root feeding beetles. Tampere, Finland. K.F. Raffa.
35. International Union of Forestry Research Organizations World Congress. Effects of stresses on the expression of plant resistance to herbivores: An overview. Tampere, Finland. August 1995. D. Herms & K.F. Raffa.
36. Southern Forest Pest Work Conference. August 1995. Mediation of insect-disease interactions by host stress. Sunset Beach, NC. K.D. Klepzig & K.F. Raffa.

37. International Union of Forestry Research Organizations, Conference on Somatic Cell Genetics and Molecular Genetics of Trees. Sept. 1995. Transgene expression in spruce and poplar: From the lab to the field. Gent, Belgium, D.D. Ellis, J. Rintimaki-Strail, K. Francis, K. Kleiner, K.F. Raffa, & B. McCown.
38. Annual Gypsy Moth Review. 1995. Biological Control in the Great Lakes Region. K.F. Raffa.
39. Second North American Forest Insect Work Conference. 1996. Symposium on Biorational approaches to biotechnology. "Biotechnology: A modern technology in an antiquated philosophy? or A useful tool for addressing gaps in tree protection and natural resource management?" San Antonio, TX. K.F. Raffa.
40. Second Annual North American Forest Insect Work Conference. April, 1996. Tritrophic-interactions in subcortically feeding insects. San Antonio, TX. K.F. Raffa.
41. Entomological Society of America National Meetings. 1996. Ecological consequences of pheromone variation in *Ips pini*. Symposium on Bark Beetle Biological Control. Louisville, KY. K. Hobson & K.F. Raffa.
42. Entomological Society of America National Meetings. 1996. Biological control of bark beetles: Conclusions and Discussion. Symposium on Bark Beetle Biological Control. Louisville, KY. K.F. Raffa.
43. International Poplar Commission. 1996. Entomological research in North American *Populus* and *Salix*: An overview. Hart, E.R., R.R. James, T.E. Nebeker, D.J. Robison, K.F. Raffa, & M.A. Wagner.
44. Chemical Ecology Meetings. 1996. Ecosystem management and chemical ecology: Interactions among bark beetles, fungi, and conifers as a case study. Oaxtec, Mexico. K.F. Raffa.
45. National Center for Ecological Analysis and Synthesis Workshop on Extrapolation of Arctic and Boreal Processes that Feedback to Climate. 1997. "Climate-Insect-Pathogen Interactions in Boreal Forest Dynamics." K.F. Raffa & C. Malmstrom. Santa Barbara, CA.
46. Western Forest Insect Work Conference. 1997. Host plant mediation of feeding guild interactions. Influence of jack pine budworm defoliation on bark beetles and associated fungi. K. Wallin & K.F. Raffa.
47. International Society of Chemical Ecology. 1997. Mixed messages at multiple trophic levels: The ecology of bark beetle pheromone communication. Vancouver, B.C. Canada. K.F. Raffa.
48. Southern Forest Insect Work Conference. 1997. Net effects of bark beetle-associated fungi. Charleston, S.C. K.F. Raffa.
49. Southern Forest Insect Work Conference. 1997. Anticipatory biological control along the leading edge of the gypsy moth. Charleston, S.C. K.F. Raffa.
50. National Gypsy Moth Techn. Meeting. 1999. Life on the edge. Annapolis, M.D. K.F. Raffa.
51. Forest Health Monitoring Review. Evaluation of basswood stands in the Great Lakes Region. March 1999. St. Louis MO.
52. Western Forest Insect Work Conf. 1999. Breckenridge, CO. Ophiostomoid fungi associated with bark beetle species colonizing white spruce in the Great Lakes region. K. Haberkern. B. Illman & K.F. Raffa.
53. Western Forest Insect Work Conf. 1999. Breckenridge, CO. Implementation of biological control of bark beetles. K.F. Raffa.
54. Gypsy Moth Annual Review. 1999. Research on Biological Control of gypsy moth in Wisconsin. K.F. Raffa.
55. National Forest Health Monitoring Workshop. Feb. 2000. Basswood Decline. K. F. Raffa & J. Witter.
56. Entomological Society of America, North Central Branch Meetings, 2000. The role of predators in the dynamics of gypsy moth populations. A. Liebhold & K. Raffa.
57. North Central Forest Pest Workshop. 2000. Rhinelander, WI. Recent research on pine bark beetles. K.F. Raffa, N. Erbilgin, B. Aukema, & K. Wallin.

58. North Central Forest Pest Workshop. 2000. Rhinelander, WI. Recent research on the biological control of gypsy moth. K.F. Raffa, N. Broderick, & J. Powell.
59. Entomological Society of America, National Meetings. 2000. Ecological aspects of pheromone biosynthesis and response in bark beetles. Montreal, Canada. K.F. Raffa.
60. USDA Interagency Gypsy Moth Research Forum. 2001. Recent advances on midgut flora of gypsy moth. K.F. Raffa, N. Broderick, R. Goodman, & J. Handelsman.
61. North American Forest Insect Work Conference. 2001. Host availability at the individual tree level: Edmonton, Alberta. K. F. Raffa.
62. International Union of Forestry Research Organizations, Conference on Somatic Cell Genetics and Molecular Genetics of Trees. July 2001. Use of transgenic resistance in short rotation poplars: Efficacy, risk, and integration with other pest management tactics. Portland, OR. K. F. Raffa.
63. Society of American Foresters National Meetings, 2002. The good news: We can kill insects and protect trees using transgenes. The bad news: Nature always makes things more complicated than they appear.… Now what? Winston-Salem, NC. K. F. Raffa.
64. European Scientific Committee of the European Union. 2002. Importance of insect-fungus relationships as forest pests. Vienna, Austria. K. F. Raffa.
65. Entomological Society of America National Meetings. 2002. A. Adams, D. Dahlsten, K. Raffa, D. Six, & C. Boone. Role of fungi in host location by bark beetle parasitoids-ecological and evolutionary considerations.
66. Conifer Defense Meetings, 2003. Some unanswered questions about conifer-bark beetle-fungal (and human) interactions. As, Norway. K.F. Raffa.
67. North Central Forest Pest Workshop. 2003. Cloquet, MN. Can we predict how anticipated global warming will affect bark beetle impacts on North American forests? K. F. Raffa
68. Entomological Society of America National Meetings. 2003. Belowground herbivory on pines in the Great Lakes Region: Niche partitioning, chemical ecology, and impacts on above-ground processes. K. F. Raffa
69. Joint meeting of the International Society for Chemical Ecology & Phytochemcial Society North America. 2004. Ottawa, Canada. Interactions among conifer terpenoids and bark beetles across multiple levels of scale: An attempt to understand links between population patterns and physiological processes. K.F. Raffa.
70. Society for Industrial Microbiology Annual Meeting: Symbioses between Microbes and Invertebrates: Novel Biodiversity and Ecophysiology Aug. 2005. Chicago, IL. The role of bacteria in gypsy moth susceptibility to *Bacillus thuringiensis*. N. A. Broderick, K.F. Raffa & J. Handelsman.
71. Bark beetle Symposium Nov. 2005. Snowbird, UT. Tritrophic interactions K.F. Raffa
72. North Central Forest Pest Workshop. 2005. Life history parameters of recently established gypsy moth *Lymantria dispar* (Lepidoptera: Lymantriidae) populations in relation to stand density of Wisconsin oak forests. Fort Lauderdale, FL. R. A. Hoffman & K. F. Raffa.
73. North American Forest Insect Work Conference. 2006. Multiple-component symbioses facilitate invasion of variable habitats: Host colonization by spruce beetle - microbe associations as a model.: Asheville, NC. K. F. Raffa, B. H. Aukema, & Y. Cardoza.
74. North American Forest Insect Work Conference. 2006. Dynamics of an eruptive herbivore: the endemic - epidemic transition.: Asheville, NC. Carroll, A.L., Aukema, B.H. & Raffa, K.F.
75. North American Forest Insect Work Conference. 2006. Asheville, NC.Spatiotemporal dynamics of the current mountain pine beetle outbreak in British Columbia: A link between patterns of land tenure and insect spread? Zhu, J., Raffa, K.F., Sickley, T.A., & S.W. Taylor.
76. Western Forest Insect Work Conference. 2007. Boise, ID. A Volatile Mix: Terpenes, Trees, Beetles, and Microbes. Raffa, K.F

77. Gordon Research Conference on Microbial Population Biology. 2007. Andover, NH. From benign to insidious: role of midgut commensal bacteria in insect disease. N Broderick, KF Raffa, & J. Handelsman.
78. USDA Interagency Forum. Jan. 2008. Symbionts of invasive insects: Characterization, ecological roles, and relation to invasive potential and management potential. KF Raffa, A Adams, N Broderick, C Boone, Y Cardoza, I Delalibera, & A Vasanthakumar.
79. USDA Interagency Forum. Jan. 2008. Space-time interactions between gypsy moth and associated entomopathogens in newly established populations. PC Tobin, AE Hajek, LM Blackburn, JJ Hannam, A Diss-Torrence, KF Raffa, & C Nielson.
80. International Scientific Workshop on Mountain Pine Beetle. Sept. 2008. Connecting the Components. K.F. Raffa.
81. Entomological Society of America, National Meetings. Nov. 2008. Reno, NV. Cellulolytic associates of *Sirex noctilio* within the context of a multipartite symbiosis. A. Adams & K. F. Raffa.
82. Entomological Society of America, National Meetings. Nov. 2008. Reno, NV. Remarks on insect-symbiont interactions. K. F. Raffa.
83. Soc. Invert Pathology Annual Meetings. 2009. *Bacillus thuringiensis*, resident gut microbiota, and innate immunity in lepidopteran insects. Handelsman, J, KF Raffa &. Broderick N A, Park City UT.
84. International Society of Symbiosis. 2009. Potential roles of symbionts in the ecology and impacts of invasive insects. AA Adams & KF Raffa, Madison, Wisconsin.
85. International Society of Symbiosis. 2009. Symbiosis: A key driver of bark beetle physiology, ecology, evolution and impacts on humans. K. Klepzig,, AA Adams, J. Handelsman, & KF Raffa, Madison, Wisconsin.
86. International Society of Symbiosis. 2009. *Bacillus thuringiensis*, resident gut microbiota, and innate immunity in lepidopteran insects. J. Handelsman, N. Broderick & KF Raffa, Madison, Wisconsin.
87. Gordon Conference on Plant-Herbivore Interactions. 2010. Partners in Crime: The role of symbioses in biological invasions KF Raffa, A Adams, J Bohlmann, C Boone & C Currie. Galveston, TX.
88. Western Forest Insect Workshop. 2010. A whole different animal. Studying insects during endemics and outbreaks teaches us different lessons. K. Raffa, P. Tobin, B. Aukema, J. Bohlmann, C. Boone, A. Carroll,. Flagstaff, AZ.
89. North Central Forest Pest Work Conference. 2010. Interactions between below- and above-ground herbivores in facilitating black-legged tick populations. D Coyle, S Paskewtitz, KF Raffa.
90. Entomological Society of America National Meetings. 2010. Companion Ticket: Facilitated biological invasions by insect herbivores and their symbionts. KF Raffa, A Adams, J Bohlmann, C Boone, & C Currie. San Diego, CA.
91. Entomological Society of America National Meetings. 2010. Interactions between below- and above-ground herbivores in facilitating black-legged tick populations. D Coyle, S Paskewtitz, KF Raffa. San Diego, CA.
92. Entomological Society of America National Meetings. 2010. Founders Memorial Lecture: AD Hopkins. KF Raffa. San Diego, CA.
93. North American Forest Insect Work Conference. 2011. How can we best test whether fungi assist bark beetles in contending with tree defenses? Ideas welcome! K Raffa. May 9-12. Portland, OR.
94. North American Forest Insect Conference. 2011. Does wildfire promote outbreaks by tree-killing bark beetles? KF Raffa, BJ Bentz, D Blackford, A Lerch, EN Powell. May 9-12, Portland, OR.

95. North American Forest Insect Conference. 2011. Root herbivory, black-legged ticks, and Lyme disease: an ecological cascade in red pine forests. DR Coyle, SM Paskewitz, RJ Murphy, X Lee, & KF Raffa. May 9-12, Portland, OR.
96. International Society of Chemical Ecology. 2011. Silverstein-Simeone Award Lecture. Terpenes tell different tales at different scales: The chemical ecology of conifer - bark beetle - microbial interactions. KF Raffa, July 24-29, Vancouver, BC.
97. Annual Gypsy Moth Review. 2011. Factors affecting gypsy moth populations during the post-establishment, pre-outbreak phase in northern Wisconsin. KF Raffa, R Gray, R Murphy & P Tobin. Madison, WI.
98. Entomological Society of America National Meetings. 2011. Interacting forces that constrain forest insect populations: why outbreaks are rare, and why some may be becoming more common. Symposium on Forest Entomology. KF Raffa, Nov 13-16, Reno, NV.
99. Entomological Society of America National Meetings. 2011. It's about time. Induced defenses and bark beetle counter-adaptations. Symposium on Chemical signaling, defense and counter-defense between insect herbivores and their hosts. KF Raffa, Nov 13-16, Reno, NV.
100. Western Forest Insect Workshop. 2012. Compound effects of root herbivory: A bottom-up look at how habitat alterations at the site and landscape scales can come back to bite us. KF Raffa. Penticton, BC.
101. Western Forest Insect Workshop. 2012. Spatiotemporal dynamics of transitions from endemic to epidemic regimes: Feedback between population density and distribution contributes to eruptions. A Carroll, J Koopmans, B Aukema & KF Raffa. Penticton, BC.
102. USDA NIFA-AFRI Awardee meeting. Climate warming of the southern boreal forest: Consequences for tree-insect interactions Knoxville, TN. Nov. 2012.
103. Western Forest Insect Workshop. 2013. Tango, square dance, or rave: Organismal interactions at bark beetle transformed habitat. J. Pfammatter & KF Raffa. Coeur d'Alene ID.
104. Western Forest Insect Workshop. 2013. Sometimes it takes more than two to tango: Spruce beetle multi-partite symbioses. YJ Cardoza, JC Moser, K Klepzig & KF Raffa. Coeur d'Alene ID.
105. Western Forest Insect Workshop. 2013. Comparison of host plant defenses in whitebark and lodgepole pine. C Boone, B Bentz, E Powell, P Townsend, & K Raffa. Coeur d'Alene ID.
106. Natural Disturbance Conference, Plenary Speaker. National Park of Bavarian Forest, Neuschönau, Germany. April 2013.
107. National Center for Ecological Analysis & Synthesis. Some features of plant-insect interactions that can help us contend with trade-offs encountered when modeling drought- and insect-induced forest mortality. Santa Barbara, CA. Feb, 2013.
108. International Union of Forest Research Organizations, World Congress. 2014. What features of tree-insect interactions will most likely be influenced by climate change, and how? KF Raffa. Salt Lake City, UT.
109. Entomological Society of America National Meetings. 2014. Meaningful casual relationships: How bacteria mediate gypsy moth - aspen interactions Symposium: Beyond the horizon: Unraveling the novel complexity of insect-plant interactions. C Mason & KF Raffa. Portland, OR.
110. International Society of Chemical Ecology. 2015. Plenary Talk. Chemical ecology of bark beetles in expanding ranges made accessible by climate change. KF Raffa, June 29-July 3, Stockholm, Sweden.
111. North Central Forest Pest Work Conference. 2015. Accessing how climate change will impact defoliators in the southern boreal forest. KF Raffa. Menominee, WI.
112. Entomological Society of America, National Meetings. 2015. Degradation of tree defense compounds by bacteria associated with folivores and bark beetles. KF Raffa, C Boone, K Keefover-Ring, R Lindroth, C Mason. Minneapolis, MN.

113. North American Forest Insect Work Conference. 2016. Tree resistance as the primary tool to respond to invasions by cryptic tree killing forest pathogens and insects. Showalter D, Smith J, Raffa KF, Sniezko R, Adams D, Herms DA, Liebhold A & Bonello P. May 31-June 3. Washington DC.
114. North American Forest Insect Work Conference. 2016. Anticipatory biological control of mountain pine beetle in areas of increasing impact and range expansion due to climate change. Raffa KF, Krause A, Pfammatter JA & Townsend PA. May 31-June 3. Washington DC.
115. North American Forest Insect Work Conference. 2016. Integrated analysis of pine defense systems as a foundation to understand and enhance resilience of conifer ecosystems. Raffa KF, Bonello P, Cook S, Erbilgin N,Keefover-Ring K, Klutsch J, Mason C, Villari C & Townsend PA. May 31-June 3. Washington DC.
116. North American Forest Insect Work Conference. 2016. A comparison of relative climate influences on MPB outbreaks in lodgepole and whitebark pine forests across the western US. Buotte PC, Hicke JA, Preisler HK, Raffa KF. May 31-June 3. Washington DC.
117. North American Forest Insect Work Conference. 2016. Tree response and mountain pine beetle (*Dendroctonus ponderosae)* attack preference: A tale of two ecosystems. Bentz B, Boone C, Hansen M, Hood S, Raffa K & Vandygriff J. May 31-June 3. Washington DC.
118. North American Forest Insect Work Conference. 2016. Factors that affect the establishment of *Oobius agrili* (Hymenoptera: Encyrtidae), an introduced egg parasitoid of *Agrilus planipennis*, in Michigan ash stands. Petrice, TR, Ravlin FW, Bauer LS, Poland TM, KF & McCullough DG.. May 31-June 3. Washington DC.
119. 25th International Congress of Entomology. 2016. Bark Beetles and conifers: A system characterized by cross-scale interactions and thresholds. KF Raffa. Sept 25-30. Orlando, FL.
120. National Forum on Climate and Pests. 2016. Climate change and bark beetle outbreaks in whitebark pine stands of the western United States. Hicke, JA, PC Buotte, HK Preisler, KF Raffa, JA Logan & JT Abatzoglou. Oct. 4-6, Washington, DC.
121. Yellowstone Science Conference. 2016. Spatial variability in tree regeneration after wildfire delays and dampens future bark beetle outbreaks. Seidl R, Donato DC, Raffa KF & Turner MG. Oct. 6, Yellowstone NP.
122. Western Forest Insect Work Conference. 2017. Defense syndromes of lodgepole and whitebark pines against mountain pine beetle - fungal complexes. KF Raffa, CJ Mason, P Bonello, S Cook, N Erbilgin, K Keefover-Ring, JG Klutsch, C Villari & PA Townsend. Jackson Hole, WY.
123. Western Forest Insect Work Conference. 2017. Resistance and resilience in forest ecosystems: A ground-up perspective. Raffa KF. ackson Hole, WY.
124. Western Forest Insect Work Conference. 2017. Geographic variability in climate suitability for whitebark pine mortality from mountain pine beetles. P Buotte, JA Hicke, HK Preisler, JT Abatzoglou, KF Raffa. Jackson Hole, WY.
125. International Union of Forest Research Organizations. 2017. Plenary Talk. Interpreting mechanisms and roles of tree defense in systems characterized by thresholds and cross-scale interactions. Raffa KF. Sept. 11-15, Thessalaniki, Greece.
126. Interagency Meeting on Invasive Species. 2018. Plenary Talk. It's about time: Applying variable and changing temperatures to the management of two naturalized invasive pests, oak wilt fungus and gypsy moth. K. Raffa, M. Falk, S. Jagemann, J. Juzwik, R. Lindroth & P. Tobin. Annapolis, MD.
127. Annual Gypsy Moth Review. 2018. Genetic variation in aspen phytochemical patterns mediates the effects of phenological asynchrony on gypsy moth larval performance. M Falk, R Lindroth, K Keefover-Ring & K. Raffa. Indianapolis, IN. Nov. 6-8.
128. Entomological Society of America / Entomological Society of Canada National Meetings. 2018. The ups and downs of studying tree chemistry effects on bark beetle - microbial

complexes: Challenges arising from interacting scales of biological organization. KF Raffa. Vancouver, Canada. Nov. 11-14.

129. Entomological Society of America / Entomological Society of Canada National Meetings. 2018. Do conifers exhibit tradeoffs between their constitutive and induced chemical defenses against tree-killing bark beetles? M Howe, K Keefover-Ring, CJ Mason, K Wallin, A Yanchuk, J Zhu & KF Raffa. Vancouver, Canada. Nov. 11-14.
130. Entomological Society of America / Entomological Society of Canada National Meetings. 2018. Genetic variation in aspen phytochemical patterns mediates herbivore responses to phenological shifts. M Falk, R Lindroth, K Keefover-Ring & K. Raffa. Vancouver, Canada. Nov. 11-14.
131. Entomological Society of America / Entomological Society of Canada National Meetings. Effects of warming climate on phonological synchrony. 2018. M Jamieson, R Lindroth & K. Raffa. Vancouver, Canada. Nov. 11-14.
132. International Society of Chemical Ecology. 2019. Incorporating microbes into defense syndromes: a case of working on the margins. Mason C, Raffa K, Hoover K & Felton G. Atlanta, GA. June 2-7.
133. Entomological Society of America, National Meetings. 2020. Ecological aspects of pheromone biosynthesis and response in bark beetles. St. Louis, MO. Bentz, B, KF Raffa, K Mock & R Bracewell.
134. North Amer. Forest Insect Work Conf. Founders Presentation. 2021. Appreciating our careers as brief snapshots of forests, insects, and human values, but also an opportunity to help shape their shared trajectory. Raffa KF. 2021. May 26-28.
135. Mech, A.M., K.A. Thomas, T.D. Marsico, D.A. Herms, C.R. Allen, M.P. Ayres, K.J.K. Gandhi, J. Gurevitch, N.P. Havill, R.A. Hufbauer, A.M. Liebhold, K.F. Raffa, A.N. Schulz, D.R. Uden, and P.C. Tobin. 2021. How available data can be used to predict the impact of non-native forest insects. Society of American Foresters 2020 National Convention Proc. (Suppl. Infor.). J Forestry 119(2), pp. S87, https://doi.org/10.1093/jofore/fvab002
136. Entomological Society of America, North Central Branch Meetings, March., 2022. Comparing within-stand dynamics of threshold-limited, pulse-driven, and lower-stem insects in Wisconsin and British Columbia. Howe M, Carroll A. Aukema B & Raffa KF. Minneapolis, MN.
137. International Union of Forest Research Organizations All Division 7, Forest Health, Congress. 2022. i-Tree Pest Predictor: Challenges and triumphs using models to predict the next high-impact insect invaders in forests. Schulz, AN, NP Havill, CF Aoki, MP Ayres, KJK Gandhi, DA Herms, AM Hoover, RA Hufbauer, AM Liebhold, S Maco, TD Marsico, KF Raffa, KA Thomas, PC Tobin, DR Uden, & AM Mech. Lisbon, Portugal.
138. North American Forest Insect Workshop. 2024. Plenary Talk. Predicting impacts of novel trophic interactions driven by human transport and changing climate. K Raffa. Asheville, NC. June 24-27.

Contributed Papers

1. IX International Congress of Plant Protection, August 11, 1979: Quantitative resistance and its role in host colonization by bark beetles. K.F. Raffa & A.A. Berryman. Washington, DC.
2. Entomological Society of America, National Meetings, Nov. 27, 1979. The role of quantitative resistance in the dynamics of colonization behavior by bark beetles. K.F. Raffa & A.A. Berryman.
3. Entomological Society of America, National Meetings. Nov. 27, 1979: The critical interaction between conifer defenses and bark beetle attack. A.A. Berryman & K.F. Raffa.

4. Entomological Society of America, National Meetings, Dec. 2, 1980: The role of constitutive host chemistry and induced secondary responses in conifer resistance to bark beetles. K.F. Raffa & A.A. Berryman.
5. American Entomological Society, March 4, 1982: The role of bark beetles in the fire cycles of western forests. K.F. Raffa.
6. Entomological Society of America, National Meetings, Dec. 1982. Optimal foraging behavior by bark beetles (Coleoptera: Scolytidae). A.A. Berryman, B. Dennis, K.F. Raffa, & N.C. Stenseth.
7. Entomological Society of America, National Meetings, Dec. 1982: Chemical approaches to insecticide resistance management. J.R. Leeper & K.F. Raffa.
8. Entomological Society of America, National Meetings, Dec. 1984. Analysis of morbidity characterization in developing LD values of topical application test results. J.R. Leeper & K.F. Raffa.
9. North Central Forest Pest Workshop, Oct. 1987. Sampling methods for insects and pathogens associated with red pine decline. K. Klepzig & K.F. Raffa.
10. Entomological Society of America, National Meetings, Dec. 1987. Root weevil/microbial complexes associated with red pine decline in Wisconsin. K.F. Raffa, D. Hall, & E. Smalley.
11. North Central Branch Meeting, ESA. March 22, 1988. Ovipositional patterns of redheaded pine sawflies (*Neodiprion lecontei* [Fitch]) in a young red pine (*Pinus resinosa* Ait.) plantation. S. Codella & K.F. Raffa.
12. Symposium on Current and Future Trends in the Biological Control of Insects, Sept. 1988, Madison, WI. Chiral disparity between bark beetles and predators responding to bark beetle (Coleoptera: Scolytidae) pheromones. Poster display. K.F. Raffa & K. Klepzig.
13. Entomological Society of America, National Meetings, Dec. 1988. Deciduous vs evergreen life histories as a factor in conifer tolerance to defoliation. S. Krause & K.F. Raffa.
14. Entomological Society of America, National Meetings, Dec. 1988. Attraction of *Hylobius radicis* and *Pachylobius picivorus* to ethanol and turpentine in pitfall traps. D.W.A. Hunt & K.F. Raffa.
15. North Central Branch Meetings, ESA. March, 1989. Forest tent caterpillar preference and performance among hybrid poplar clones. D.J. Robison & K.F. Raffa.
16. Entomological Society of America North Central Branch Meetings. March, 1989. Redheaded pine sawfly performance on previously defoliated red pine. S.C. Krause & K.F. Raffa.
17. Entomological Society of America, North Central Branch meetings. March, 1989. Attraction of two pine root weevil species to varying ratios of ethanol and turpentine. L. Rieske & K.F. Raffa.
18. Aspen Symposium, July1989. Hybrid poplar productivity and suitability for the forest tent caterpillar: A framework for evaluation. D.J. Robison & K.F. Raffa.
19. North Central Forest Pest Workshop. September, 1989. Winnipeg, Canada. Larch sawfly and needlecast defoliation: Differential effects on seedling growth and insect performance. S. Krause & K.F. Raffa.
20. North Central Forest Pest Workshop. September, 1989. Winnipeg, Canada. Red pine pocket mortality: Insects, fungi, and root mortality. K.D. Klepzig, K.F. Raffa, & E. Smalley.
21. Entomological Society of America, National Meetings, Dec. 1989. Patterns of larch sawfly defoliation and effects on tree growth. S. Krause & K.F. Raffa.
22. Entomological Society of America, National Meetings, Dec. 1989. Forest tent caterpillar--poplar associations: Response to host plant tissues and extracts. D.J. Robison & K.F. Raffa.
23. Entomological Society of America, National Meetings, Dec. 1989. Red Pine Pocket Mortality--A new decline syndrome on red pine in the Lake States. K. Klepzig & K.F. Raffa.
24. Entomological Society of America, National Meetings, Dec. 1989. Host volatiles eliciting attraction of the pine root weevils, *Hylobius pales* Herbst and *H. radicis* Buchanan. S. Salom & K.F. Raffa.

25. Entomological Society of America, National Meetings, Dec. 1989. Differential responses of predators and scolytids to ipsdienol enantiomers: Implications to evolutionary biology and pest management. K.F. Raffa & K. Klepzig.
26. Entomological Society of America, National Meetings, Dec. 1989. Use of mark and recapture to assess movement and trap efficiency of pine root weevils. L.K. Rieske & K.F. Raffa.
27. Entomological Society of America, National Meetings, Dec. 1989. Use of a new phloem--based diet for studying host suitability in *Hylobius radicis*. D.W.A. Hunt & K.F. Raffa.
28. Mycological Society of America National Meetings. June 25, 1990. Fungistatic activity of extracts from red pine towards *Leptographium terebrantis*. Madison, WI. K.D. Klepzig, E.B. Smalley, & K. F. Raffa.
29. Fourth International Congress of Systematic and Evolutionary Biology, July 6, 1990. Host plant influence on defensive regurgitation by conifer sawfly larvae. S.G. Codella, Jr., & K.F. Raffa.
30. Ecological Society of America National Meetings, July 30, 1990. Effects of defoliation on growth, carbon allocation, leaf chemistry, and gas exchange rates of red pine. P.B. Reich, M.B. Walters, S.C. Krause, D. Van Der Wal, & K.F. Raffa.
31. North Central Forest Pest Workshop. Sept., 1990. Potential uses of clones in forest pest management: Examples from hybrid poplar. D.J. Robison & K.F. Raffa. Brainerd, MN.
32. North Central Forest Pest Workshop. Sept., 1990. Factors affecting pheromone trap catches of pine engravers and predators. K.F. Raffa. Brainerd, MN.
33. 1990 Conference on Thysanoptera. Oct., 1990. The life history and impact of the Introduced Basswood Thrips, *Thrips calcaratus*. L.K. Rieske & K.F. Raffa.
34. Entomological Society of America National Meetings, Dec., 1990. Development, host range, and seasonal distribution of the Introduced Basswood Thrips, a recently discovered defoliator of northern forests. L.K. Rieske & K.F. Raffa.
35. Entomological Society of America National Meetings, Dec. 1990. Interactions of *Leptographium terebrantis* and its bark beetle associates with red pine. K.D. Klepzig & K.F. Raffa.
36. Entomological Society of America National Meetings, Dec., 1990. Efficacy of conifer sawfly defensive regurgitation against wood ants in a laboratory setting. S.G. Codella, Jr., & K.F. Raffa.
37. Entomological Society of America National Meetings, Dec. 1990. Response of forest tent caterpillar and gypsy moth to genetically engineered pest resistance in poplar. D.J. Robison, & K.F. Raffa.
38. Entomological Society of America National Meetings, Dec., 1990. Maturation of the reproductive system of *Hylobius pales* and response to mates and host volatiles. G.D. Hoffman & K.F. Raffa.
39. North American Forest Insect Work Conference, March, 1991. Clonal effects on forest tent caterpillar populations. D.J. Robison & K.F. Raffa.
40. North American Forest Insect Work Conference, March, 1991. Summary of a three-year study of Red Pine Decline in Wisconsin. K.D. Klepzig, E.B. Smalley, & K.F. Raffa.
41. International Symposium on the Applications of Biotechnology to Tree Culture, Protection, and Utilization. Aug. 1991. Responses of forest tent caterpillar and gypsy moth to poplar genetically engineered with the B.t. d-endotoxin. D.J. Robison, K.F. Raffa, & B.H. McCown.
42. 1991 Conference on Thrips. Nov., 1991. *Thrips calcaratus* in Wisconsin: Seasonal life history and host impact. K.F. Raffa, D.J. Hall, W.H. Kearby, S. Katovich, & S.D. Weber.
43. Eastern Spruce Budworm Conference. Jan., 1992. Effects of transgenic Bt on spruce budworm larvae. R. Ramachandran, B.H. McCown, D.D. Ellis, & K.F. Raffa.
44. Fourth North American Symposium on Society on Resource Management. May, 1992. Plant biotechnology: Fit or misfit for sustainability in agricultural and natural resource management. B. McCown, K. Raffa, R. Ramachandran & D.D. Ellis.

45. Phytopathological Society of America, National Meetings. 1992. Host stress and resistance of red pine to staining fungi (*Leptographium* spp.) Klepzig, K.D., E.B. Smalley, & K.F. Raffa. 1992.
46. Entomological Society of America National Meetings, Dec. 1992. Chemical and visual cues influencing orientation and host location by *Thrips calcaratus* in northern deciduous forests. L.K. Rieske & K.F. Raffa.
47. Entomological Society of America, National Meetings, Dec. 1992. Constitutive and induced resistance to the forest tent caterpillar in hybrid poplar clones. D.J. Robison & K.F. Raffa.
48. Ecological Society of America, National Meetings, July 1993. Role of root invading insect-fungal complexes in host acceptance by bark beetles. K.D. Klepzig, K.F. Raffa, & E.B. Smalley.
49. Ecological Society of America, National Meetings, July 1993. Differential responses among natural enemies and prey to bark beetle pheromones. K.F. Raffa & D.L. Dahlsten.
50. Ecological Society of America, National Meetings, July 1993. Components of synchrony between *Populus* spp. budbreak and forest tent caterpillar, *Malacosoma disstria,* egg hatch. D.J. Robison & K.F. Raffa.
51. Ecological Society of America, National Meetings, July, 1993. Wood ant response to conifer sawfly larval defenses. S. Codella & K.F. Raffa.
52. Poplar Council, National Meetings. 1993. Biorational strategies for deploying pest-resistant poplars in bioenergy plantations. S. Wraith, D. Ellis, K. Raffa, K. Kleiner, G. Stanosz, & B. McCown.
53. Entomological Society of America, National Meetings, Dec. 1993. Influence of thrips-induced bud injury on subsequent foliar suitability to gypsy moths. L.K. Rieske & K.F. Raffa.
54. International Union of Forestry Research Organizations, Mechanisms of Woody Plant Defenses against Insects. April, 1994. Effects of root inhabiting insect-fungal complexes on parameters of host resistance to bark beetles. K.F. Raffa & K.D. Klepzig.
55. Entomological Society of America, North Central Branch Meetings, 1994. Response of basswood trees to defoliation by thrips. L.K. Rieske & K.F. Raffa.
56. Ecological Society of America National Meetings. Aug., 1994. 14Carbon partitioning among primary metabolite and allelochemical fractions of aspen leaves. K.W. Kleiner, R.E. Dickson, & K.F. Raffa.
57. Ecological Society of America National Meetings. Aug., 1994. Induced responses to sawfly defoliation. S.C. Krause & K.F. Raffa.
58. Ecological Society of America National Meetings. Aug., 1994. Role of root colonizing insect-fungal complexes in forest declines: Effects of belowground herbivory on host resistance to the stem-colonizing guild of red pine. K.F. Raffa & K.D. Klepzig.
59. Entomological Society of America National Meetings, 1994. Physical effects and internal cues influencing oviposition behavior by the gypsy moth egg parasitoid *Ooencyrtus kuwanae*. R.W. Hofstetter & K.F. Raffa.
60. Entomological Society of America National Meetings. 1994. Ethylene emission by American basswood in response to feeding by the introduced basswood thrips. L.K. Rieske & K.F. Raffa.
61. Entomological Society of America, National Meetings. 1995. A new bioassay to examine the effects of plant defensive compounds on wood boring insects. K.D. Klepzig, E.B. Smalley, & K.F. Raffa.
62. Western Forest Insect Work Conference. 1995. A new bioassay to examine the effects of plant defensive compounds on wood boring insects. K.D. Klepzig, E.B. Smalley, & K.F. Raffa.
63. Entomological Society of America National Meetings. Dec. 1995. Effects of jack pine budworm feeding on components of resistance against subcortical insects. K. Wallin & K.F. Raffa.

64. Entomological Society of America National Meetings. Dec. 1995. Geographic origin affects the interaction between Bt and the gypsy moth parasitoid *Cotesia melanoscela*. A. Chenot & K.F. Raffa.
65. Entomological Society of America National Meetings. Dec. 1995. Effects of thrips-induced bud injury on subsequent foliar micronutrients and gypsy moth success. L. Rieske & K.F. Raffa.
66. North Central Forest Pest Work Conference. 1995. Impacts of jack pine budworm feeding on subsequent survival, physiology, and susceptibility of jack pine. K. Wallin & K.F. Raffa.
67. North Central Forest Pest Work Conference. 1995. Genotypic-based patterns in larch growth and defoliation susceptibility. S. Krause, W. Fogal, & K.F. Raffa.
68. Second North American Forest Insect Work Conference. April, 1996. *Ips pini* aggregation pheromone: Variation as an escape from predation. San Antonio, TX. K. Hobson & K.F. Raffa.
69. Ecological Society of America National Meetings. July, 1996. Regional and seasonal shifts in bark beetle aggregation pheromones as an escape from predation. K. Hobson & K.F. Raffa.
70. North Central Forest Pest Work Conference., Oct. 1996. Bark beetle guilds attacking red pine and interspecific interactions mediated by semiochemistry. K. Hobson & K.F. Raffa.
71. North Central Forest Pest Work Conference.,. Oct. 1996. Jack pine budworm predisposing jack pine to attack by *Ips* and *Monochamus*. K. Wallin & K.F. Raffa.
72. Northeast Regional Meeting of the Animal Behaviour Society (Central Connecticut State University, New Britain, CT, 26 October). Individual and social components of wood ant response to conifer sawfly defense behavior. S.G. Codella & K.F. Raffa.
73. Entomological Society of America National Meetings. Dec. 1996. The effects of previous defoliation and nutrient availability on larch suitability to gypsy moths. J. Powell & K.F. Raffa.
74. Entomological Society of America National Meetings. Dec. 1996. Influence of population quality on the success of the gypsy moth parasitoid *Cotesia melanoscela*. A. Chenot & K.F. Raffa.
75. Entomological Society of America National Meetings, Dec. 1996. Effects of jack pine budworm defoliation on components of host resistance to subcortical insect-fungal complexes. K.F. Wallin & K.F. Raffa.
76. USDA Interagency Gypsy Moth Research Forum. 1997. Integrating natural enemy performance and forest type to enhance biological control of gypsy moth. S.C. Krause, K.F. Raffa, R.W. Hofstetter, J.J. Kruse, & A. Chenot.
77. International Entomophagous Insects Workshop. 1997. Minor alterations in pheromone stereochemistry and secondary components as a possible source of partial escape from predators. K.F. Raffa and K. Hobson.
78. Entomological Society of America National Meetings, Dec. 1997. Switching food plants by an herbivore affects the performance of a larval parasitoid: *Cotesia melanoscela* development in *Lymantria dispar* exposed to reciprocal dietary crosses. K.J. Kruse & K.F Raffa.
79. Ecological Society of America National Meetings, Aug. 1998. Impacts of forest management practices on the biodiversity of ground-dwelling beetles. S.M. Werner & K.F. Raffa.
80. Ecological Society of America National Meetings, Aug. 1998. Effect of population type and geographic origin on individual insect herbivore behavior. K.F. Wallin & K.F. Raffa.
81. Second Workshop on Bark Beetle Genetics. July 1998. Implications of genetic sources of variation in bark beetle semiochemistry to predation. K.F. Raffa.
82. North Central Forest Pest Work Conference. Sept. 1998. Applying differences between bark beetle and predator responses to pheromones for population monitoring and trap-out. B.H. Aukema & K.F. Raffa.
83. Canadian Entomological Society, National Meetings. Nov. 1998. Applying differences between bark beetle and predator responses to pheromones for population monitoring and trap-out. B.H. Aukema & K.F. Raffa.

84. North Central Forest Pest Work Conference. Sept. 1998. Effects of host tree species and chemistry on the response of *Ips pini* and its major predators to *I. pini* pheromone. N. Erbilgin & K.F. Raffa.
85. North Central Forest Pest Work Conference. Sept. 1998. Induced defenses in hybrid poplar. Effects of eliciting treatments and genotypic variation on gypsy moth development and feeding behavior. N. Havill & K.F. Raffa.
86. North Central Forest Pest Work Conference. Sept. 1998. Role of population stage in host selection by bark beetles. K. Wallin & K.F. Raffa.
87. USDA Interagency Research Forum on Gypsy Moth and other Invasive Species. Jan. 1999. Dynamics of new gypsy moth populations in Wisconsin. A. Liebhold, A. Diss, D. Schumacher, K. Raffa, A. Sharov, N. Havill, E. Luzader.
88. Consortium for Plant Biotechnology Research. March, 1999. Potentiators of microbial insecticides for biomass trees. Raffa, K.F., N. Broderick, R. Goodman, & J.Handelsman.
89. The Future of Agricultural Biotechnology Symposium. Inst. Pest & Pathogen Manag. April 1999. Broderick, N.,R. Goodman, J. Handelsman, & K.F. Raffa.
90. Fifth Eastern Old Growth Forest Conference. Duluth, MN. 1999. Effects of forest management practices on biodiversity of ground beetles. S. Werner & K.F. Raffa
91. Entomological Society of America National Meetings. 1999. Predator Responses to Specific Bark Beetle Pheromones are Differentially Mediated by Host Plant Compounds. N. Erbilgin & K.F. Raffa.
92. Entomological Society of America National Meetings. 1999 Role of genetic and environmental parameters in post-landing host selection behavior of *Ips pini* and *Dendroctonus rufipennis*. K.F. Wallin & K.F. Raffa.
93. Entomological Society of America National Meetings. 1999. Integration of biological and semiochemical control of bark beetles: Applying components of predator - prey co-evolution to minimize trap out of natural enemies B. Aukema & K.F. Raffa.
94. USDA Interagency Research Forum on Gypsy Moth and other Invasive Species. Jan. 2000. Physiological mechanisms for processing conifer terpenes in six species of Lymantriidae. J. S. Powell & K. F. Raffa.
95. USDA Interagency Research Forum on Gypsy Moth and other Invasive Species. Jan. 2000. Synergism between Zwittermicin A and *Bacillus thuringiensis* subsp. *kurstaki* against gypsy moth and its effect on the midgut microbial community. N. Broderick, R. Goodman, K. F. Raffa & J. Handelsman.
96. National Forest Health Monitoring Workshop. Feb. 2000. Lake States Basswood Decline Evaluation. S. Werner & K. F. Raffa.
97. Entomological Society of America, North Central Branch Meetings, 2000. Interacting effects of *Ips pini* and *Thanasimus dubius* densities on *Ips pini* reproduction. B. Aukema & K. F. Raffa.
98. Entomological Society of America, North Central Branch Meetings, 2000. Effects of host feeding breadth on the fates of ingested terpenoids in Lymantriidae J. S. Powell & K. F. Raffa
99. North Central Forest Pest Work Conference. 2000. Association of bark beetle predators with healthy red pine stands. N. Erbilgin & K. Raffa.
100. North Central Forest Pest Work Conference. 2000. Predation of bark beetles as they attack trees: Laboratory assays measuring reduction of pine engravers by checkered beetles. B. Aukema & K. Raffa.
101. North Central Forest Pest Work Conference. 2000. Great Lakes Basswood Decline evaluation. S. Werner & KF Raffa.
102. Entomological Society of America National Meetings. 2000. Effects of predators on the population dynamics and forest impact of the pine engraver, *Ips pini* (Coleoptera: Scolytidae). N. Erbilgin & K. F. Raffa.

103. Entomological Society of America National Meetings. 2000. Entomological Society of America National Meetings. Gypsy moth midgut microflora: Effects of diet, insect source, *Bacillus thuringiensis* subsp. *kurstaki* and zwittermicin A. N. Broderick & K.F. Raffa.
104. Entomological Society of America National Meetings. 2000. The impact of the introduced basswood thrips (*Thrips calcaratus* Uzel) on forest health in the Great Lakes Region. S. Werner & K. F. Raffa.
105. Entomological Society of America National Meetings. 2000. Within-tree impacts of *Thanasimus dubius* on the bark beetle *Ips pini* under experimentally controlled predator and herbivore densities. B. Aukema & K.F. Raffa.
106. Society for Integrative Biology Annual Meeting. 2001. The effect of feeding specificity on the fate of terpenoids in Lymantriidae (Lepidoptera). J. S. Powell & K. F. Raffa.
107. Ecological Society of America National Meetings, 2001. Consequences of a late season drought for aspen growth, foliar defenses and forest tent caterpillar growth during the following year. Kleiner, K. W., R.E. Dickson & K.F. Raffa.
108. Ecological Society of America National Meetings, 2001. Chemical ecology of generalist and specialist Lymantriidae (Lepidoptera) and terpenes of their conifer hosts. Powell, J.S., & K.F. Raffa.
109. Ecological Society of America National Meetings, 2001. Can chemical communication be cryptic? Adaptive responses of herbivores to natural enemies exploiting prey semiochemistry. K. Raffa, B. Aukema, N. Erbilgin, & K. Hobson.
110. Ecological Society of America National Meetings, 2001. Impacts of an invasive, bud-feeding thrips on forest health in the Great Lakes region. S. Werner & K. F. Raffa. Poster also shown at 2002 Western Forest Insect Work Conference.
111. Ecological Society of America National Meetings, 2001. Fungal associates of an eruptive tree-killing phloeophagous herbivore. K. Haberkern, B. Illman, R. Werner, & K. F. Raffa
112. Ecological Society of America National Meetings, 2001. Temporal and spatial Interactions among root and stem insects, fungi, and predators in declining forests. N. Erbilgin & K. F. Raffa.
113. Ecological Society of America National Meetings, 2001. Performance of an insect predator while attacking external and internal stages of an endophytic herbivore. B.H. Aukema & K.F. Raffa.
114. Ecological Society of America National Meetings, 2001. Bacterial diversity of the gypsy moth midgut, and effects of host plant on this microflora. N. Broderick, R. Goodman, J. Handelsman & K. F. Raffa.
115. Ecological Society of America National Meetings, 2001. Evaluating a critical assumption of behavioral preference tests: does the number of choices affect results? E. V. Nordheim, N. P. Havill & K. F. Raffa. Poster also shown at 2002 Western Forest Insect Work Conference.
116. Internat. Soc. Chem. Ecol. 2001. The fate of conifer terpenoids in native and introduced Lymantriid forest pests. Powell, J.S. & K.F. Raffa.
117. National Forest Health Monitoring Workshop. Feb. 2001. Lake States Basswood Decline Evaluation. S. Werner & K. F. Raffa.
118. Entomological Society of America National Meetings. 2001. Time- and gender- dependent predation of *I. pini* by *T. dubius* during a simulated host colonization sequence. B.H. Aukema & K.F. Raffa.
119. Entomological Society of America National Meetings. 2001. Impact of introduced basswood thrips on forest health in the Great Lakes region. S. Werner & K.F. Raffa.
120. International Society of Symbiosis. 2001. Effect of diet on bacterial composition of gypsy moth midgut. N. Broderick, K. F. Raffa., R. Goodman, & J. Handelsman.
121. International Union of Forestry Research Organizations. 2001. Linking individual host selection behavior to population dynamics in conifer – bark beetle interactions. K F. Raffa & K. F. Wallin.

122. Ecological Society of America National Meetings, 2002. Environmental constraints on ground dwelling beetle assemblages in old-growth and managed forests. E.F Latty, S.M. Werner, D.J. Mladenoff & K.F. Raffa.
123. Western Forest Insect Work Conference. 2002. Dose-dependent synergism and inhibition of bark beetle responses to host monoterpenes. N. Erbilgin & K.F. Raffa.
124. Western Forest Insect Work Conference. 2002. Stain fungi associated with *Dendroctonus rufipennis* and *Ips perturbatus* in Alaskan spruce forests. B. Illman, K. Haberkern, K. F. Raffa, & R. Werner.
125. International Union of Forestry Research Organizations. 2002. Krakow, Poland. Intercept panel trap (Intercept PTBB) for bark beetles and longhorn beetles. Updated design and recent field data. D. Czokajlo, J. McLaughlin, S. Teale, J. Warren, R. Hoffman, B. Hrasovec, Pernek, B. Aukema, K. Raffa, P. Kirsch, A. Mudge, J. LaBonte, F. Noguera.
126. Entomological Society of America National Meetings. 2002. Diversity of microorganisms associated with the gut of stem boring beetles. I. Delalibera, K.F. Raffa, & J. Handelsman.
127. Entomological Society of America National Meetings. 2002. Effect of host species on the attraction and reproduction of natural enemies in trees colonized by *Ips pini*. B.H. Aukema, Richards, G.R., Krauth, S.J., & K.F. Raffa
128. Society of America National Meetings. 2002. Do bluestain fungi associated with *Ips pini* (Coleoptera: Scolytidae) have adverse effects on *I. pini* development through competition for a limited resource? B.
129. Entomological Society of America National Meetings. 2002. Intercept panel trap modified for monitoring forest Cerambycidae. D. Czokajlo, J. McLaughlin, S. Teale, J. Warren, R. Hoffman, B. Hrasovec, Pernek, J. Hilszczanski, A. Kolk, B. Aukema, K. Raffa, A. Mudge, J. LaBonte, F. Noguera, P. Kirsch.
130. Society for the Study of Evolution National Meetings 2003. Phylogeography of spruce beetles (*Dendroctonus rufipennis*) in North America: distinctive mtDNA lineages associated with different host trees and possible evidence of a zone of overlap in British Columbia. L. Maroja, S. Bogdanowicz, K. Wallin, K. Raffa, & R. Harrison.
131. Society for Invertebrate Pathology. 2003. Diversity of bacteria associated with the gut of stem boring beetles (Coleoptera: Cerambycidae, Scolytidae) I. Delalibera Jr., J. Handelsman & K. Raffa
132. International Union of Forestry Research Organizations. 2003. Bark beetle biology and management: from the 1960's to the 21st century. Geographical variation in response by *Dendroctonus valens* to host volatiles in North America and China. N . Erbilgin, N . Gillette, D . Owen, K.F. Raffa, G.S. Martinez J. D. Stein & J. Sun.
133. International Union of Forestry Research Organizations. 2003. Bark beetle biology and management: from the 1960's to the 21st century. Behind the Bimodal Curve: Can we understand and manage how bark beetles erupt from denizens of ephemeral habitats to landscape engineers? K. F. Raffa, B. H. Aukema, N. Erbilgin, K. D. Klepzig, & K. F. Wallin.
134. International Union of Forestry Research Organizations. 2003. Bark beetle biology and management: from the 1960's to the 21st century. Reciprocity in bark beetle-microbial interactions. K. Klepzig, I. Delalibera, B. Kopper, & K. F. Raffa.
135. All LTER Symposium. 2003. Beetle-fungal complexes in spruce trees across sites in Alaska. Illman, B., Haberkern, K., Werner R., & K. F. Raffa.
136. Entomological Society of America National Meetings. 2003. Biology and host range of an invasive root feeding weevil (Coleoptera: Curculionidae) complex affecting northern hardwood forests. R. A. Pinski & K. F. Raffa.
137. Entomological Society of America National Meetings. 2003. Relative sources of variation in spruce beetle-fungal associations from individual through population-phase levels. B. Aukema, R. A. Werner, K. E. Haberkern, B. L. Illman, M. K. Clayton & K. F. Raffa.

138. Entomological Society of America National Meetings. 2003. Effects of diterpene acids on *Ips pini* (Coleoptera: Scolytidae) and its associated fungus. B. J. Kopper, K. D. Klepzig, B. Illman & K. F. Raffa.
139. International Boreal Forest Research Association Conference. Fairbanks, Alaska. May 2004. Spruce beetle-fungal complexes as agents of disturbance in Alaskan forests: Intrinsic and extrinsic factors affecting resilience and scale of population eruption. B. L. Illman, K. F. Raffa, R. A. Werner, & B. Aukema.
140. International Symposium on Microbial Ecology. Aug. 2004. The Microbial community of Cabbage White Butterfly larvae midguts. Robinson, C.J., C. Guan, L. Chanbusarakum, P. D. Schloss, K. Raffa, & J. Handelsman
141. Joint Western Forest Insect/Western International Forest Disease Work Conferences April 26-30, 2004, San Diego CA.. Population dynamics of spruce beetles: Implicating changes in fungal frequency at different levels of scale. B. H. Aukema, K. Haberkern, B. Illman, R. Werner, K.F. Raffa.
142. International Union of Forestry Research Organizations Meeting on forest diversity and resistance to native and exotic pest insects, 2004. Geographical variation in fungal associates and behavioral chemistry of *Dendroctonus valens*: What goes around comes around? Hanmer Springs, New Zealand. N. Gillette, N. Erbilgin, K.F. Raffa, G.S. Martinez, J.D. Stein & J. Sun.
143. American Society of Mycology Conference on Beneficial Microbes 2005. C. Guan, Isolation of a metagenomic clone from the gypsy moth bacterial community with quorum sensing activity. Lake Tahoe, NV. B.R.Borlee, L.L. Williamson, J.Ju B. Shen, , K.F. Raffa, & J. Handelsman.
144. American Society of Mycology Conference on Beneficial Microbes, 2005. The role of gut bacteria in gypsy moth larval susceptibility to *Bacillus thuringiensis* subsp. *kurstaki*. Lake Tahoe, NV. Broderick, N.,K.F. Raffa, & J. Handelsman.
145. American Society of Mycology Conference on Beneficial Microbes, 2005. Gut microflora of a wood-boring invasive insect, the emerald ash borer. Lake Tahoe, NV. A. Vasanthakumar, J. Handelsman, & K.F. Raffa.
146. American Society of Mycology Conference on Beneficial Microbes, 2005. Invasion of the Cabbage White Butterfly midgut microbial community. Lake Tahoe, NV. Robinson, C. J., C. Guan, L. Chanbusarakum, P. D. Schloss, K. F. Raffa and J. Handelsman.
147. International Society of Chemical Ecology. 2005. Geographic variation in response of *Dendroctonus valens* to host volatiles of *Pinus* spp.: a holarctic perspective. Washington, DC. N. Erbilgin, N.E. Gillette, J.D. Stein, D.R. Owen, R. Campos, L.D. Merrill, K.F. Raffa, S. Mori & D.L. Wood.
148. Southern Forest Insect Work Conference,. 2005. Beetle-bacteria interactions. Austin, TX. Klepzig K.D., Vasanthakumar, A. Cardoza Y., Currie C & K. F. Raffa.
149. Workshop on Recent Advances in Modelling Spatio-Temporal Data, May 25-26, 2005. Spatio-temporal models for red pine decline. Southampton, UK. Møller, J., Zhu, J., Rasmussen, J.G., Aukema, B.H., & K.F. Raffa.
150. Emerald Ash Borer Research and Technology Development Meeting. 2005. Gut microbial flora of the emerald ash borer, *Agrilus planipennis Fairmaire*, Pittsburgh, PA. A. Vasanthakumar, J. Handelsman, & K. Raffa.
151. Annual Gypsy Moth Review. 2005. Entomophaga and nuclear polyhedrosis virus along the western leading edge of gypsy moth. A. Hajek, C. Nielsen, A. Diss, & K. Raffa. Conshohocken, PA.
152. Entomological Society of America National Meetings. 2005. Endophytic insect deploys bacteria in oral secretions to defend against gallery-invading fungi. Fort Lauderdale, FL. Cardoza, Y. J., Klepzig, K.D. & K.F. Raffa.
153. Entomological Society of America National Meetings. 2005. Life history parameters of recently established gypsy moth *Lymantria dispar* (Lepidoptera: Lymantriidae) populations in

relation to stand density of Wisconsin oak forests. Fort Lauderdale, FL. R. A. Hoffman & K. F. Raffa.

154. Entomological Society of America National Meetings. 2005. Exploitation of microbial symbionts of bark beetles by parasitic wasps. Fort Lauderdale, FL. C.K. Boone, D.L. Six, S. Krauth, & K.F. Raffa.
155. Entomological Society of America National Meetings. 2005. Orientation of Cottonwood Leaf Beetles (Coleoptera: Chrysomelidae) to insect and host odors. A P. Kendrick & K.F. Raffa.
156. Entomological Society of America National Meetings. 2005. Ecology and biology of invasive root-feeding weevils in the northern hardwood ecosystem. D. R. Coyle, R A. Pinski, A. L. Friend, W. J. Mattson & K. F. Raffa.
157. International Society of Microbial Ecology. 2006. Midgut bacteria required for *Bacillus thuringiensis* insecticidal activity. Vienna, Austria. Broderick, N.A., K. F. Raffa, & J. Handelsman
158. North American Forest Insect Work Conference, May, 2006. Gut microflora of a wood-boring invasive insect, the emerald ash borer. Asheville, NC. A. Vasanthakumar, J. Handelsman, & K.F. Raffa.
159. North American Forest Insect Work Conference, May, 2006. The role of gut bacteria in gypsy moth larval susceptibility to *Bacillus thuringiensis* subsp. *kurstaki*. Broderick, N., K.F. Raffa, & J. Handelsman. Asheville, NC.
160. North American Forest Insect Work Conference, May, 2006. Critical Issues in Forest Entomology 1 A Panel Discussion. Tobin, P., J. Guldin, K. Raffa, A. Carroll, S. Salom, and M. Wagner. Asheville, NC.
161. Third Bark Beetles Genetics Work Conference, May, 2006. Phylogeography of *Dendroctonus rufipennis* based on mtDNA and microsatellites. K. F. Raffa, K. L. Maroja, S. Bogdanowicz, K. Wallin, & R. Harrison. Asheville, NC.
162. Third Bark Beetles Genetics Work Conference, May, 2006. Gut bacteria of bark beetles and wood borers. A. Vasanthakumar, Y. Cardoza, I. Delalibera, P. Schloss, C. Currie, J. Handelsman, K. Klepzig, & K. F. Raffa. Asheville, NC.
163. Assoc. Gnotobiotics, Society for Microbial Ecology of Disease, June, 2006., Midgut bacteria required for *Bacillus thuringiensis* activity. N. A. Broderick, K. F. Raffa & J. Handelsman, St. Louis, MO.
164. Symbiosis Symposium, June, 2006., Symbioses in conifer bark beetle systems. Madison WI. K. F. Raffa & J. Handelsman.
165. *Ceratocystis* and *Ophiostoma*: Expanding Frontiers. Aug. 2006. New perspectives on the southern pine beetle-microbial symbiosis. Brisbane Australia. Klepzig, K. C. Yuceer, Young-Min Kang, O. Pechanova, Y. Cardoza, A. Vasanthakumar & K. Raffa
166. Entomological Society of America National Meetings. 2006. Does the gypsy moth virus Gypchek, and its carrier, adversely affect the endangered Karner Blue butterfly and pollinators of the endangered prairie fringed orchid? Indianapolis, IN. M. Yanek & K.F. Raffa.
167. Entomological Society of America National Meetings. 2006. Traveling through time and space on wings of beetles: A tripartite insect-fungi-nematode association. Indianapolis, IN. Y. J. Cardoza, S. Paskewitz, & K. F. Raffa.
168. Entomological Society of America National Meetings. 2006. Ecology of invasive weevils in a northern hardwood forest Indianapolis, IN. D. R. Coyle, A. L. Friend, W. J. Mattson & K. F. Raffa.
169. Entomological Society of America National Meetings. 2006. Landscape ecology of mountain pine beetle (*Dendroctonus ponderosae*) in British Columbia, Canada: Are land tenure and outbreak epidemiology linked? Indianapolis, IN. B. Aukema, A. Carroll, J. Zhu, K. F. Raffa, T. Sickley & S. Taylor

170. Entomological Society of America National Meetings. 2006. The role of midgut bacteria in *Bacillus thuringiensis*-induced mortality in Lepidoptera. Indianapolis, IN. N. A. Broderick, M. D. McMahon, J. Handelsman, & K. F. Raffa.
171. Gordon Conference on Plant-Herbivore Interactions, Feb. 2007. Ecology and impact of invasive root weevils in a northern hardwood forest. Ventura, CA. D.R. Coyle, W.J. Mattson, A.L. Friend, & K.F. Raffa.
172. Gordon Conference on Plant-Herbivore Interactions, Feb. 2007. Raffa, K, Adams, A, Cardoza, Y, Currie, C, Delalibera, I, Klepzig, K, & A. Vasanthakumar. Role of Symbiotic Bacteria in Host Plant Utilization by Bark- and Wood- Boring Beetles: Microscale Processes Mediate Landscape-scale Patterns. Ventura, CA.
173. Western Forest Insect Work Conference, March 2007. Ecology and Impact of Invasive Root Weevils in a Northern Hardwood Forest. Boise, ID. D.R. Coyle, W.J. Mattson, A.L. Friend, & K.F. Raffa
174. Western Forest Insect Work Conference, March 2007. Raffa, K, Adams, A, Cardoza, Y, Currie, C, Delalibera, I, Klepzig, K, & A. Vasanthakumar. Role of Symbiotic Bacteria in Host Plant Utilization by Bark- and Wood- Boring Beetles: Microscale Processes Mediate Landscape-scale Patterns. Boise, ID.
175. Ecological Society America National Meetings, Aug 2007. Ecology and Impact of Invasive Root Weevils in a Northern Hardwood Forest. San Jose, CA. D.R. Coyle, W.J. Mattson, A.L. Friend, & K.F. Raffa
176. National Gypsy Moth Techn. Meeting. 2007. Dispersal of gypsy moth pathogens into areas newly colonized by gypsy moth. Annapolis, MD. Hajek, A.E., J. Hannam, C. Nielsen, A. Diss-Torrance, K. Raffa & P. Tobin
177. Entomological Society of America National Meeting. 2007. Quantifying sources of variation in complex semiochemical signals at multiple levels of scale. San Diego, CA, BH Aukema., J Powell & KF Raffa.
178. Entomological Society of America National Meeting. 2007. What are invasive weevils doing to northern hardwood forests? San Diego, CA, D.R. Coyle, W.J. Mattson, A.L. Friend, & K.F. Raffa
179. Entomological Society of America National Meeting. 2007. Dispersal of gypsy moth (*Lymantria dispar*) pathogens to newly established host populations. San Diego, CA, A. E. Hajek, P, Tobin, J. J. Hannam, C. Nielsen, A. Diss-Torrance & K. Raffa,
180. Entomological Society of America National Meeting. 2007. Space-time interactions between gypsy moth (*Lymantria dispar*) and associated entomopathogens in newly-established populations. San Diego, CA, P. C. Tobin, Ann E. Hajek, L. M. Blackburn, Joshua J. Hannam, A. Diss-Torrance, & K. F. Raffa.
181. Entomological Society of America National Meeting. 2007. Preference, fecundity and mortality of the weevil *Polydrusus sericeus* feeding on trees fumigated with elevated carbon dioxide and ozone. San Diego, CA, M Hillstrom. D Coyle, L. Vigue, K. F. Raffa & R. Lindroth.
182. International Association of Landscape Ecologists. 2008. Interactions between disturbance agents in conifer forests: fire-injured lodgepole pine as a potential reservoir for mountain pine beetles (*Dendroctonus ponderosae* Hopkins). E. Powell & K.F. Raffa.
183. Interagency Meeting on Invasive Species. 2008. Dispersal of gypsy moth (*Lymantria dispar*) pathogens to newly established host populations. Annapolis, MD. A. E. Hajek, P, Tobin, J. J. Hannam, C. Nielsen, A. Diss-Torrance & K. Raffa,
184. Ecological Society of America National Meetings Aug. 2008. Bacterial associates of bark beetles: The little dictators of insect-fungal interactions that drive landscape-level processes. Milwaukee, WI. A.S Adams, K. D Klepzig & K. F Raffa.

185. Ecological Society of America National Meetings Aug. 2008. Feedback between invasive belowground herbivores and habitat composition in northern hardwood ecosystems. Milwaukee, WI . D Coyle, W. Mattson, A. Friend & K. F Raffa.
186. Entomological Society of America National Meetings. 2008. Fire injury increases both host susceptibility and competitor load for the mountain pine beetle *Dendroctonus ponderosae* (Hopkins): Implications to population dynamics and outbreaks. Reno, NV. E. N. Powell & K.F. Raffa,
187. Entomological Society of America National Meetings. 2008. Feedback between invasive belowground herbivores and habitat composition in northern hardwood ecosystems. Reno, NV. D. R. Coyle, W. J. Mattson, A. L. Friend, & K. F. Raffa.
188. Entomological Society of America National Meetings. 2008. Using semantic web technologies to tie together disparate data about species. Reno, NV. P. J. DeVries, D. K. Young, K. Raffa, & L. Bartholomay.
189. Entomological Society of America National Meetings. 2008. Dispersal and edge behavior in a bark beetle and its predator. Reno, NV. A. Costa, J. D. Reeve, K. F. Raffa & A. Min.
190. The Great Lakes Bioenergy Research Center Annual Meeting. 2008. Cellulose-degrading microbial symbionts of the woodwasp, *Sirex noctilio* A. S. Adams, M. S. Jordan, C. R. Currie & K. F. Raffa.
191. CSRS Awardee Workshop. Nov. 2008. How do interactions among microbial symbionts affect the host and range expansions of an eruptive forest insect? K. F. Raffa, C. R. Currie, A. S. Adams, N. Erbilgin & B. H. Aukema. Reno, NV.
192. National Forest Health Monitoring Evaluation Workshop. 2009. Evaluating and monitoring mountain pine beetle infestation in fire-injured ponderosa and lodgepole pine stands. A. Lerch, B. Bentz, D. Blackford, & K. Raffa. Savannah, GA.
193. Professional Pest Management Association of British Columbia. 2009. Forest insects in a changing environment: Same rules, different playing field. B. S. Lindgren & K. F. Raffa. Burnaby, BC. Feb 17.
194. North American Forest Ecology Workshop. 2009. Bentz B, G Schen, C Boone & K Raffa. Mountain pine beetle outbreak dynamics in high elevation forests: Influence of climate change and tree chemistry. Logan, UT, June 22.
195. International Union of Forestry Research Organizations. 2009. Bentz B, G Schen, C Boone & K Raffa. Mountain pine beetle outbreak dynamics in high elevation forests: Influence of climate change and tree chemistry. Cortina d'Ampezzo, Italy, Aug 31-Sept 5.
196. International Union of Forestry Research Organizations. 2009. Raffa KF, Aukema BH, Bohlmann J, Boone, CK & Carroll AL You don't know what you've got 'til it's gone: Efficacy of tree defense chemistry varies with bark beetle population density. Cortina d'Ampezzo, Italy, Aug 31-Sept 5.
197. International Union of Forestry Research Organizations. 2009. Powell E N & K. F. Raffa. Does wildfire lead to subsequent mountain pine beetle outbreaks? Separating the roles of host resistance, host suitability, and interspecific competition in fire-injured and neighboring lodgepole pines. Jackson Hole, WY Sept. 27-Oct 2.
198. International Union of Forestry Research Organizations. 2009. K F Raffa, B H Aukema, J Bohlmann, C K Boone, & A L Carroll. From critical driver to unrealized potential: population-dependent manifestation of host defense in conifer-bark beetle interactions Jackson Hole, WY Sept. 27-Oct 2.
199. International Union of Forestry Research Organizations. 2009. Boone C, Bentz B, E Powell E & K F Raffa. Comparison of whitebark and lodgepole pine defenses against mountain pine beetle. Jackson Hole, WY Sept. 27-Oct 2.
200. International Union of Forestry Research Organizations. 2009. Role of symbiotic bacteria in the reproductive success of bark beetles A Adams, S. Adams, C. Boone, C. Currie, J. Bohlmann, N. Gillette, & K. F. Raffa.. Jackson Hole, WY Sept. 27-Oct 2.

201. International Union of Forestry Research Organizations. 2009. Bentz B, G Schen, C Boone & K Raffa. Mountain pine beetle outbreak dynamics in high elevation forests: Influence of climate change and tree chemistry. Jackson Hole, WY Sept. 27-Oct 2.
202. Workshop for the Synthesis on the Impacts of Disturbance on the North American Carbon Budget. 2009, Hicke, J. KF Raffa. Reston, Virginia. Oct. 28-30.
203. American Geophysical Union Fall Workshop. 2009. The effects of insect outbreak disturbances on the North American Carbon Budget. 2009, Hicke, JA, R Hall, C Allen, A Desai, M Dietze, EH Hohh, D Moore, KF Raffa, R Sturrock, J Vogelman. San Francisco CA . Dec 14-18.
204. National Forest Health Monitoring Evaluation Workshop. 2010. Evaluating and monitoring mountain pine beetle infestation in fire-injured ponderosa and lodgepole pine stands. A. Lerch, B. Bentz, D. Blackford, & K. Raffa. Albuquerque, NM.
205. CSRS Awardee Workshop. Dec. 2010. How do interactions among microbial symbionts affect the host and range expansions of an eruptive forest insect? K. F. Raffa, C. R. Currie, A. S. Adams, N. Erbilgin & B. H. Aukema. Washington, DC.
206. Western Forest Insect Workshop. 2010. Responses of mountain pine beetle to fire injured trees. A. Lerch, B. Bentz, D. Blackford & K. Raffa. Flagstaff, AZ.
207. International Horticulture Congress. 2010. The presence, population structure, and potential effects of endophytic bacteria in the American cranberry (*Vaccinium macrocarpon* Ait.). CJ Mason, EL Zeldin, S Adams, C Currie, K Raffa & BH McCown. Lisbon, Portugal Aug 22-27.
208. International Union of Forestry Research Organizations. 2010. Constitutive monoterpenes and rust susceptibility in jack pine. M Michelozzi & KF Raffa. Florence Italy, May 3-6.
209. Western Forest Insect Workshop. 2010. Effects of bacteria, fungi, and their combinations on mountain pine beetle reproduction in lodgepole, jack, and lodgepole-jack hybrid pine trees. J Ariss, A Adams, BH Aukema, C Currie, KF Raffa & N Erbilgin. Flagstaff, AZ.
210. Entomological Society of America National Meeting. 2010. Bacteria associated with the mountain pine beetle degrade components of tree defensive chemistry. Adams AS, Boone CK, Adams SM, Bohlmann J, Currie CR, Erbilgin N, Aukema BH, Raffa KF. San Diego, CA.
211. Entomological Society of America National Meeting. 2010. Response of mountain pine beetle populations to fire-injured lodgepole and ponderosa pines: Implications to disturbance interactions and bark beetle outbreaks. A Lerch, B Bentz, D Blackford, & KF Raffa. San Diego, CA.
212. Entomological Society of America National Meeting. 2010. Role of host plant and salivary bacteria in gypsy moths interaction of with poplar. C Mason & KF Raffa. San Diego, CA.
213. Entomological Society of America National Meeting. 2010. Characterization of mite communities phoretic on *Ips pini* (Say) in Wisconsin. J. Pfammatter & KF Raffa. San Diego, CA.
214. Entomological Society of America National Meeting. 2010. Bacterial communities associated with mountain pine beetles colonizing lodgepole pine and lodge pole-jack pine hybrids: A potential role in a climate-driven expansion into naïve hosts? S. M. Adams, A. S. Adams, N. Erbilgin, C. R. Currie, B. Aukema, & K. F. Raffa. San Diego, CA.
215. American Geophysical Union Fall Workshop. 2010. The impacts of biotic disturbances on carbon budgets in North American forests. Hicke, JA, R Hall, C Allen, A Desai, M Dietze, EH Hohh, D Moore, KF Raffa, R Sturrock, J Vogelman . Dec. 13-17, San Francisco CA.
216. National Forest Health Monitoring Evaluation Workshop. 2011. Predicting mountain pine beetle (*Dendroctonus ponderosae*) attack and delayed tree mortality in fire-injured lodgepole (*Pinus contorta*) and ponderosa (*P. ponderosa*) pines. A. Lerch, B. Bentz, D. Blackford, & K. Raffa.
217. International Society of Chemical Ecology. 2011. Host tree selection behaviour reflects outbreak trajectory of mountain pine beetle. B Aukema, Brian, J Koopmans, C Boone, K Raffa, J Bohlmann & A Carroll. Vancouver, BC.

218. International Society of Chemical Ecology. 2011. Chemical Ecology and Climate Change: Insect-plant interactions in a future climate. E Schwartzberg, P Reich, K Raffa & R Lindroth. Vancouver, BC.
219. Emerald Ash Borer Research & Technology Development Meeting. 2011. Attraction of introduced & native *Spathius* spp to host-related cues. T Johnson, J Lelito & KF. Raffa. Wooster, OH.
220. Entomological Society of America National Meetings. 2011. A genetic study of eastern subterranean termite populations in Wisconsin using amplified fragment length polymorphism Arango RA, F Green DA Marschalek, ME Berres & K Raffa. Nov 13-16, Reno, NV.
221. Entomological Society of America National Meetings. 2011. Contending with an ephemeral resource; transport strategies of phoretic mites in Wisconsin red pine stands. J. Pfammatter & KF Raffa. Nov 13-16, Reno, NV.
222. Ecological Society of America, National Meetings, Aug 2012. Altered phenological synchrony in a warmer climate: forest tent caterpillars at B4Warmed. E.G. Schwartzberg, Entomology, K.F. Raffa, P.B. Reich & R.L. Lindroth. Portland, OR.
223. Upper Midwest Invasive Species Conference, Oct. 2012. Post-establishment, pre-outbreak dynamics of gypsy moth in Northern Wisconsin. R Gray, P Tobin, R Murphy & K Raffa. LaCrosse, WI.
224. National Forest Health Monitoring Evaluation Workshop. 2012. Predicting mountain pine beetle (*Dendroctonus ponderosae*) attack and delayed tree mortality in fire-injured lodgepole (*Pinus contorta*) and ponderosa (*P. ponderosa*) pines. A. Lerch, B. Bentz, D. Blackford, & K. Raffa.
225. Entomological Society of America National Meeting. 2012. Catching the right flight: Cues eliciting attachment and detachment behaviors by mites phoretic on the pine engraver, Ips pini (Say). J Pfammatter & KF Raffa. Knoxville, TN.
226. Entomological Society of America National Meeting. 2012. Maternal and dietary source influence bacteria associated with gypsy moth (*Lymantria dispar*). C Mason & KF Raffa. Knoxville, TN
227. Entomological Society of America National Meeting. 2012. Effects of simulated climate warming and population source on synchrony of forest tent caterpillar egg hatch and host leaf phenology. J Uelmen, EG Schwartzberg, RL Lindroth & KF Raffa. Knoxville, TN.
228. Entomological Society of America National Meeting. 2012. Parasitoids and associated insects emerging from trees colonized by native *Agrilus* in Wisconsin. TD Johnson, S Krauth, JP Lelito & KF Raffa. Knoxville, TN.
229. Gordon Conference on Plant-Herbivore Interactions. March 2013. Foliar bacteria help structure gypsy moth midgut bacterial communities and interact with phenolic glycosides to affect insect performance. C. Mason, J. Coutre, P. Townsend & KF Raffa. Ventura, CA.
230. Gordon Conference on Plant-Herbivore Interactions. March 2013. Consequences of climate warming for plant-herbivore interactions. M Jamieson, KF Raffa, EG Schwartzberg, PB Reich & RL Lindroth. Ventura, CA.
231. Northeast Natural History Conference. April 2013.Climate-induced phenological asynchrony between forest tent caterpillars and their host trees. Schwartzberg E, Raffa KF, Jamieson M, Lindroth RL & Reich PB. Springfield MA.
232. American Wood Protection Assoc. Nat. Meetings. 2013. Mechanisms of termite spread in Wisconsin and potential consequences as a result of changing climate trends. R.A. Arango. RA, F. Green, III, G.R. Esenther, D.A. Marschalek, M.E. Berres & K.F. Raffa. Honolulu, HI
233. Pacific Northwest Climate Science Conference, 2013. Understanding the influence of climate on mountain pine beetle outbreaks in whitebark pine forests. Buotte PC, JA Hicke, HK Preisler & KF Raffa, Sept 4-6. Portland, OR.

234. International Union of Forest Research Organizations. 2013. Detoxification of plant defense compounds by bacterial associates of bark beetles and folivores. Raffa K, J Bohlmann, C Boone, K Keefover-Ring & C Mason. Banff, Alberta, Canada
235. International Union of Forest Research Organizations. 2013. Understanding the influence of climate on mountain pine beetle outbreaks in whitebark pine forests. Buotte PC, JA Hicke, HK Preisler & KF Raffa,. Banff, Alberta, Canada.
236. Entomological Society of America National Meeting. 2013. Cues eliciting attachment and detachment behaviors of mites phoretic on the pine engraver, *Ips spp*. J Pfammatter & KF Raffa. Austin, TX.
237. Entomological Society of America National Meeting. 2013. Collateral advantage: Ingestion of foliar bacteria augments herbivore tolerance of plant defense chemicals C Mason & KF Raffa. Austin, TX.
238. Entomological Society of America National Meeting. 2013. Insect population source and temperature influence synchronicity of forest tent caterpillars with host plants: Incorporating dispersal potential into climate change predictions. J Uelmen, P. Reich, EG Schwartzberg, P. Tobin, RL Lindroth & KF Raffa. Austin, TX.
239. Entomological Society of America National Meeting. 2013. Responses of two parasitoids of emerald ash borer, *Agrilus planipennis Fairmaire*, the introduced *Spathius agrili* Yang, and native *Spathius floridanus* Ashmead, to volatile host-associated cues. TD Johnson, JP Lelito & KF Raffa. Austin, TX.
240. Entomological Society of America National Meeting. 2013. Simulated climate warming alters host tree quality for Forest Tent Caterpillar. M Jamieson, EG Schwartzberg, PB Reich KF Raffa, & RL Lindroth. Austin, TX.
241. Entomological Society of America, North Central Branch Meetings, 2014. Parasitoids and associated insects emerging from trees colonized by native *Agrilus* in Wisconsin TD Johnson, SJ Krauth, J Lelito & KF Raffa. DesMoines, IA.
242. Western Forest Insect Work Conference. 2014. Whitebark pine and mountain pine beetle outbreaks in the western United States: Quantifying the influence of climate. JA Hicke, PC Buotte, HK Preisler & KF Raffa. Sacramento, CA.
243. Southern Forest Insect Work Conference, July, 2014--Symposium on Plant-Insect Interactions: Trap lure blend for Monochamus spp. (Cerambycidae) in pine forests of Canada and the USA. , D.R., CM Crowe, KJ Dodds, A Eglitis, CJ Fettig, LD Galligan, KE Gibson, RW Hofstetter, SJ Kegley, DW Langor, AE Mayfield III, AS Munson, TM Poland, & KF Raffa. Charleston, SC
244. International Society of Chemical Ecology. 2014. Genotypic variation in tree response to elevated temperature and defoliation. Jamieson MA, Raffa K., Reich PB & Lindroth RL Urbana, IL.
245. International Society of Chemical Ecology. 2014. Parasitoids and associated insects emerging from trees colonized by native *Agrilus* in Wisconsin. TD Johnson, SJ Krauth, J Lelito & KF Raffa Urbana, IL.
246. Ecological Society of America National Meetings. 2014. Climate change, mountain pine beetles, and whitebark pine forests of the Greater Yellowstone Ecosystem. PC Buotte, JA Hicke, HK Preisler & KF Raffa. Sacramento, CA.
247. DOI National Climate Change and Wildlife Science Center invited webinar, 2014. Climate change, mountain pine beetles, and whitebark pine forests of the Greater Yellowstone Ecosystem. Buotte, P. C, J. A. Hicke, H. K. Preisler, K. F. Raffa. July 22, Reston, VA
248. 12the Biennial Scientific Conference on the Greater Yellowstone Ecosystem. 2014. Climate change, mountain pine beetles, and whitebark pine forests of the Greater Yellowstone Ecosystem. Buotte, P. C., J. A. Hicke, H. K. Preisler, K. F. Raffa October 8, Mammoth Hot Springs, WY.

249. Pacific Northwest Climate Science Conference, 2014. Threats to Whitebark Pine: Increasing our Understanding of Mountain Pine Beetle Outbreaks. Hicke JA, Renkin R, Buotte PC, HK Preisler & KF Raffa, Sept 4-6. Seattle, WA.
250. International Union of Forest Research Organizations, World Congress. 2014. Belowground herbivory in red pine stands initiates a trophic cascade that increases abundance of Lyme disease vectors. Coyle DR, Murphy MW, Paskewitz SM, Orrock JL, Lee X, Murphy RJ, McGeehin MA, & KF Raffa. Salt Lake City, UT.
251. Entomological Society of America, North Central Branch Meeting. 2014. Parasitoids Emerging from Trees Colonized by Native *Agrilus* in Wisconsin. TD Johnson, SJ Krauth, M Gates, J Huber, NF Johnson, I Míko, J Strazanac, J Woolley, R Zuparko & KF Raffa. DesMoines, IA.
252. Entomological Society of America, National Meetings. 2014. Responses of two parasitoids, the exotic *Spathius agrili* Yang and the native *Spathius floridanus* Ashmead, to volatile cues associated with the emerald ash borer, *Agrilus planipennis* Fairmaire. Johnson, TD, JP Lelito, & KF Raffa. Portland, OR.
253. Entomological Society of America, National Meetings. 2014. Genotype, temperature, and defoliation interact to influence tree defense and growth rates. Jamieson, MA, KF Raffa, RL Lindroth, P. Reich & E Kruger. Portland, OR.
254. Entomological Society of America, National Meetings. 2014. The effect of two commercial baits on bacterial community in the termite gut. Arango, RA & KF Raffa. Portland, OR.
255. Entomological Society of America, North Central Branch Meetings. 2015. Evaluation of the potential of establishment of three introduced parasitoids of emerald ash borer (Coleoptera: Buprestidae) in Wisconsin, Johnson, TD, JP Lelito, & KF Raffa. Manhattan, KS.
256. Upper Midwest Invasive Species Conference. 2014. Response of natural enemies to mountain pine beetle pheromone in Wisconsin. A Krause, J Pfammatter & K Raffa. Duluth, MN.
257. Ecological Society of America National Meetings. 2015. Rapid induction of multiple terpenoid groups by ponderosa pine in response to bark beetle-associated fungi. K Keefover-Ring, A Trowbridge, CJ Mason & KF Raffa. Baltimore, MD
258. International Union of Forest Research Organizations. 2015. Even dwarfs started small: Low density bark-beetle populations - the seeds of invasions and outbreaks?. Grégoire, J-C, Stephen FM, Carroll A, & KF Raffa. Bariloche, Argentina.
259. Phytochemical Society of America. 2015. Responses of two parasitoids of emerald ash borer, *Agrilus planipennis Fairmaire*, the introduced *Spathius agrili* Yang, and native *Spathius floridanus* Ashmead, to volatile host-associated cues. TD Johnson, JP Lelito & KF Raffa.. Urbana, IL.
260. North Central Forest Pest Work Conference. 2015. Bacterial communities associated with the red turpentine beetle and their potential functions. M Howe, C Mason & KF Raffa. Menominee, WI.
261. North Central Forest Pest Work Conference. 2015. How defoliation of aspen affects host tree phenology. M Falk, R Lindroth, & KF Raffa. Menominee, WI.
262. North Central Forest Pest Work Conference. 2015. Seasonal and regional distribution of nitidulid vectors of oak wilt. S Jagemann, J Juzwik & KF Raffa. Menominee, WI.
263. 13th Biennial Conference of Science & Management on the Colorado Plateau & Southwest Region. Bark beetle outbreaks and drought: Causes of widespread tree mortality in the Southwest. Hicke JA, Anderegg WRL, Allen CD, Stephenson NL & Raffa KF. Oct. 5-8. Flagstaff, AZ
264. Entomological Society of America, National Meetings. 2015. Climate change effects on tree-insect interactions. MA Jamieson, RL Lindroth, KF Raffa & P Reich. Minneapolis, MN.
265. Entomological Society of America, National Meetings. 2015. Antimicrobial activity of Actinobacteria isolated from the guts of subterranean termites. RA Arango, C Carlson, CR Currie, F Green III & KF Raffa. Minneapolis, MN.

266. Entomological Society of America, National Meetings. 2015. Phenological shifts in trembling aspen (*Populus tremuloides*) one year after defoliation by the forest tent caterpillar (*Malacosoma disstria*). M Falk, J Donaldson, M Stevens, KF Raffa & RL Lindroth. Minneapolis, MN.
267. USDA Interagency Research Forum on Invasive Species. Jan. 2016. Building tomorrow's forests: Integrating host resistance into long-term management of select tree-killing invasive pests. Showalter D, Smith J, Raffa KF, Sniezko R, Adams D, Herms DA, Liebhold A & Bonello P.
268. North American Forest Insect Work Conference. 2016. Potential population drivers of two pine engravers: *Ips pini* and *Ips grandicollis.* Howe MC, Zhu J, Aukema BH & Raffa KF. May 31-June 3. Washington DC.
269. North American Forest Insect Work Conference. 2016. Seasonal and regional distributions and frequencies of association with *Ceratocysytis fagacearum* of the major vectors, and their associated phoresy rates, for the oak wilt fungus, *Ceratocystis fagacearum,* in Wisconsin. Jagemann SM, Jeswik J, Tobin P & Raffa KF. May 31-June 3. Washington DC.
270. North American Forest Insect Work Conference. 2016. Phytochemical patterns vary among trembling aspen genotypes during leaf expansion. Michael Falk, Rick Lindroth, Ken Raffa. May 31-June 3. Washington DC.
271. IUFRO Regional Congress for Asia and Oceania 2016. Development of tree resistance as a primary response to established invasions by tree killing forest pathogens and insects. D Showalter, J Smith, K Raffa, R Sniezko, DA Herms, A Liebhold, P Bonello.
272. 25th International Congress of Entomology. 2016. Comparison of two release methods for establishing *Oobius agrili* (Hymenoptera: Encyrtidae), the introduced egg parasitoid of *Agrilus planipennis* (Coleoptera: Buprestidae), in Michigan. Petrice TR, Ravlin WF, Bauer LS, Poland TM, Raffa KF & McCullough DG.Sept 25-30, Orlando, FL.
273. 25th International Congress of Entomology. 2016. Looking for black and white in the grey: Variation in invasion success and management challenges in a global community. Mech AM, Tobin PT, Marsico TD, Thomas KA, Herms DA, Allen CR, Ayres MP, Gandhi KJK, Gurevitch J, Havill N, Hufbauer R, Liebhold A, Raffa K, Raupp M & Schulz A. 2016 Sept. 25-30. Orlando, FL
274. Society of American Foresters National Meeting. 2016. Seasonal and regional distributions of oak wilt vectors and their phoresy rates in Wisconsin. Jagemann SM, Juzwik J, Tobin P & Raffa KF. Nov. 2-6. Madison, WI.
275. Gordon Conference on Plant-Herbivore Interactions. Feb. 2017. Rapid phytochemical changes following trembling aspen budbreak structure windows of vulnerability for gypsy moth. M. Falk, RL Lindroth, and KF Raffa. Ventura, CA.
276. Western Forest Insect Work Conference. 2017. Bacteria associated with pine engravers degrade tree defense compounds. M. Howe & Raffa KF. Jackson Hole, WY.
277. Ecological Society of America National Meetings. 2017. Effects of warming and defoliation on tree physiology, growth, and defense. Jamieson MA, KF Raffa, PB Reich, EL Kruger, R Kennedy & RL Lindroth. Portland, OR.
278. Ecological Society of America National Meetings. 2017. Predicting the Impact of Non-native Specialist Insects Feeding on North American Host Plants. A Mech , P Tobin, T Marsico, K Thomas, D Herms, CR Allen, M Ayres, K Gandhi, J Gurevitch. N Havill, A Hoover, R Hufbauer, A Liebhold, K Raffa, M Raupp, A Schulz & D Uden. Portland, OR.
279. Ecological Society of America National Meetings. 2017. Temperature and herbivory interact to increase volatile organic compound emission in *Populus tremuloides.* Keefover-Ring K, M Jamieson, H Smaby, KF Raffa, PB Reich & RL Lindroth. Portland, OR.
280. Northwest Climate Conference. 2017. Mechanistic modeling of bark beetle outbreaks to assess the influences of climate change. Hicke JA, Buotte PC & KF Raffa. Tacoma, WA.

281. International Union of Forest Research Organizations. 2017. Tree resistance as a primary tool for managing forest pathogen and insect invasions in defense-free space. Showalter D, Smith J, Raffa KF, Sniezko R, Adams D, Herms DA, Liebhold A & Bonello P. Sept,19-22, Freiburg, Germany.
282. International Union of Forest Research Organizations. 2017. Rapid phenological changes in foliar chemistry impact gypsy moth performance: Implications to altered synchrony induced by warming climate. Falk M, Lindroth, RL & Raffa KF. Sept,19-22, Freiburg, Germany.
283. Entomological Society of America, National Meetings. 2017. Pine engravers carry bacterial communities whose members reduce concentrations of host monoterpenes with variable degrees of redundancy, specificity, and capability. M Howe, K Keefover-Ring & KF Raffa. Denver, CO.
284. Entomological Society of America, National Meetings. 2017. Seasonal and Regional Distributions, and Phoresy Rates of the Major Vectors of Oak Wilt Fungus, *Ceratocystis fagacearum*, in Wisconsin. Jagemann SM, Juswik J, Tobin P, & Raffa KF. Denver, CO.
285. Entomological Society of America, National Meetings. 2017. Uricolytic activity by termite-gut associated Actinobacteria: Potential role in Nitrogen conservation by subterranean termites. Arango RA, Green F III, Yang VW, Lindholm JR, Chotlos NP & Raffa KF. Denver, CO.
286. Entomological Society of America, National Meetings. 2017. Genetic variation in aspen (*Populus tremuloides* Michx.) phytochemical patterns structure windows of opportunity for gypsy moth (Lymantria dispar L.) larvae. Falk M, Lindroth RL & Raffa KF. Denver, CO.
287. Entomological Society of America, National Meetings. 2017. Establishment success and outbreak dynamics in the gypsy moth: A Wisconsin northwoods paradox. Tobin P & Raffa KF. Denver, CO.
288. Entomological Society of America, National Meetings. 2017. From bacteria to biomes: Crossing scales toward a new understanding of eruptive population dynamics AL Carroll, B Aukema, BJ Bentz, JA Hicke, M Turner, W Romme & Raffa KF. Denver, CO.
289. Novus Research Coordination Network, Sept. 28-29, 2017. Development and evaluation of the Mechanistic Model of Outbreaking Bark Beetles-Mountain Pine Beetle (MMOBB-MPB). Hicke, JA, PC Buotte, & KF Raffa. Hubbard Brook Experimental Forest, NH.
290. Novus Conference, October 2017. Development and evaluation of the Mechanistic Model of Outbreaking Bark Beetles-Mountain Pine Beetle (MMOBB-MPB). Hicke, JA, PC Buotte, & KF Raffa.
291. Annual Meeting of the Internat. Research Group on Wood Protection. 2017. Evaluating the role of Actinobacteria in the gut of wood-feeding termites (*Reticulitermes* spp.). Arango, RA, F. Green III, VW Yang, JR Lindholm, NP Chotlos & KF Raffa. 4-9 June, Ghent, Belgium. IRG/WP 17-10880.
292. Western Forest Insect Work Conference, Hicke J A, P C Buotte & KF Raffa. 2018. Development and evaluation of the Mechanistic Model of Outbreaking Bark Beetles-Mountain Pine Beetle (MMOBB-MPB). 27-29 March, Denver, CO.
293. International Union of Forest Research Organizations, 2018. 6th International Workshop on the Genetics of Tree-Parasite Interactions – Tree Resistance to Insects and Diseases: Putting Promise into Practice. Showalter DN, Raffa KF, Sniezko RA, Herms DA, Liebhold AM, Smith JA, Bonello P. Strategic deployment of tree resistance against forest pathogen and insect invasions. Mt. Sterling, OH. Aug. 5-10.
294. Entomological Society of America / Entomological Society of Canada National Meetings. Do all great minds think alike? An assessment of expert perspective on the impacts of non-native insects in North America. Schulz A, Mech A, Allen C, Ayres M, Gandhi KJK, Gurevitch J, Havill N, Herms D, Hufbauer R, Liebhold AM, Raffa K, Raupp MJ, Thomas K, Tobin P & Marsico TD. Vancouver, Canada. Nov. 11-14.
295. American Geophysical Union Fall Meeting. 2018. Statistically Based Predictive Modeling of Mountain Pine Beetle Outbreaks in Lodgepole Pine Forests of the Western United States

Hicke, JA, P. Buotte, KF Raffa. Washington, D.C. Dec 10-14.

296. XXV International Union of Forest Research Organizations World Congress 2019. How is European forestry prepared to face the intensifying outbreaks of bark beetles? Hlásny T, Seidl R, Raffa K, Müller J, Montagne-Huck C, Liebhold,A, Quin H, Schelhaas M-J, Krokene P, Svoboda, M, Viiri H. Curitiba, Brazil. 29 Sept. - 5 Oct.,
297. European Geophysical Union General Assembly 2019. Carbon allocation in plants and ecosystems: mechanisms, responses and biogeochemical implications. Hartmann H, Huang J, Hammerbacher A, Kautz M, Trowbridge A, Seidl S, Raffa K, Xu C, Kandasamy D, Gershenzon J, Adams H, Goodsman D, Meddens A. Vienna, Austria 7-12 Apr.
298. Western Forest Insect Work Conference. 2019. Do conifers exhibit tradeoffs between their constitutive and induced chemical defenses against tree-killing bark beetles? M Howe, Anchorage, AK. Apr. 22-25.
299. Entomological Society of America National Meetings. 2019. Assessing spatiotemporal variability in drivers of mountain pine beetle infestation intensity. M Howe, A Carroll, C Gratton & K. Raffa. St. Louis, MO.
300. American Geophysical Union Fall Meeting. 2019. Predictive Modeling of Forest Insects in Ecosystem Models: Challenges and Progress. Hicke, JA, P. Buotte, KF Raffa & HK Preisler. San Francisco, CA. Dec 9-13.
301. Upper Midwest Invasive Species Conference. 2020. Seasonal and Regional Distributions, Degree-Day Models, and Phoresy Rates of the Major Sap Beetle (Coleoptera:Nitidulidae) Vectors of the Oak Wilt Fungus, *Bretziella fagacearum*, in Wisconsin. Stephanie M. Jagemann SM, Juzwik J, Tobin PC & Raffa KF. Oct. 12-14. Duluth, MN.
302. Society of American Foresters National Meetings. 2020. How available data can be used to predict the impact of non-native forest insects. A Mech, K Thomas, T Marsico, D Herms, CR Allen, M Ayres, K Gandhi, J Gurevitch. N Havill, A Hoover, R Hufbauer, A Liebhold, K Raffa, A Schulz, D Uden & P Tobin. Oct 28-Nov 1. Providence, RI.
303. Ecological Society of America Meeting. 2020. Predicting the impact of non-native insects: the data speak. Thomas, KA, AM Mech, MP Ayres, PC Tobin, DA Herms, NP Havill, DR Uden, AN Schulz, CR Allen, KJK Gandhi, J Gurevitch, A Hoover, RA Hufbauer, AM Liebhold, KF Raffa & D Marsico. August. Virtual Conf.
304. North American Invasive Species Management Assoc. Ann. Conf. 2020. Predicting the impact of non-native insects on forest trees: the data speak. Thomas KA, AM Mech, PC Tobin, DA Herms, MP Ayres, NP Havill, CR Allen, KJK Gandhi, J Gurevitch, A Hoover, RA Hufbauer, AM Liebhold, KF Raffa, AN Schulz, DR Uden & TD Marsico. Oct. 2020. Virtual Conf.
305. Entomological Society of America National Meetings. 2020. Elevational range expansion of mountain pine beetle is driven by localized irruptive populations. M Howe, A Carroll, C Gratton & K. Raffa. Nov. 11-25. Virtual Conf.
306. Entomological Society of America National Meetings. 2020. Which factors drive impact of introduced insects feeding on North American conifers and woody angiosperms? The data speak. Schulz, AN, AM Mech, MP Ayres, KJK Gandhi, NP Havill, DA Herms, A Hoover, AM Liebhold, TD Marsico, KF Raffa, KA Thomas, PC Tobin, DR Uden & RA Hufbauer. Nov. 11-25. Virtual Conf.
307. Ecological Society of America National Meetings. 2021. Range expansion into high elevation pine stands by tree-killing bark beetles: Do outbreaks still rely on immigration? Howe M, Carroll A, Gratton C & Raffa KF.
308. Entomological Society of America Branch Meetings (E, SE, P). 2021. The impact of non-native insects on forest trees relies on different factors based on host tree specialization. Thomas K, Schulz A, Mech A, Aoki C, Ayres M, Gandhi KJK, Havill N, Herms D, Liebhold AM, Maco S, Marsico TD, Raffa K, Tobin P, Uden D & Hufbauer. R. Virtual Conf.
309. North Amer. Forest Insect Work Conf. Virtual. May 26-28. 2021. Synthesis and utilization of big data for forecasting the impacts of non-native forest insects in North America. Schulz, AN,

RA Hufbauer, CF Aoki, MP Ayres, KJK Gandhi, NP Havill, DA Herms, AM Liebhold, S Maco, TD Marsico, KF Raffa, KA Thomas, PC Tobin, DR Uden & AM Mech.

310. Internat. Assoc. Landscape Ecology - North Amer. Ann. Meeting April. 2021. Forecasting impact of non-native, phytophagous insects relies on different factors based on host tree specialization. Schulz, AN, AM Mech, CF Aoki, MP Ayres, KJK Gandhi, NP Havill, DA Herms, AM Liebhold, S Maco, TD Marsico, KF Raffa, KA Thomas, PC Tobin, DR Uden & RA Hufbauer 2021. Virtual.
311. Entomol. Soc. Amer. Pacific Branch. April 2021. The impact of non-native insects on forest trees relies on different factors based on host tree specialization. Thomas, KA, AN Schulz, AM Mech, CF Aoki, MP Ayres, KJK Gandhi, NP Havill, DA Herms, AM Liebhold, S Maco, TD Marsico, KF Raffa, PC Tobin, DR Uden, & RA Hufbauer. Virtual.
312. International Union of Forestry Research Organizations. Biological Invasions in Forests: Trade, Ecology & Management**.** Sept. 20-24, 2021. The global forest health crisis: A public good social dilemma in need of international collective action. Williams GM, MD Ginzel, Z Ma , DC Adams, F Campbell, G Lovett, MB Pildain, KF Raffa, KJK Gandhi, A Santini, RA Sniezko, MJ Wingfield & PE Bonello. Prague, Czech Rep.
313. Gypsy Moth Annual Review. 2021. Constraints on *L. dispar* outbreaks in a region of rapid spread. PC Tobin & KF Raffa. Oct. 26-28. Virtual.
314. Soc. Amer. Foresters Nat. Con. 2021.. i-TPP: A New i-Tree Tool to Predict Impact of Non-Native Insects on North American Trees. Schulz, AN, RA Hufbauer, CF Aoki, M. Ayres, KJK Gandhi, NP Havill, DA Herms, AM Hoover, AM Liebhold, S Maco, TD Marsico, KF Raffa, KA Thomas, PC Tobin, DR Uden & AM Mech. Nov. Poster. Virtual Conf.
315. Entomological Society of America National Meetings. 2021. The Traits and Factors Catalog: A data compendium of non-native forest insects on North American trees. Thomas, KA, AN Schulz, AM Mech, NP Havill, AM Hoover, RA Hufbauer, AM Liebhold, TD Marsico, KF Raffa & PC Tobin. Nov., Denver, CO. Poster.
316. Entomological Society of America National Meetings. 2021. i-Tree Pest Predictor: A new, forthcoming tool to forecast impact of non-native insects on North American tree species. Schulz AN, NP Havill, CF Aoki, MP Ayres, KJK Gandhi, DA Herms, AM Hoover, RA Hufbauer, AM Liebhold, S Maco, TD Marsico, KF Raffa, KA Thomas, PC Tobin, DR Uden & AM Mech. Nov. 2021. Nov., Denver, CO.
317. International Congress of Entomology. 2022. Predicting the impact of non-native forest insects prior to arrival or establishment. Thomas, KA, AN Schulz, AM Liebhold, AM Mech, CF Aoki, MP Ayres, RA Hufbauer, NP Havill, DA Herms, KJK Gandhi, AM Hoover, TD Marsico, KF Raffa, PC Tobin & DR Uden July 17-22, 2022, Helsinki, Finland.
318. Southern Forest Insect Work Conference. 2022. Wicked woodborers: A closer look at the introduced insects that pose the biggest threat to North American hardwoods Schulz, AN, NP Havill, AM Hoover, MP Ayres, KJK Gandhi, DA Herms, RA Hufbauer, AM Liebhold, TD Marsico, KF Raffa, KA Thomas, PC Tobin, DR Uden, & AM Mech. June, Lexington, KY.
319. Southern Forest Insect Work Conference. 2022. From *Adelges* to *Zeugophora*: A look at the factors driving impact and how we can predict the next high-impact introduced forest insects in North America. Schulz, AN, NP Havill, TD Marsico, CF Aoki, MP Ayres, KJK Gandhi, DA Herms, AM Hoover, RA Hufbauer, AM Liebhold, S Maco, KF Raffa, KA Thomas, PC Tobin, DR Uden, & AM Mech June 2022, Lexington, KY.
320. Joint Annual Meeting of the Entomological Societies of America, Canada, and British Columbia. 2022. *Adelges*, *Agrilus*, and *Archips*, oh my! Factors driving impact and how we can predict the next high-impact insect invaders in North American forests. Schulz, AN, NP Havill, CF Aoki, MP Ayres, KJK Gandhi, DA Herms, AM Hoover, RA Hufbauer, AM Liebhold, S Maco, TD Marsico, KF Raffa, KA Thomas, PC Tobin, DR Uden, & AM Mech. November 2022. Vancouver, BC, Canada.

321. International Congress of Plant Pathology. 2023. Williams GM, Ginzel MD, Ma Z, Adams DC, Campbell F, Lovett GM, Pildain MB, Raffa KF, Gandhi KJK, Santini A, Sniezko RA, Wingfield MJ & Bonello P. 2022. The global forest health crisis: a public good social dilemma in need of international collective action. Aug. 20-25. Lyon, France
322. Missouri Natural Resources Conference. 2023. Schulz, AN, RA Hufbauer, CF Aoki, MP Ayres, KJK Gandhi, NP Havill, DA Herms, AM Hoover, AM Liebhold, S Maco, TD Marsico, KF Raffa, KA Thomas, PC Tobin, DR Uden, & AM Mech. i-Tree Pest Predictor: A new tool to predict the next high impact insect invaders in North American forests. Feb. Osage Beach, MO.
323. International Union of Forestry Research Organizations. World Congress. 2024. Schulz, AN, NP Havill, KA Thomas, CF Aoki, MP Ayres, KJK Gandhi, DA Herms, AM Hoover, RA Hufbauer, AM Liebhold, S Maco, TD Marsico, KF Raffa, PC Tobin, DR Uden, & AM Mech. i-Tree Pest Predictor: A "crystal ball" to foretell future forest invaders? June 23-29, Stockholm, Sweden.
324. 8th IUFRO Internat. Workshop on Resistance Mechanisms and Breeding in Forest Trees: Tree Resistance to Insects and Pathogens and Breeding and Genetic Resources of Five-Needle Pines. M Howe, A Yanchuk, KF Wallin & KF Raffa Quantification of heritable variation in multiple lodgepole pine chemical and physical traits that contribute to defense against mountain pine beetle (*Dendroctonus ponderosae*). June 1 - 6, 2025, Vernon, BC Canada.

Invited Seminars

1. Department of Entomology, Purdue University: The role of plant defenses in the population dynamics of bark beetles. August, 1980.
2. Department of Entomology, Oregon State University: The role of host plant resistance in the colonization behavior and ecology of bark beetles. May, 1981.
3. Department of Entomology, University of Wisconsin: Ecological and physiological aspects of conifer/bark beetle interactions. May, 1985.
4. Department of Entomology and Applied Ecology, University of Delaware: The role of host plant resistance in conifer/bark beetle interactions. Sept., 1981.
5. Department of Biology, Northern Arizona University: Physiological aspects of conifer resistance to bark beetles. Jan. 1984.
6. Behavioral Interdisciplinary Discussion Series, University of Wisconsin: Statistical analysis of multiple choice behavioral assays. Oct 2003.
7. Department of Entomology, University of Wisconsin. Implications of conifer--bark beetle interactions to coevolutionary theory. Feb., 1986.
8. Rohm & Haas, Inc. Feasibility and environmental impact of applying gene insertion techniques to forest protection. March 1987. Philadelphia, PA.
9. Department of Entomology, North Carolina State University. Comparing corporate and academic approaches to basic insect biology: Herbivore feeding behavior as an example. March, 1988.
10. Department of Entomology, Rutgers University. Bark beetle aggregation pheromones: Adaptive significance at three trophic levels. October, 1988.
11. Agracetus, Inc. Evaluating and managing the risks of insect adaptations to transgenic plants. April, 1989. Middleton, WI.
12. Department of Entomology, University of Wisconsin. One foot in the canopy: An overview of forest entomology research at UW-Madison. Feb. 1991.
13. Department of Entomology, University of Georgia. Interactions among tree killing herbivores, fungal symbionts, and adapted predators in the subcortical stem and root tissues of pine: Multiple species mediation of plant-insect relationships. March, 1993.

14. Department of Entomology, Pennsylvania State University. Interactions among herbivores, microbes, and predators in the stem and root tissues of pine: Multi-species mediation of plant-insect relationships. April, 1993.
15. Department of Entomology, Pennsylvania State University Multidisciplinary approaches to transgenic resistance: Integration of molecular genetics, selection breeding, ecology, & pest management to enhance the environmental safety and efficacy of genetically engineered plants. April, 1993.
16. Department of Entomology, University of Maryland. Interactions among herbivores, microbes, and predators in the stem and root tissues of pine: Multi-species mediation of plant-insect relationships. April, 1994.
17. Department of Entomology, University of Maryland. Entomology in the Year 2010. April, 1994.
18. Department of Entomology, University of Wisconsin. Can predators select for altered communication systems in insects? Sept. 1989.
19. Department of Biology, Utah State University/USDA Forest Service Rocky Mountain Experiment Station: It's a boring life: How individual interactions between bark beetles and their host trees can generate area-wide impacts affecting ecosystem management. May, 1995.
20. University of Wisconsin-Madison cross-campus Ecology Symposium. Tri-trophic interactions in forest ecosystems: Implications to basic ecology and natural resource management. Sept. 1995.
21. University of Wisconsin-Madison. Biometry Seminar. Spatial * Temporal interactions in a forest decline syndrome. October, 1995.
22. University of Wisconsin-Madison. Alternative Pest Management Seminar. Principles of insect biotype evolution. Dec. 1995.
23. University of Wisconsin-Madison. Alternative Pest Management Seminar. Ecological implications of plant resistance. Jan. 1996.
24. Michigan State University, Dept. of Entomology. Interactions among multiple insect feeding guilds and microbial associates in pine forests. March, 1996.
25. Michigan State University, Dept. of Entomology. Effects of secondary plant metabolites at multiple levels of scale. March, 1996.
26. University of Alaska-Fairbanks, Dept. of Biology. Interactions among biotic and abiotic stress agents with bark beetle-microbial colonization processes. June, 1996.
27. University of Kentucky, Dept. of Entomology. Ecological implications of individual variation in bark beetle semiochemistry. Nov. 14, 1997.
28. USDA FS Southern Forest Research Station. Forest entomology at the University of Wisconsin. March 24, 1998.
29. University of Minnesota. How can herbivores avoid natural enemies that exploit their chemical signals for host finding? Implications to coevolution and biological control. March 1999.
30. University of Arkansas. Chemical camouflage in herbivorous insects. April 1999.
31. Simon Fraser University. Can chemical communication be cryptic? Countering the adaptive responses of natural enemies seeking their prey. April 2000.
32. North Carolina State University. Michael Duke Seminar. Can chemical communication be cryptic? Implications to predator – prey coevolution, and biological control. May 2000.
33. Madison Ecology Group, Plenary Session. Oct. 2000 Chemical Signaling among Trees, Insect Herbivores, and Predators: Landscape level consequences and management implications.
34. Univ. Illinois. Dept. Entomol. March 2001. Predator exploitation of prey chemicals associated with feeding and mating: What's an herbivore to do? K. F. Raffa.
35. Univ. Illinois. Nat. History Survey. March 2001. Tree defenses, Herbivore Adaptations, and Natural Resource Challenges Arising from the Boring Life Style of Bark Beetles: How specific features of a plant - insect association can confront humans with value – laden decisions

36. Univ. Wisconsin, Dept. Forest Ecol. & Manag. Sept 2001. Challenges Arising from the Boring Life Style of Bark Beetles: How specific features of a plant-insect association can exert landscape level effects and force difficult social decisions
37. Univ. Wisconsin, Dept. Mathematics. Oct 2001. Seminar in Complex Systems: Tritrophic Interactions in Bark Beetles.
38. Univ. Wisconsin, Dept. Ent. Dec. 2001. Tree defenses, Herbivore Adaptations, and Natural Resource Challenges Arising from the Boring Life Style of Bark Beetles: How specific features of a plant - insect association can confront humans with value – laden decisions.
39. Univ. California - Davis. Dept. Ent. Oct. 2002. Upstairs – Downstairs: How can interactions among folivores, root feeders, and stem feeders with dynamic plant defenses generate variable population behaviors by eruptive herbivores?
40. Univ. Wisconsin, Interdisc, Env. Group. Feb. 2003. Gypsy Moth in Wisconsin - What does it tell us about ourselves and how we should address biological invasions?
41. Univ. Wisconsin, Env. History Group. March. 2003. Gypsy Moth in Wisconsin: Civil War to present.
42. Univ. Wisconsin, Env. History Group. Feb. 2004. Natural resource challenges arising from the boring life style of bark beetles: How specific features of plant-insect associations confront humans with value-laden decisions.
43. Washington St. Univ. School of Biology. April 19, 2004. Constraints and eruptions in herbivore population dynamics: Patterns of landscape-level disturbance arising from plant defense, insect behavior, inter-guild interactions, and biological thresholds.
44. Washington St. Univ. Dept. Entomol. April 21, 2004. Keeping Communication Confidential: Chemical Eavesdropping and Counter-Adaptation in Bark Beetle-Predator Interactions E. Paul Catts Memorial Lecture.
45. Swedish University of Agricultural Sciences. May 26, 2004. Interactions among Plant Defense, Host Selection Behavior, and Population Dynamics in an Eruptive Herbivore: Landscape Consequences of Individual Decisions.
46. Univ. Northern British Columbia. Sept. 2004. Bark beetles in conifers: When do boring insects become dramatic?
47. Univ. Delaware, Dept. Entomol. & Applied Ecology. Nov. 2004. Keeping Communication Confidential: Chemical eavesdropping and counter-adaptation between bark beetles and predators.
48. University of Wisconsin-Eau Claire. 2005. How do forest insects transform from stable to eruptive population dynamics? And why does it happen so rarely?"
49. Canadian Forestry Service. April, 2005. Feedbacks between chemical signaling and population dynamics: A mechanistically based approach to understanding eruptive herbivores.
50. University of Quebec. April, 2005. Feedbacks between chemical signaling and population dynamics: A mechanistically based approach to understanding eruptive herbivores.
51. Pennsylvania State Univ. April, 2006. Ecosystem engineering begins at home: How exploiting a few chemical signals allows eruptive insect herbivores to act locally and impact globally.
52. Univ. Wisconsin, Env. History Group. Oct . 2007. Since Silent Spring. Dissecting elements of past successes to energize responses to today's challenges.
53. Ohio State Univ. April, 2007. Landscape-scale patterns from micro-scale processes: Dynamics and implications of bark beetle outbreaks.
54. Univ. Wisconsin, Dept. Ent, November 2007. Understanding the dynamics of eruptive forest insects.
55. Pennsylvania State Univ. Oct, 2008. Cross-scale interactions, critical thresholds, and changing climate in the biome-scale eruptions and potential regime shifts of bark beetles.
56. Univ North Dakota Dept. Biol. Threshold–mediated dynamics of eruptive bark beetle interactions with host conifers: Features of natural disturbance agents prone to anthropogenic amplification. April, 2009.

57. Univ. Wisconsin, Env. History Group. Dec. 2009. Anatomy of a Tipping Point
58. Univ. Wisconsin, Center for Culture, History and the Environment Environmental History Colloquium. Jan. 27, 2010. Mountain Pine Beetle as a case study of an environmental tipping point
59. Univ. Wisconsin, Climate, People, and Environment Program. March 12, 2010. Anatomy of a Tipping Point: Bark Beetles, Thresholds, and Altered Disturbance Regimes.
60. Univ. Alberta Dept. Renewable Resources. Dynamics of a Tipping Point: Constraints, Thresholds, and Regime Change in Conifer-Bark Beetle Interactions. Sept. 23, 2010.
61. Univ. Alberta. Entomology. Partners in Crime: How symbiotic bacteria can facilitate biological invasions, and be used to manage them. Sept. 23, 2010.
62. Univ. Arkansas, Dept. Entomology. Anatomy of a tipping point: Thresholds, disturbance, and regime change in conifer-bark beetle interactions. Spring, 2011.
63. Univ. Victoria Landsdowne Public Lecture. Nov 2011. Anatomy of a tipping point: Why being a bark beetle is difficult, and how we've made it easier.
64. Univ. Victoria Landsdowne Departmental Lecture. Constraints and drivers of bark beetle outbreaks: How small-scale processes can generate large-scale consequences when they surpass critical thresholds. Nov 2011.
65. Univ. Wisconsin Botany/Zoology Seminar. Bark beetle outbreaks in western conifer ecosystems: Constraints, drivers, and how we've made a difficult lifestyle easier. March 2012.
66. Univ. Wisconsin, Env. History Group. Feb. 2012. Emerald Ash Borer: A 'Gem' of a Gift. Feb. 2012.
67. Colorado State Univ. Entomology Seminar. Constraints and drivers of bark beetle outbreaks: And how we've made a difficult lifestyle easier. Jan 2013.
68. Univ. Alberta. Forest Industry Lecture Series, Dept. Renewable Resources. Looking under the bark beetle hood to get a better grip at the wheel. Nov 2013.
69. Northern Arizona Univ. Constraints and drivers of bark beetle outbreaks: And how we've made a difficult lifestyle easier March 26, 2014.
70. Univ. Montana, Bark beetles in conifers: A system of checks and balances … until it's not. April 9, 2014.
71. Univ. Georgia Warnell School of Forestry: Constraints and drivers of bark beetle outbreaks: And how we've made a difficult lifestyle easier. February 12, 2015.
72. Univ. Washington School of Environmental and Forest Sciences: Constraints and drivers of bark beetle outbreaks: And how we've made a difficult lifestyle easier. Oct. 14, 2015.
73. Univ. Wisconsin-Madison Dept. Forest & Wildlife Ecol. Landscape-Scale Disturbance Regimes by Bark Beetles: Constraints, Drivers, and Anthropogenic Amplification. Nov. 20, 2015.
74. Univ. Wisconsin, Env. History Group. Feb. 2016. Endangered species: A lens into how we prioritize values, resolve conflict, and apply ecological understanding, through various slices of time.
75. Univ. Illinois, Dept. Entomol. Dec. 2016. Constraints and drivers of bark beetle outbreaks: Implications to natural resource management in a changing environment.
76. Univ. Wisconsin, Center for Culture, History and the Environment Environmental History Colloquium. Invasive Nonindigenous Insects and Pathogens in Forest Ecosystems: Causes, Consequences, and Choices. Feb. 9, 2017.
77. Univ. Wisconsin. Dept. Entomol. Understanding mechanisms and roles of plant defense within the context of thresholds, feedbacks, and cross-scale interactions: Implications to studying and managing forest insects. March 2017.
78. USGS Powell Center. Fort Collins, CO. Predicting the Impact of Non-native Specialist Insects Feeding on North American Host Plants. A Mech , P Tobin, T Marsico, K Thomas, D Herms, CR Allen, M Ayres, K Gandhi, J Gurevitch. N Havill, A Hoover, R Hufbauer, A Liebhold, K Raffa, M Raupp, A Schulz & D Uden. July, 2017.

79. Univ. Wisconsin. Campus Symposium on Abrupt Changes in Ecological Systems. From denizens of ephemeral habitats to landscape engineers and threats to ecosystem services: How bark beetles rapidly respond to and drive environmental change. Nov. 2017.
80. Univ. Maine, School of Biology and Ecology. Constraints and Drivers of Bark Beetle Outbreaks in a Changing Landscape: Conifer Defense, Beetle Behavior, and Factors that Tilt the Balance. March 2021.

Panels

1. Mountain Pine Beetle Work Conference, Oct. 1977. How do endemic bark beetle populations convert to epidemic behavior? Boise, ID.
2. Wisconsin Forest Pest Management Council, Madison, WI:
3. Wisconsin Forest Pest Management Council, Madison, WI: Jan. 21, 1987. Red pine decline;
4. Wisconsin Forest Pest Management Council, Madison, WI: Dec. 2, 1987. Methods of sampling Introduced Basswood Thrips.
5. Wisconsin Forest Pest Management Council, Madison, WI: Jan 3, 1990; Pine root weevil sampling; Causes of red pine decline; Impact of Introduced Basswood Thrips; Clonal variation in poplar susceptibility to Forest Tent Caterpillar.
6. USDA/CSRS Work Conference on Attraction and Dispersal of Pine Bark Beetles and Associates. Oct. 1989. Blacksburg, VA.
7. International Union of Forestry Research Organizations working group on Biotechnology, Madison, WI, August 17, 1990: Ecological aspects of genetic engineering.
8. USDA FS Work Conference on Bark Beetle Genetics. May, 1992. Berkeley, CA.
9. National Workshop on Critical Issues in Agricultural Technology Assessment. May 21-22, 1993.
10. Entomological Society of America National Meetings. 1996. Symposium on Bark Beetle Biological Control. "Conclusions and Discussion." Louisville, KY.
11. National Gypsy Moth Technical Review. 1999. Slow the spread strategies. Annapolis, MD.
12. National Gypsy Moth Slow the Spread Technical Review. 2000. Slow the spread strategies. Asheville, NC; 2004. Madison, WI.
13. Presentation to US Representative Tammy Baldwin on environmental aspects of plant genetic engineering. 2001.
14. USDA/CSRS Work Conference on Southern Pine Beetle. Aug 2003. Blacksburg, VA.
15. American Phytopathological Soc. National Meetings, Ideas Café. Aug. 2020. In search of fresh, tractable solutions to the wicked problem of destructive, non-native forest pathogens. G. Williams & P Bonello, organizers.

Research Grants: $9,368,944

1. NSF Doctoral Dissertation Grant, 1978. $8,600, 2 yrs. Conifer-Bark Beetle Interactions. K.F. Raffa
2. USDA Competitive Grant on Plant Stress, 1978. $60,000, 2 yrs. Host Resistance to Bark Beetles. A.A. Berryman & K.F. Raffa.
3. UW Graduate School, 1986. $21,931, l yr. Effects of Sawfly Feeding on Defense Metabolism of Red Pine. K.F. Raffa.
4. McIntire Stennis, 1986. $73,585. 4 yr. Physiological aspects of conifer resistance to sawflies. K.F. Raffa.
5. USDA Competitive Grants, Insect Pest Science, 1986. $200,000. 3 yr. The role of root weevils and associated microorganisms in predisposing pines to bark beetle attack. K.F. Raffa & E.B. Smalley.

6. Wisconsin Department of Natural Resources, 1986. $63,142. 4 yr. Effects of defoliation on red pine. K.F. Raffa.
7. USDA Competitive Grants, Forest and Rangeland Renewable Resources, 1986. $l00,000, 3 yr. Host properties affecting red pine resistance to root weevils and associated microorganisms. K.F. Raffa & E.B. Smalley.
8. UW Graduate School, 1987. $12,382. Host reactions to oviposition by sawflies. 1 yr. K.F. Raffa.
9. USDA Competitive Grants, Forest and Rangeland Renewable Resources, 1987. $150,900, Physiological responses of conifers to sawfly attack. 2.5 yrs. K.F. Raffa, P. Reich, & S. Krause.
10. Christmas Tree Producers, Associations of Wisconsin, Michigan, Minnesota, & Illinois, 1987. $5,250. 2 yr. Use of attractive lures to monitor pine root collar weevil populations. K.F. Raffa.
11. Rohm & Haas, Inc. 1987. $10,000. Biotechnology of woody plants. K.F. Raffa.
12. Wisconsin Department of Agriculture, Trade and Consumer Protection. 1988. Sustainable Agriculture Program: Use of attractive baits to reduce insecticide application in Wisconsin Christmas Tree farms. $35,285. 2 yr. K.F. Raffa.
13. UW Graduate School, 1988. $16,691, l yr. Effect of root infestation on susceptibility of pines to bark beetle attack. K.F. Raffa.
14. McIntire Stennis, 1989. $97,200. 4 yr. Host tree factors affecting susceptibility to forest defoliators. K.F. Raffa.
15. UW-Applied Research. 1989. Use of attractive baits to monitor root weevil populations in Christmas tree farms. 1 yr. $8,850. K.F. Raffa.
16. USDA Forest Service, Research Cooperative Agreement, 1989. $25,500. Life history and impact of introduced basswood thrips. 4 yr. K.F. Raffa & R. Haack.
17. UW Graduate School, 1989. $19,289, 1 yr. Pine bark beetles. K.F. Raffa.
18. UW Graduate School. 1990. $12,396, 1 yr. Ecological factors affecting the efficacy of chemical defense by conifer sawflies. K.F. Raffa.
19. USDA Competitive Grants, Insect Pest Science, 1990. $85,000. 2 yr. Role of root invading insect-fungal complexes in patterns of host utilization by endemic bark beetle populations. K.F. Raffa & E.G. Smalley.
20. Wisconsin Department of Natural Resources, 1990. $54,436. 3 yr. Biology and impact of Introduced Basswood Thrips. K.F. Raffa.
21. Wisconsin Christmas Tree Producers Association, 1991. $3,000. 2 yr. Prediction of injury by pine root weevils based on baited pitfall traps. K.F. Raffa.
22. UW Graduate School Industrial and Economic Development Fund. 1991. $160,000. 3 yr. The transfer of biotechnologically-based pest control technologies to the fiber and bioenergy industries. B. McCown, K.F. Raffa, & D. Ellis.
23. UW Center for Integrated Agricultural Systems. 1991. $5,000. 1 yr. Evaluation of a simple monitoring program for reducing pesticide applications to Christmas trees. K.F. Raffa, P. Hedrick, Jr., R. Kachadoorian & J. Cummings Carlson.
24. UW Graduate School. 1992. $9,250. 1 yr. Heritability of host colonization behavior in bark beetles. K.F. Raffa.
25. Ciba-Geigy Corp. 1992. $2,000. 1 yr. Use of entomophagous nematodes to control pine root weevils. K.F. Raffa.
26. Midwest Plant Biotechnology Consortium. 1992. $251,163. 2 yr. Deployment strategies for genetically engineered poplar hybrids useful for biofuels. D. Ellis, K.F. Raffa, B. McCown, & G. Stanosz.
27. UW Applied Research Award. 1993. $10,729. 1 yr. Non-chemical protection of pine plantations from root and stem insect and disease complexes. K.F. Raffa & E.B. Smalley.

28. McIntire Stennis. 1993. $93,762. 4 yr. Integration of microbial insecticides and natural enemies in biological control of forest pests. K.F. Raffa.
29. Wisconsin Department of Natural Resources. 1993. $54,972. 2 yr. Biological control of gypsy moth in Wisconsin. K.F. Raffa.
30. Georgia Pacific, Inc. 1993. 2 yr. Population dynamics of pine root weevils. $8500. K.F. Raffa.
31. National Science Foundation. 1994. 3 yr. $262,645. Altered semiochemistry as a source of partial escape from predators responding to insect pheromones. K.F. Raffa.
32. Consortium for Plant Biotechnology Research, Inc., Energy from Biomass. 1994. 2 yr. $40,000. Variation in the expression and efficacy of genetically engineered pest resistance in poplar, a woody biofuels energy crop. D. Ellis, K. Kleiner, B. McCown & K.F. Raffa.
33. USDA FS. 1994. 2 yr. $38,000. Biological impacts of defoliation by jack pine budworm. K.F. Raffa.
34. Hatch Multidisciplinary Award. 1995. $105,000. 2 yr. Economic and ecological approaches to alternative pest control in renewable biomass plantations. J.-P.Chavas, K. Raffa, B. McCown, & G. Stanosz.
35. USDA FS. 1995. $7,500. 1 yr. Determination of inter- and intra-specific genetic variability in two closely related *Dendroctonus* spp. (*D. valens* and *D. terebrans*) using PCR technology. J. Hayes, K. Klepzig, & K. Raffa.
36. Wisconsin Department of Natural Resources. 1995. $77,222. 3 yr. Biodiversity of insects in old growth forests. K.F. Raffa.
37. Blandin Paper, Inc., and general. 1996. $10,000. 2 yr. Pest resistance in aspen. K.F. Raffa.
38. WIDATCP. 1996. $40,000. 3 yr. Evaluation of the gypsy moth fungal pathogen, *Entomophaga maimaiga*, in Wisconsin. K.F. Raffa.
39. UW Graduate School. 1996. $14,455. 1 yr. Induced plant defenses to herbivory: Effects of nutrient availability. K.F. Raffa.
40. USDA APHIS. 1996. $15,000. 3 yr. Gypsy moth biological control survey. K.F. Raffa.
41. USDA Forest Service. 1996. $18,000. 1 yr. Comparative effects of Btk application on two strains of a gypsy moth parasitoid. K.F. Raffa, S.C. Krause, N. Dubois, & A. Chenot.
42. National Science Foundation. 1996. $18,000. 2 yr. Long Term Ecological Research Site. K.F. Raffa, R. Werner, & B. Illman.
43. National Science Foundation. 1996. $200,000. 3 yr. Density-dependent host selection behavior as a possible contributing factor to the population dynamics of insect herbivores. K.F. Raffa.
44. Wisconsin Christmas Tree Producers Assoc. 1991. $3,000. 2 yr. Monitoring methods for pine root weevils. K.F. Raffa.
45. WI DNR. 1996. $65,044. 3 yr. Integrated silvicultural and biological control of gypsy moth in Wisconsin.
46. USDA. Competitive Grants Biological Control. 1996. $254,708. Application of chemical ecology to conservation and augmentation of bark beetle predators. K.F. Raffa & D.L. Dahlsten. 3 yrs.
47. McIntire-Stennis. 1997. $95,000. Effects of variable plant defense chemistry on biological control of chemically-defended and undefended forest pests. K.F. Raffa. 4 yr.
48. WI DNR. 1997. $10,000. Monitoring methods for natural enemies of bark beetle pests. K.F. Raffa. 1 yr.
49. WI DNR. 1997. $75,000. Insects and pathogens affecting forest health of red pine. K.F. Raffa. 3 yrs.
50. USDA FS. 1998 $25,000. Lake State Basswood decline evaluation. R. Mech, R. Heyd, M. Albers, J. Cummings Carlson, K. Raffa, S. Katovich. 1 yr.
51. WI DNR. 1998. $10,000. Evaluation of the performance of gypsy moth biological control agents released in Wisconsin. K.F. Raffa. 1 yr.
52. NSF REU Supplement. 1998. $5,000. Density - dependent host acceptance behavior as a possible contributing factor to the population dynamics of insect herbivores. K.F. Raffa. 1 yr.

53. UW Applied Research Program. 1998. Evaluation of insect resistance in fast growing trees. $2679. K.F. Raffa. 1 yr.
54. NSF REU Supplement. 1998. $5,000. Interactions among subcortical beetles, fungi, and white spruce in Alaska. K.F. Raffa. 1 yr.
55. USDA FS. 1998. $28,000. Small mammal predation of gypsy moth in Wisconsin. K.F. Raffa. 3 yr.
56. National Science Foundation. 1998. $87,280. Long Term Ecological Research Site. Bonanza Creek, Alaska. K.F. Raffa, B. Illman, R. Werner. 3 yr.
57. UW Graduate School. 1998. $14,600 Use of microbial symbionts in host finding by natural enemies of bark beetles: Implications to chemical ecology and biological control. Raffa. 1 yr.
58. William F. Heckrodt Program for Fiber Crop Development and Utilization. 1998. $25,000. Impact of cottonwood leaf beetle on hybrid poplars: Does leaf susceptibility change with tree age? K. F. Raffa. 1 yr.
59. Samuel C. Johnson Distinguished Fellowship. 1999. $75,000. Use of chemical signals to selectively remove pest insects. K. F. Raffa. 3 yr.
60. WI DNR. 1999. 34,950. Accessing establishment of gypsy moth biological control agents released in Wisconsin. K.F. Raffa. 2yr.
61. NSF REU Supplement. 1999. $5,000. Density-dependent host acceptance behavior as a possible contributing factor to the population dynamics of insect herbivores. K.F. Raffa. 1 yr.
62. USDA FS 1998. $88,653. Lake State Basswood Decline Evaluation. R. Mech, R. Heyd, M. Albers, J. Cummings Carlson, K. Raffa, S. Katovich. 3 yr.
63. WI DNR. 1998. $8,600 Residual effects of *Bacillus thuringiensis kurstaki* on gypsy moths and other Lepidoptera. K.F. Raffa. 3 yr.
64. UW Vilas Associate. 2000. $20,000. K.F. Raffa. 2 yr.
65. WI DNR. 2000. $50,000. Managing the intersection of gypsy moth and Karner Blue Butterfly in Wisconsin. K.F. Raffa. 2 yr.
66. USDA FS. 2000. $42,000. Monitoring the abundance and distribution of introduced root-feeding weevils in upper Great Lakes forests. K.F. Raffa. 2 yr.
67. Dow Agro Sciences. 2001. $7,000. Potentiators for microbial insecticides for biomass trees. K.F. Raffa, N. Broderick, R. Goodman, J. Handelsman. 1 yr.
68. Center for Plant Biotechnology Research. 2001. $20,000. Potentiators for microbial insecticides for biomass trees. K.F. Raffa, N. Broderick, R. Goodman, J. Handelsman. 1 yr.
69. Canadian Forest Service. 2000. Interactions of Bt and *Nosema* in Spruce Budworm: Implications to environmental safety and efficacy of transgenic plantation trees. $46,032. 2 yr.
70. McIntire-Stennis. 2001. $100,000. Potential roles of fungi in the ecology of bark beetles. 3 yr.
71. USDA NRI Entomology. 2001. $180,000. Use of microbial symbionts in host finding by natural enemies of bark beetles. K,F. Raffa, D. Six, & D. Dahlsten. 2 yr.
72. USDA FS. 2001. $45,000. The midgut microflora as a target for controlling Asian long horned beetle. 1 yr.
73. UW Grad School. 2002. $14,625. Sequence, impact, and behavior of multiple natural enemies attacking a common, cryptic, insect in a restricted habitat. 1 yr.
74. Multidisciplinary Hatch 2002. $45,451. The Trojan Horse and the Gypsy Moth: Harnessing killer plasmids for targeted study of microbial communities. Handelsman J., M. Filutowicz, K. Raffa, & R. Burgess. 4 yrs.
75. USDA FS 2002. $123,368. Gut microflora of the southern pine beetle. K.F. Raffa. 4 yr.
76. National Science Foundation / USDA FS. 2002. $24,650. Long Term Ecological Research Site. Bonanza Creek, Alaska. K.F. Raffa, B. Illman, R. Werner. 1 yr.
77. Valent Biosciences. 2002. $266,203. Discovery of synergists of *Bacillus thuringiensis*. J. Handelsman & K.F. Raffa
78. USDA FS Technology Development Program. 2003. $126,000. Developing habitat-type-based gypsy moth silvicultural guidelines for Wisconsin forests. K.F. Raffa & K. Gottschalk. 3 yr.

79. USDA NRI. 2003. $210,000. Net effects of ophiostomatoid fungal associates on bark beetle reproduction: Spruce beetles, tree defense chemistry, and competition for a restricted resource. K.F. Raffa, K.D. Klepzig, & B. Kopper. 3 yr.
80. USDA FS. 2003. $135,368. Determination of the gut microflora of southern pine beetle. K.F.Raffa. 3 yr.
81. USDA FS. 2003. $37000. Population Dynamics of Gypsy Moth in Wisconsin. K.F. Raffa. 2 yr.
82. USDA FS. 2004. $82,000. Population dynamics and impact of cottonwood leaf beetle in hybrid poplar plantations: effects of clone and management regime. K. Raffa. 2 yr.
83. Can. FS. $28,000. Mountain pine beetle outbreak development: The endemic – incipient transition. 2 yr. K.F. Raffa.
84. USDA FS. $25,000. The midgut microflora as a target for controlling emerald ash borer. K.F. Raffa. 1 yr.
85. USDA FS. 2003. $44,000. Impacts of introduced root-feeding weevils on understory seedlings in northern hardwoods forests. K.F. Raffa. 5 yr.
86. NSF Ecology LTREB. 2003. $300,000. Interaction of below- and above- ground herbivory in forest gap formation: Long-term analysis of underlying mechanisms and spatio-temporal patterns K.F. Raffa, J. Reeve, B. Aukema, M. Clayton, E. Nordheim, J. Zhu, V. Radeloff, D. Young. 6 yrs
87. UW Graduate School. 2004. $36,073. The Gypsy Moth and the Trojan Horse: Microbial community ecology in a Lepidopteran midgut. Handelsman J., M. Filutowicz & K. Raffa. 1 yr.
88. NSF Ecology. 2004 REU. $12,000. Interaction of below- and above- ground herbivory in forest gap formation. K. Raffa. 1 yr.
89. USDA FS. 2004. $72,000. Evaluating potential impacts of microbial control agents applied against gypsy moth on endangered species: Karner blue butterfly and moth-pollinated prairie fringed orchid. K. Raffa. 2 yr.
90. International Paper, Inc. 2004. $9200. Population dynamics and impact of cottonwood leaf beetle in hybrid poplar plantations: effects of clone and management regime. K. Raffa. 2 yr.
91. UW System Applied Research. 2004. $21,000. Biological control of gypsy moth in Wisconsin. K. Raffa. 1 yr.
92. WI DNR. 2004. $10,000. Evaluating potential impacts of microbial control agents applied against gypsy moth on endangered species: Karner blue butterfly and moth-pollinated prairie fringed orchid. K. Raffa. 2 yr.
93. McIntire-Stennis. 2005. $103,324. Exotic root feeding herbivores: What is their impact on Wisconsin's northern hardwood forests? K. Raffa. 4 yr.
94. Multi-disciplinary Hatch. 2005. $68,370. Small molecule synergists of *Bacillus thuringiensis* for control of insect pests. J. Handelsman, H. Blackwell, & K. Raffa. 2 yr.
95. Can. FS. 2005. $16,591. Impacts of climate change on the range expansion of the mountain pine beetle. 2 yr. K.F. Raffa.
96. USDA FS. 2005. $11,675. Separating dispersal events from local increases along the western leading edge of gypsy moth. 1 yr. K.F. Raffa.
97. NSF Ecology. 2005 REU. $6500. Interaction of below- and above- ground herbivory in forest gap formation. K. Raffa. 1 yr.
98. Hatch. 2001. 10,000. Interactions among bark beetles, pathogens, and conifers in North American forests. K. Raffa. 5 yr.
99. UW Graduate School. 2005. 20,000. Symbiotic associations among eruptive bark beetles, fungi, and bacteria. K. Raffa & C. Currie. 1 yr.
100. World University Network, 2005. $23,000. 1 yr. Ecological interactions in a changing environment. R. Lindroth, C. Gratton, G. Poppy, L. Kirkendall, & K.F. Raffa.
101. NSF Ecology. 2006. REU. $6,000. Interaction of below- and above- ground herbivory in forest gap formation. K. Raffa. 1 yr.

102. WI DNR. 2006. 5,000. Effects of stand structure on the population dynamics, natural enemy complex, and impacts of gypsy moth in Wisconsin. 1 yr.
103. USDA FS. 2006. $ 20,000. Effect of grid intensity on male moth catches in Wisconsin. 1 yr.
104. USDA FS. 2006. $35,000. Forest habitat structure- and natural enemy- interactions during continuous phases of gypsy moth establishment and population eruption. 3 yr.
105. USDA FS 2006. 34,600. Developing habitat-type-based gypsy moth silvicultural guidelines for Wisconsin forests. 2 yr.
106. International Paper, Inc. 2006. $6000. Population dynamics and impact of cottonwood leaf beetle in hybrid poplar plantations: effects of clone and management regime. K. Raffa. 2 yr.
107. EPA. 2006. $104,881. Above and belowground herbivory by invasive weevils on forest dynamics effects on individual tree and forest community survival, growth, biomass, and nutrient partitioning and productivity. D. Coyle & K. Raffa. 3 yr.
108. Applied Ecological Services, Inc. 2006. $7500. Above and belowground herbivory by invasive weevils on forest dynamics" effects on survival, productivity, nutrient allocation and forest community composition. D. Coyle & K. Raffa. 3 yr.
109. NSF Ecology. 2006. REU. $6,500. Interaction of below- and above- ground herbivory in forest gap formation. K. Raffa. 1 yr.
110. NSF Ecology. 2007. REU. $6,500. Interaction of below- and above- ground herbivory in forest gap formation. K. Raffa. 1 yr.
111. USDA FS. 2007. $29,000. Extent, impacts, and dynamics of red pine defoliation by jack pine budworm. K. Raffa, J Cummings-Carlson, J Hubbard, E Signsaas. 1 yr.
112. NSF International Programs in Science & Engineering. 2007. $10,733. Interaction of below- and above- ground herbivory in forest gap formation: Long-term analysis of underlying mechanisms and spatio-temporal patterns. K. Raffa. 1 yr.
113. USDA FS. 2007. $9,000. Monoterpene composition of whitebark and lodgepole pines K. Raffa. 2 yr.
114. USDA FS. 2007. $49,820. Functionality in the gut microflora of the southern pine beetle. K.F.Raffa. 1 yr.
115. USDA FS. 2007. $20,000., bark beetles, and salvage logging in the Greater Yellowstone Ecosystem K.F.Raffa. 1 yr.
116. NSF Ecology. 2008 REU. $7000. Interaction of below- and above- ground herbivory in forest gap formation. K. Raffa. 1 yr.
117. USDA FS. 2007. $100,000. Evaluating and monitoring mountain pine beetle infestation in fire-damaged ponderosa and lodgepole pine stands on the Ashley National Forest. K. Raffa, B. Bentz, D. Blackford. 4 yrs.
118. UW Kellett Award. 2008. $60,000. Mid-Career. K. Raffa. 3 yrs.
119. NSF Ecology. 2008. $497,853. A conceptual and mechanistic approach to understanding interactions among multiple disturbance agents: compound effects of fire on resource availability to bark beetles K. Raffa, P. Townsend, E. Powell. 4 yrs.
120. USDA NRI. 2008. $449,950. How do interactions among microbial symbionts affect the host and range expansions of an eruptive forest insect?. K. F. Raffa, C. Currie, A. Adams. 4 yrs.
121. USDA FS. 2008. $15,700. Effects of stand structure on the population dynamics, natural enemy complex, and impacts of an invasive species affecting a new geographic zone. K. Raffa. 2 yrs.
122. McIntire-Stennis. 2008. $175,000. Interactions among symbionts and bark beetles. K. Raffa. 4 yrs.
123. USDA FS. 2009. $15,256. Early detection and rapid response of exotic bark beetles. K. Raffa. 1 yrs.
124. Center for Communicable Disease Control. 2009. $114,980. Evaluating Impacts of Environmental Precursors on the Abundance and Distribution of Lyme Disease Vectors. D Coyle, M Murphy, S Paskewitz, KF Raffa. 1yr.

125. NSF Ecology REU. 2009. $10,099. A conceptual and mechanistic approach to understanding interactions among multiple disturbance agents: compound effects of fire on resource availability to bark beetles K. Raffa, P. Townsend, E. Powell. 1 yr.
126. Wisconsin Cranberry Board. 2009. $49,784. The presence, population structure, and potential effects of endophytic Phyllosphere bacteria in commercial cranberry plantings. B McCown, K Raffa, C Currie, E Zeldin, S Adams, C Mason. 1 yr.
127. USDA FS. 2010. $120,598. Identifying factors constraining gypsy moth populations during the post-establishment pre-outbreak phase behind the STS action zone. K. Raffa. 4 yr.
128. NSF Ecology REU. 2010. $7500. A conceptual and mechanistic approach to understanding interactions among multiple disturbance agents: compound effects of fire on resource availability to bark beetles K. Raffa, P. Townsend, E. Powell. 1 yr.
129. Wisconsin Dept. Natural Resources. 2010. $143,173. Biological control of Emerald Ash Borer in Wisconsin. K. Raffa. 4 yr.
130. Beers Bascom Fellowship in Conservation. 2010. $75,000. UW-Madison CALS. K. Raffa, 5 yr.
131. USDA AFRI. 2010. $450,985. Climate warming of the southern boreal forest: consequences for tree-insect interactions. RL Lindroth, K Raffa, P Reich. 3 yr.
132. NSF Ecology REU. 2011. $7500. A conceptual and mechanistic approach to understanding interactions among multiple disturbance agents: compound effects of fire on resource availability to bark beetles K. Raffa, P. Townsend, E. Powell. 1 yr.
133. Multidisciplinary McIntire-Stennis. 2011. $133,524. Potential Role of Bacterial Symbionts in Resistance of a Woody Biofuel Crop To Insects. K. Raffa, C. Currie, & B. McCown. 3 yr.
134. UW Graduate School. 2011. $36,918. Role of endosymbiotic bacteria in pest resistance of a woody biofuel crop. K. Raffa. 1 yr.
135. NSF Ecology REU. 2012. $7500. A conceptual and mechanistic approach to understanding interactions among multiple disturbance agents: compound effects of fire on resource availability to bark beetles K. Raffa, P. Townsend, E. Powell. 1 yr.
136. UW Graduate School. 2013. $35,844. How will phenological shifts caused by climate change affect forest defoliators? K. Raffa. 1 yr.
137. UW CALS Bridge. 2014. 79,955. Susceptibility of high elevation pines to mountain pine beetles gaining increased access by warming climate. P. Townsend & K Raffa.. 1 yr.
138. McIntire-Stennis. 2014. $175,895. Potential degradation of tree defensive chemicals against bark beetles and their fungal symbionts by bacteria. K. Raffa. 4 yrs.
139. WI DNR. 2015. $149,971Association and timing of vectors of oak wilt fungus in Wisconsin.. 2 yrs.
140. Friends of Peninsula State Park. 2015. $2000. Association and timing of vectors of oak wilt fungus in Wisconsin 2 yr.
141. Whitebark Pine Ecosystems Foundation. 2018. $1,000 Is whitebark pine more amenable to mountain pine beetle attack behavior than historical hosts?. M Howe & K Raffa. 1 yr.
142. USDA FS National Urban and Community Forestry Challenge Cost-Share Grant Program. 2019. Forecasting high-impact insect invasions by integrating probability models with i-Tree from urban to continental scales. $280,806. Hufbauer H, Ayres M, Herms D, Maco S, Gandhi K, Havill N, Liebhold A, Marsico T, Schulz A, Mech A, Raffa K, Thomas K & Tobin P.

Equipment Grants: $94,800

1. NSF Biological Instrumentation Program, 1989. $30,000. UW Grad. School--$15,000. High Performance Thin-Layer Chromatography (HPTLC) System. R.L. Lindroth, K.F. Raffa, D.M. Norris, B.H. McCown, & W.H. Karasov.

2. Remodeling grants, UW: 1987. $1,000. Chemical safety hood; 1993. $29,900 Gypsy moth quarantine facility; 1995, $1350. Bark beetle rearing; 1996: $7550. Bark beetle rearing. 1997: $5,000. Bark beetle rearing. 1998: $5,000. Bark beetle rearing.

ING:

Courses

Insects & Diseases in Forest Resource Management (ENT/PP/FEM 500): 1985-2018
Plant-Insect Interactions (ENT/ZOOL/BOT 473): 1996-2018
Techniques of Scientific Presentation (ENT 601): 1990-2018

Graduate Seminars (ENT 901, 903, 905): Ecological Genetics, Plant Role in Insect Population Dynamics, Environmental Risk Assessment of Biological Control, Invasive Species, Effects of Global Climate Change on the Biodiversity and Impacts of Insects, Popular Books on Entomology and Insect-Related Themes.

Undergraduate Special Problem/Internships: ENT 399/699, ZOO 151/152, Capstone, Hilldale, HHMI: 1986, 1988, 1992, 1993, 1994, 1996, 1997, 1998, 2000, 2001, 2002 (2), 2003 (5), 2004 (3), 2005 (5), 2007, 2008 (4), 2009 (2), 2010 (2), 2011 (5)

Graduate Special Problem (ENT 699): 1987, 1995, 1999, 2002, 2004, 2007, 2008
Graduate Teaching Practicum: 1987, 1989, 1991, 1995, 1996, 2000

Forestry Resources Practicum (Team Taught): 1995-2005

Guest Lectures: Introduction to Forestry, Insect Ecology, Integrated Pest Management, Economic Entomology, Statistical Consulting, Semiochemicals, Insect Physiology, Insect Behavior, Medical Entomol., Economic Entomol., Environmental/Industrial Biotechnology, Seminar in Ecology, Basic & Applied Insect Ecology, Environ. Sustainability, Plant-Insect Interactions, Silviculture

Mentor Training

Completed Graduate Students: M.S. -25; Ph.D. -17
Current Graduate Students: 1
Graduate Student Committees: 95 +
International External Examiner: 3
Undergraduate Internship Advisees: 15
High School Advisees: 1
Completed Postdoctoral Associates: 15

Current Positions of Former Students and Postdoctoral Associates

Name	Degree	Current or Next Position
K. Klepzig	MS 1989, Ph.D. 1994	Director, Jones Ecol. Center
L. Rieske	MS 1990, Ph.D. 1994	Professor, Univ. KY
S. Codella	Ph.D 1994	Professor, Keane College
S. Krause	Ph.D 1993	Global Bus. Dev. Mngr Valent BioSciences
D. Robison	Ph.D 1993	Dean, College Agr & Life Science Iowa State Univ.
R. Hofstetter	MS 1996	Assoc. Prof., N. Arizona Univ.
K. Wallin	MS 1996, Ph.D. 2001	Dean College Arts & Sciences, N Dakota State Univ.
J. Kruse	MS 1996	Entomologist, USDA FS, Lakewood, CO
A. Chenot	MS 1997	Sales Representative, Fisher Scient. Inc.
J. Powell	MS 1998, Ph.D. 2002	Research Associate, Portland St Univ.
N. Havill	MS 1998	Research Entomologist, USDA FS.
S. Werner	MS 1998, Ph.D. 2003	Plant Protection Section Chief, WI DATCP
B. Aukema	MS, 1999, Ph.D. 2003	Prof., Univ. Minnesota

B. Aukema	MS, 2003 Biometry	Prof., Univ. Minnesota
K. Haberkern	MS 2001	High School Science Teacher, NJ.
N. Broderick	MS 2001, Ph.D.,2009	Asst. Prof., John Hopkins Univ.
N. Erbilgin	Ph.D. 2001	Professor & Dept. Chair, Univ Alberta
R. Pinski	MS 2004	Forest, Entomol., WI DATCP
R. Hoffman Gray	MS 2006	Forest Health Team Head, WI Dept. Nat. Resources
A. Kendrick	MS 2006	Private Web Graphics Co.
M. Yanek	MS 2007	Reg. Affairs Manager, Sygenta Inc.
C. Boone	Ph.D. 2009	Provincial Entomol., Nova Scotia
E. Powell	MS 2010	Yorkshire Wolds Teacher Training, E Yorkshire UK
D. Coyle	Ph.D. 2011	Assoc. Prof., Clemson Univ.
A. Lerch	MS 2013	Lomakatsi Restoration, Ashland OR
T. Johnson	MS 2013	Asst. Prof., Louisiana St. Univ
C. Mason	Ph.D. 2014	Research Scientist, USDA ARS
J. Uelmen	MS 2014	Asst. Prof., Univ. WI-Madison
J. Pfammatter	Ph.D., 2015	Research Assoc, Univ. WI-Madison
A. Krause	MS, 2016	Science teacher, Watertown High School, WI
R. Arango	Ph.D., 2016	Res. Entomol. USDA FS-FPL, Madison WI
M. Falk	MS, 2017	WI DATCP Wisconsin Gypsy Moth Coordinator
M. Howe	MS, 2017, Ph.D. 2020	Asst. Prof., Utah St. Univ.
S. Jagemann	MS, 2017	WI DATCP Plant Pest & Disease Specialist
M. Howe	MS, 2020 Biometry	Asst. Prof., Utah St. Univ.
D. Hunt	Postdoctoral Assoc. 1989	Research Entomol., Agric. Canada
S. Salom	Postdoctoral Assoc. 1989	Professor, Virginia Techn. Univ.
G. Hoffman	Postdoctoral Assoc. 1992	Research Associate, Oregon St Univ
R. Ramachandran	Postdoctoral Assoc. 1992	Chairman and Managing Director of BASF India
K. Kleiner	Postdoctoral Assoc. 1996	Assoc. Professor, York College, PA
K. Hobson	Postdoctoral Assoc. 1998	Curator, Insect Mus, Univ. OK
B. Kopper	Postdoctoral Assoc. 2003	Pest Survey Specialist, USDA APHIS
I. Delalibera	Postdoctoral Assoc. 2003	Professor, EMBRAPA Brazil
B. Aukema	Postdoctoral Assoc. 2003-5	Prof, Univ. Minnesota
Y. Cardoza	Postdoctoral Assoc. 2003-6	Res. Sci. Invaio Sciences, Inc.
A. Vasanthakumar	Postdoctoral Assoc. 2004-6	Postdoct. Assoc, Harvard Univ.
C. Boone	Postdoctoral Assoc. 2009-10	Research Assoc, Univ. Brussels
A. Adams	Postdoctoral Assoc. 2006-11	Brewmeister and Brewpub owner
E. Schwatrzberg	Postdoctoral Assoc. 2011-12	Adirondack Research Inst.
M. Jamieson	Postdoctoral Assoc. 2012-14	Assoc. Prof., Oakland Univ.

Awards/recognition to students under my supervision

Aukema, B. 1999. Entomological Society of Canada Student Research & Training Grant. $1400.
Aukema, B. 1999. WALSAA Travel Fellowship. $200.
Aukema, B. 2000, 2001, 2003. Kinney Travel Fellowship. $1300.
Aukema, B. 2001. ESA North Central Branch Graduate Scholarship. $500.
Aukema, B. 2001; 2003 ESA President's Award: Outstanding Student Presentation Runner-up, National Meetings (Sect. Cd4; Ca2,Ce,Cf1).
Aukema, B. 2002. Wisconsin Distinguished Fellowship Award: Louis & Elsa Thomsen Fellowship
Aukema, B. 2003 Western Forest Insect Work Conference Memorial Scholarship.
Boone, C. 2009. Environmental Entomology Outstanding Paper Runnerup.
Boone, C. 2010. Agricultural & Forest Entomology Outstanding Paper for 2008&2009.
Broderick, N. 2000. NSF-UW K-Infinity Fellowship $32,400.

Broderick P.E.O. 2003. P.E.A. Scholar Award $8000.
Broderick P.E.O. 2005. Kinney Travel Fellowship. $500.
Broderick P.E.O. 2006. ESA President's Award: Outstanding Student Presentation, National Meetings (Sect. C).
Cannizzo Z. 2011. Hilldale Fellowship. $4000.
Codella, S.G. 1989. Sigma Xi Research Grant. $500. Factors Influencing the Efficacy of Sawfly Chemical Defense.
Coyle, D. 2005. Wisconsin Arborists Association Graduate Student Scholarship. $400.
Coyle, D. 2006. Applied Ecological Services. $2500
Coyle, D. 2006. EPA Star Grant. $111,516
Coyle, D. 2007. Ecol. Soc Amer. Travel fellowship. $1000
Coyle, D. 2008 Ent Soc Amer. Student Activities Award, $1000.
Coyle, D. 2009 Ent Soc Amer. Outstanding Graduate Student Comstock Award, NCB.
Coyle, D. 2009 British Ecological Society. SEPG Grant. $3800.
Erbilgin, N. 1999. UW CALS WALSAA Travel Fellowship. $200.
Erbilgin, N. 2000. Kinney Travel Fellowship. $200.
Falk, M. 2014. Ent. Soc. Amer. Outstanding Video Award.
Falk, M. 2017. Ent. Soc. Amer. Outstanding Presentation Award.
Fork, M. 2007. Hilldale Fellowship. $4000.
Green, K. 1998. UW Biology Center Independent Research. $2,000.
Hoffman, R. 2005. ESA President's Award: Outstanding Student Presentation, National Meetings (Sect. C).
Howe, M. 2018. Wisconsin Ecology Outstanding Presentation Award, Spring Symposium. $300
Howe, M.. 2020 Western Forest Insect Work Conference Memorial Scholarship. $1000.
Jagemann, S. 2015, 2016. Friends of Peninsula State Park.$2000.
Jagemann, S. 2016. Soc. American Foresters Outstanding Poster, National Meetings.
Jordan, M. 2008. Hilldale Fellowship. $4000.
Klepzig, K.D. O.N. Allen Memorial Scholarship. 1991. $2,000.
Krause, S.C. Sigma Xi Research Grant. 1989. $500. Defoliation-Induced Dynamics of Evergreen and Deciduous Conifers.
Krause, S.C. UW Graduate School Domestic Travel Fellowship. 1989. $518. Patterns of Larch Defoliation by Larch Sawflies and Gypsy Moths.
Powell, E. 2008; ESA President's Award: Outstanding Student Presentation Runner-up, National Meetings.
Powell, E. 2009; International Union of Forestry Research Organizations Travel Award. $1500..
Powell, J. 2000. Ruth Dicke Award. $500.
Rieske, L.K. Sigma Xi Research Grant. 1988. $400. Pine Root Weevil complex.
Rieske, L.K. 1993. ESA President's Award: Outstanding Student Presentation, National Meetings (Sect. C).
Rieske, L.K. 1994. ESA President's Award: Outstanding Student Presentation, National Meetings (Sect. C).
Rieske, L.K. 1994. Citation of Merit, Association of Women in Science Educational Foundation. $250.
Rieske, L.K. 1995. Entomological Society of America. Outstanding Graduate Student Comstock Award, NCB.
Robison, D.J. 1988. Wisconsin Arborists Outstanding Graduate Student. $200.
Robison, D.J. Sigma Xi Research Grant. 1989. $400. Forest tent caterpillar: Role of host plant in population dynamics.
Szele, A.Z., Howard Hughes Scholars Fellowship. 1996. $4000. Effects of host monoterpenes on attraction and feeding by root- and stem- colonizing beetles in red pine.
Wallin, K. 1999. Kinney Travel Fellowship. $600.

Visiting International Students, Scientists

J. Riba, Barcelona, Spain	1992
M. Halevy, Israel	1994-95
P. Krokene, Os, Norway	1995
A. Salle, INRA Centre de Rech. d'Orléans France	2004-2005
M. Contarini, Italy	2008-2009
DeJun Hao, China	2013-2014
Zhudong Liu, China	2015-2017
Xia Hu, China	2016-2017

Mentoring of Assistant Professors

Name	Department	Current Rank
Susan Paskewitz (Chair)	Entomology	Professor
Glen Stanosz	Plant Pathology	Professor
Eric Kruger	Forest Ecology & Mgmt.	Professor
Thomas Phillips	Entomology	Professor, OK St. Univ.
Claudio Gratton (Chair)	Entomology	Professor
Cameron Currie	Bacteriology	Professor
Chris Williamson (Chair)	Entomology	Professor
Sean Shoville (Chair)	Entomology	Asst. Prof.
Christelle Guedot	Entomology	Asst. Prof.

Presentations on Teaching

1. Univ. Wisconsin, Env. History Group. Oct. 2004. Tiny teachers: Using insects as partners in education.

Instructional Grants: $98201

1. IBM, Inc. 1986. Project TROCHOS Instructional Equipment Grant. $63,81l. D. Hogg, R. Jeanne, & K.F. Raffa.
2. UW College of Agricultural and Life Sciences/Kellogg Foundation. 1988. $3300, 1 yr. Curriculum Revitalization--Computerized Instruction. D. Hogg, R. Jeanne, & K.F. Raffa.
3. UW College of Agricultural and Life Sciences. 1994. $1500. Travel award for Students Symposium at Entomological Society of America National Meeting. D. Mahr & K. Raffa.
4. WI Department of Natural Resources. 1999. Display presentation materials for gypsy moth K. Raffa. $7340.
5. UW DO-IT WebWorks. 2000. Web based instruction. $1000.
6. MO Department of Natural Resources. 1999. Display presentation materials for gypsy moth K. Raffa. $1750.
7. UW ARS Internships. 2001. Invasive root weevil species in northern Wisconsin forests. K. Raffa. $4500.
8. Hilldale Undergraduate Fellowships: 2007: $5,000
9. Hilldale Undergraduate Fellowships: 2008: $5,000
10. Hilldale Undergraduate Fellowships: 2011: $5,000

OUTREACH AND SERVICE:

Presentations

1. Wisconsin Christmas Tree Producers Association Winter Meeting, Oshkosh, WI: Root weevil pests of Christmas trees in Wisconsin, 2/87.
2. Wisconsin Christmas Tree Producers Association Winter Meeting, Oshkosh, WI: Use of attractive lures to monitor root weevil populations. 1/88.
3. Wisconsin Christmas Tree Producers Association Winter meeting, Stevens Point, WI. Techniques for sampling pine root weevils. K.F. Raffa & L.K. Rieske. 1/90.
4. Wisconsin Christmas Tree Producers Association. Pest Diagnosis Workshop, Wild Rose, WI. May, 1991.
5. Wisconsin Christmas Tree Producers Association. Summer Meeting, Milwaukee, WI. Monitoring program for pine root weevils. July, 1991.
6. Illinois Christmas Tree Growers Association Winter Meeting. February 1990, Springfield, IL. Use of baited traps for monitoring root weevil populations in Christmas tree farms. L.K. Rieske & K.F. Raffa.
7. Wisconsin Arborists Association, Annual Meeting. Oshkosh, WI: The role of stress in predisposing trees to attack by wood borers. 3/88.
8. Wisconsin Christmas Tree Producers Association Annual Meeting. Current status of gypsy moth in Wisconsin. Milwaukee, WI. Jan. 31, 1990.
9. Society of American Foresters, Wisconsin Chapter Spring Green, WI. Insects and pathogens associated with Red Pine Decline. 5/88.
10. Society of American Foresters, Wisconsin Chapter. Wisconsin Dells, WI. Causal factors in Red Pine Decline. 10/89. K. Klepzig & K.F. Raffa.
11. Green Bay, WI. Gypsy Moth Management. 3/96. K.F. Raffa & A. Diss.
12. Society of American Foresters, Wisconsin Chapter. Stephens Point, WI. Red Pine Decline. 4/00. K. F. Raffa
13. of American Foresters, Wisconsin Chapter. UW-Madison Diagnosticians' Workshop, Madison, WI. Drought and beetle problems. 5/89.
14. UW Conference on Biological Control of Insects: Forest Insects. 10/93.
15. Wisconsin Forestry Summer Tour, June 1993.
16. Wisconsin Forestry Summer Tour, June 1997.
17. Certification course for pesticide applicators, Wisconsin: Principles of forest insect control. Annual. Presentation: 1986-1998.
18. New Jersey Aerial Applicators Association: Biological basis of insecticide resistance. Cherry Hill, NJ. 1982.
19. Wisconsin Association of Vocational Agriculture Instructors Workshop on Forestry: Instructor, July 11, 1990. Madison, WI.
20. Presentations to elementary school children: 20
21. Science Fair Judge: 2
22. Wisconsin Woodland Owners Association. Pine pests. Feb., 1992., Overview of Forest Ent. Feb. 2004
23. Radio presentations: 3
24. Videos: Pesticide Applicator Training for Foresters; 1994. Case Histories of Genetic Engineering
25. Aldo Leopold Chapter of the Society for Conservation Biology: An inventory of subcortical wood boring insect species and their predators B. Aukema & K. Raffa, November 7, 1998.
26. Dane Co. Garden Expo, Feb. 1999, 2002, 2005, 2006.
27. Dane Co. Tree Board. March 1999. The gypsy moth threat in urban communities.
28. Janesville Rotary Club, for Chancellor's Speakers Bureau. Oct. 2000. Gypsy moth in Wisconsin.
29. Wisconsin Plant Pest Survey Summit. Jan. 2004. Red pine pocket decline. KF Raffa.

30. Wisconsin Plant Pest Survey Summit. Jan. 2004. Silvicultural approaches to managing gypsy moth impacts in northeastern Wisconsin. KF Raffa & R. Hoffman
31. Wisconsin Plant Pest Survey Summit. Jan. 2005. Red pine pocket decline. KF Raffa.
32. Wisconsin Plant Pest Survey Summit. Jan. 2006. Red pine pocket decline. KF Raffa, R Murphy, A Costa.
33. Wisconsin Plant Pest Survey Summit. Jan. 2007. Jack pine budworm on red pine. KF Raffa.
34. Wisconsin Plant Pest Survey Summit. Jan. 2007. Role of roor herbivory, fungal infection, and mortality to bark beetles in Red Pine Decline. KF Raffa.
35. Wisconsin Plant Pest Survey Summit. Jan. 2007. Red pine pocket mortality vegetation impacts. R. Murphy & KF Raffa.
36. Wisconsin Plant Pest Survey Summit. Jan. 2008. Eruptive bark beetles in western conifer forests: Implications to natural resource management and Great Lakes region forests. KF Raffa.
37. UW Dept Entomology Centennial. Apr. 2009. Forest Insects: Studying their Biology to Improve Resource Management.
38. Wisconsin Plant Pest Survey Summit. Jan. 2019. Mountain pine beetles, gypsy moths, and ticks. KF Raffa.
39. Wisconsin Plant Pest Survey Summit. Jan. 2010. Preliminary results of red pine pocket mortality. R. Murphy & KF Raffa.
40. Wisconsin Plant Pest Survey Summit. Jan. 2010. Deer tick abundance in central and southern Wisconsin: Implications for tick management and Lyme Disease risk. D Coyle, S Paskewitz & KF Raffa.
41. River Edge Nature Center Advisory Board. Jan. 2011. Biological control of emerald ash borer in Wisconsin. KF Raffa.
42. Wisconsin Plant Pest Survey Summit. Jan. 2011. Biological control of emerald ash borer in Wisconsin. KF Raffa.
43. Biological control of emerald ash borer in Wisconsin. May, June 2011. Multiple radio interviews, newspaper interviews, press releases, field demonstration for press. Milwaukee Journal Sentinel, Oshkosh Northwestern, USA Today, Wisconsin Public Radio, Fox News, others.
44. Wisconsin Plant Pest Survey Summit. Jan. 2012 Update on biological control of emerald ash borer in Wisconsin. T. Johnson & KF Raffa.
45. Wisconsin Plant Pest Survey Summit. Jan. 2012. Effects of global warming on forest tent caterpillar egg hatch E. Schwartzberg, KF Raffa, P. Reich, & R. Lindroth
46. Preventing invasive insects and pathogens affecting Wisconsin's forest resources. March 2012. Wisconsin Council on Invasive Species.
47. Preventing invasive insects and pathogens reaching Wisconsin's forest resources. May 2013. Wisconsin Council on Invasive Species.
48. Science for Everyone. West Bend, WI. Nov 25, 2103. TD Johnson, JP Lelito & KF Raffa. Emerald ash borer biological control in Wisconsin: field and laboratory research.
49. Wisconsin Plant Pest Survey Summit. Jan. 2013. EAB Biological Control: Evaluation of Field Releases and Laboratory Studies of Wasp Host-Location Behavior. T Johnson & KF Raffa.
50. Wisconsin Plant Pest Survey Summit. Jan. 2014. Mountain pine beetle colonization in Wisconsin: Attraction of Potential Natural Enemies. A Krause & KF Raffa.
51. Wisconsin Plant Pest Survey Summit. Jan. 2014. Biological control of Emerald Ash Borer in Wisconsin: Field and laboratory research. KF Raffa, T Johnson & J Lelito.
52. Wisconsin Plant Pest Survey Summit. Jan. 2015. Climate change impacts: Phenological asynchrony in tree –insect interactions. M. Falk, R. Lindroth & K. Raffa.
53. Wisconsin Plant Pest Survey Summit. Jan. 2015. Bacteria associated with red turpentine beetle. M. Howe & K.F. Raffa.
54. West Madison Lions Club. Nov. 2016. Tree-Killing Bark Beetles, Biology, impacts, and resource management choices. KF Raffa

55. Wisconsin Plant Pest Survey Summit. Feb. 2017. Effects of phenological asynchrony of aspen – Lepidoptera interactions. Feb. 2017. M. Falk, R. Lindroth & K. Raffa.
56. Michigan Arborists Society. Feb. 2017. Seasonal abundance of oak wilt vectors in Wisconsin. S. Jagemann & K. Raffa.
57. Friends of Peninsula State Park. July 2017. Seasonal abundance of oak wilt vectors in Wisconsin. S. Jagemann & K. Raffa.
58. Ontario Oak Wilt Workshop. September 2017. Seasonal abundance of oak wilt vectors in Wisconsin. S. Jagemann, J. Juzwik, P. Tobin, & KF Raffa.
59. Wisconsin Plant Pest Survey Summit. Jan. 2018. Seasonal activity and degree day models of oak wilt vectors in Wisconsin. K.F. Raffa.
60. Podcast: Tree Defense. U FL. ProForest Podforest Ep. 8. April 2025.

Publications and Reports for General Public, Government Agencies, Commodity Groups, Professional Societies

1. Clerke, W.H., & K.F. Raffa. 1973. Evaluation of a Southern Pine Beetle outbreak area comprising portions of the Glenwood, R.D., Jefferson, N.F., the Pedlar R.D., George Washington N.F., and the James River District, Blue Ridge Parkway, VA. USDA FS Res. Stn. Rep. No. 74-l04.
2. Clerke, W.H., & K.F. Raffa. 1973. Evaluation of a Southern Pine Beetle infestation at the Uwharrie, N.F., N.C. USDA FS Res. Stn. Rep. No. 74-l05.
3. Goulding, H.A., D.J. Hall, K.F. Raffa, & A.J. Martin. 1988. Integrated Pest Management Manual for Pine Pests in Wisconsin.
4. K.D. Klepzig & J. Cummings Carlson. 1988. How to identify Red Pine Pocket Decline & Mortality, USDA For. Serv. NA-GR-19.
5. Worf, G., K.F. Raffa, J. Doll, J. Carlson, N. Neher, & R. Flashinski. 1988. Pest management principles for the commercial applicator. Forest Crop Pest Control. 2nd Edition. Univ. WI. Coop. Ext. Serv., Madison.
6. K.F. Raffa & L. Rieske. 1989. "See No Weevil." Michigan Christmas Tree Journal 31:30-33.
7. K.F. Raffa & L. Rieske. 1989. A new approach to pine root weevil management. Wisconsin Christmas Tree Producers Association Quarterly Journal 4:19-23.
8. Raffa, K.F. 1991. Where next for plant-insect interactions? Bull. Ecol. Soc. Amer. 72:127-130.
9. Raffa, K.F. 1991. Review: Natural enemies of forest insect pests. Environ. Entomol. 20:1734.
10. Rieske, L.K., S.A. Katovich, & K.F. Raffa. 1992. How to identify Introduced Basswood Thrips. USDA FS NA-FR-1-92.
11. Stanosz, G., K.F. Raffa, R. Flashinski, & D. Wixted. 1993. Pest management principles for the commercial applicator. Forest Crop Pest Control. 3rd Edition. Univ. WI. Coop. Ext. Serv., Madison.
12. Stanosz, G., K.F. Raffa, R. Flashinski, & D. Wixted. 1993. Pest management principles for the commercial applicator. Forest Crop Pest Control. Study Guide. Univ. WI. Coop. Ext. Serv., Madison.
13. Raffa, K.F. 1994. Book Review: Insect-Plant Interactions, Vol. 4: Environ. Entomol. 23:1354.
14. Robison, D.J., & K. F. Raffa. 1996. Importance of cutting diameter and method of production on early growth of hybrid poplar. USDA FS Tree Planters Notes. 47:76-80.
15. Raffa, K.F. 1998. Recent happenings in biological control of forest insects. Midwest Biological Control Newsletter. Vol. 5 (3).
16. Raffa, K.F. 1998. Book Review: Frontiers of Population Ecology.

17. Aukema, B.H., & K.F. Raffa. 1999. Subcortical wood boring insects and their predators. Badger Army Ammunition Biological Survey report. Janine R. Clemmons, ed.
18. McCullough, D.G., K.F. Raffa, & C. Williamson 1999. Natural enemies of the gypsy moth: The good guys. MSU. Ext. Bull. F-2700.
19. University of Wisconsin Arboretum Research Report, 1998. Host plant effects on the synergism of *Bacillus thuringiensis* subsp. *kurstaki* against gypsy moth (Lepidoptera: Lymantriidae) larvae by zwittermicin A. Green K.M., & K.F. Raffa. pgs 6-7, in Milbauer, M.L., L. Savides, & M. Leach (eds).
20. Strauss, S.H., Raffa, K.F. & List, P.C. 2000. Ethical guidelines for using genetically engineered trees in forestry. J. For. 98: 47-48.
21. Raffa, K.F. 2000. Book Review: Physiology and Genetics of Tree - Phytophage Interactions. Entomol. Experiment. et Applic. 96: 87.
22. Reports to DNR, APHIS:
    a. Effects and persistence of *Bacillus thuringiensis* subsp. *kurstakii* on nontarget Lepidoptera
    b. Status of native natural enemies of gypsy moth in Wisconsin
    c. Geographic overlap of Karner Blue Butterfly and gypsy moth in Wisconsin
    d. Kiln drying requirements for prevention of wood borer introduction into US (APHIS)
23. Berenbaum,M., et al. 2000. The Future of Pesticides in US Agriculture. National Research Council. NRC Press, Washington DC. 301 Pp.
24. Wagner, M., Clancy, K. & K.F. Raffa 2006. Dan Benjamin, In Memoriam. North American Forest Insect Work Conference
25. Simard M, E N Powell, J M Griffin, K F. Raffa, & M G. Turner. 2008 Annotated Bibliography for Forest Managers on Fire-Bark Beetle Interactions. USFS Western Wildlands Environmental Threats Assessment Center: http://www.fs.fed.us/wwetac/publications.html
26. Carroll, AL, BH Aukema, KF Raffa, DA Linton, GD Smith, & BS Lindgren. 2008. Mountain pine beetle outbreak development" the endemic-epidemic transition. Canadian Forest Service Mountain Pine Beetle Initiative Project 1.03. 22 pp.
27. Simard, M., J. Griffin, E. Powell, M. Turner, K. Raffa, P. Townsend, D. Tinker, W. Romme. 2008. Field trip guide for Joint Intern. Assoc. Wildland Fire and Nat. Park Service 9th Bienniel Scient. Conf. on Greater Yellowstone Ecosystem: The '88 Fires and Beyond. 45 pp. www.fs.fed.us/wwetac/publications/WWETAC_Fire-BB_InterX_25Feb2008.pdf
28. Raffa KF, Aukema B, Bentz BJ, Carroll A, Erbilgin N, Herms DA, Hicke JA, Hofstetter RW, Katovich S, Lindgren BS, Logan J, Mattson W, Munson AS, Robison DJ, Six DL, Tobin, PC, Townsend PA & Wallin KF. 2009. A literal meaning of forest health safeguards against misuses and misapplications. J. Forestry. 107: 276-277
29. Murphy R, K Raffa, & J Cummings-Carlson. 2010. Red Pine Pocket Mortality Landowner and Manager Update. WI DNR.
30. Raffa KF. 2014. Introduced Basswood Thrips (*Thrips calcaratus* Uzel) (Thysanoptera: Thripidae). Chpt. 23 in Van Driesche R & Reardon RC. The use of classical biological control to preserve forests in North America. USDA FS. FHTET-2013-2. Morgantown, WV.
31. Raffa, KF. 2014. A tale of convergence. 40th Anniversary of JCE. J. Chem. Ecol. 40: 415-416.
32. Brown J, Raffa KF & Miller R. 2019. Obituary: Alan A. Berryman. American Entomologist. July, 2019
33. Hlásny T, Krokene P, Liebhold,A, Montagne-Huck C, Müller J, Quin H, Raffa K, Schelhaas Seidl R, M-J, Svoboda, & M, Viiri H. 2019. Living with bark beetles: impacts, outlook and management options. EFI Science to Policy Series. Czech. Rep. 50 pp.
34. Cansler CA, Hood SM, Varner JM, van Mantgem PJ, Agne MC, Andrus RA, Ayres MP, Ayres BD, Bakker JD, Battaglia MA, Bentz BJ, Breece CR, Brown JK, Cluck DR, Coleman TW, Corace RG, Covington WW, Cram, DS Cronan JB, Crouse JE, Das AJ, Davis RS, Dickinson DM, Fitzgerald SA, Fulé PZ, Ganio LM, Grayson LM, Halpern CB, Hanula JL, Harvey BJ,

Hiers JK, Huffman DW, Keifer MB, Keyser TL, Kobziar LN, Kolb TE, Kolden CA, Kopper KE,, Kreitler JR, Kreye JK, Latimer AM, Lerch AP, Lombardero MJ, McDaniel VL, McHugh CW, McMillin JD, Moghaddas JJ, O'Brien JJ, Perrakis DDB, Peterson DW, Prichard SJ, Progar RA, Raffa KF**,** Reinhardt ED, Restaino JC, Roccaforte JP, Rogers BM, Ryan KC, Safford HD, Santoro AE, Shearman TM, Shumate AM, Sieg CH, Smith SL, Smith RJ, NL, Stuever M, Stevens JT, Stoddard MT, Thies WG, Vaillant NM, Weiss SA, Westlind DJ, Woolley TJ & Wright MC. 2020. The Fire and Tree Mortality Database for empirical modeling of individual tree mortality after fire. Fire and Tree Mortality Database (FTM). USFS Research Data Archive. In press. doi:10.2737/RDS-2020-0001.

35. Panuska, J, Gray R, Jentz SM, Juzwik J, Raffa KF, Tobin PC & Scanlon K. 2021. Oak Wilt Vectors Thermal Emergence Model. Univ. WI Extens. Ag. Weather.

Administrative Services:

University

Departmental Committees

Long-Range Planning Committee. 1987-1996; 2003-05; 2006-07.
Merit (Salary) Committee: 1990-1992; 1995-1998; 2002-05; 2016
Faculty Advisor Entomology Club. 1987-1988.
Coordinator, Gypsy Moth Quarantine Facility. 1988-present.
Co-chair Colloquium Committee. 1989-1990, 1994-1995, 2001-02
Insect Collections Committee. 1989-1991.
Research Committee. 1990-1992 (Chair); 1995-2001; 2004-05 (Chair); 2006-2007 (Chair), 2009-2010 (Chair)
Academic Affairs Committee 1993-1994; 1997-2000; 2002–2003; Chair 2003
Extension & Applied Research Committee: 1999-2001.
Computer Committee 2005 - 2006.
Faculty Mentor Committees: 9
Search and Screen Committees: 24 (Chair: 2)
Awards Committee (Chair): 2007 – present
Assoc. Dept. Chair: 2016-2017.

University and College of Agricultural & Life Sciences Offices

College of Agric & Life Sciences Greenhouse Comm, 1986-1992; 1996-2002.
Faculty Senate, 1987-1991; 2002-2009
Biometry Faculty, College of Agricultural and Life Sciences, 1987-present. Chair: 1998-2002.
Biometry MS Executive Committee: 1993-2005. Biometry Review Team: 2008-2009.
Pound Research Award Committee, 1991-1998.
Spitze Award Committee: 1996-1998; 2000, 2004, 2005.
Campus Plant Growth Facilities: 1992-1994.
College of Agricultural & Life Sciences Research Advisory Committee: 1992-1995.
Hatch Awards subcommittee; 1993-1995.
Chair, CALS Implementation Committee on Research Programs. 1993-1995.
CALS Master Plan Oversight Committee. 1993-1997.
Biotron Committee: 1993-2002.
Center for Integrated Agricultural Systems, Steering Committee. 1993-2000.
CALS Policy Committee on Departmental Advisory Boards. 1993-1994.
CALS Hatch Proposals Review Panel, 1994-1995.

CALS Instructional Greenhouse Committee, 1995-2000.
CALS General Awards Committee, Chair: 1995-1998.
Agricultural Research Stations Committee: 1995-1998.
UW Ecology Advisory Committee: 1995-1998.
Hilldale Undergraduate Research Award Committee: 1996
Alternative Pest Management Institute Steering Committee. 1996-1999.
CALS Issues Forum Committee. 1998.
Chancellor's Speakers Bureau. 1999 - 2003.
CALS Undergraduate Honors Program Committee: 1999 - 2003.
CALS Task force on Natural Resources Program, Co-Chair: 2000 - 2001.
CALS Academic Planning Council 2013-2016.
UW Quant. Genetics Curriculum Comm: 2000.
UW Biological Sci. Div. Strategic Planning Exec. Comm: 2000 - 2003.
Madison Ecology Group: 1996 – present; Chair Activities Comm. 2005, 2006.
Agroecology Cluster Core Search Committee: 2001-2002
Biological Sciences Fellowship Committee: 2002 – 2004.
Entomology Building Committee: 2002-2005.
Invasive Species Cluster: Core Search Committee: 2002-2005.
Community Ecol Comm. 2002-2005.
Research Advisory Committee: Hatch & McIntire-Stennis Review Panel: 2003
Symbiosis Steering Committee: 2005 - present
Arboretum Committee: 2005-2009; Master Plan Task Force; Research Committee; Chair, Ecologist hiring committee: 2007.
Lakeshore Nature Preserve Committee: 2006-2007; 2012-2015.
Space and Facilities Committee: 2010-present.
Center for Culture, History & Environ, Gaylord Nelson Inst. for Environ. Studies: 2010-pres
Population Genetics Search Committee: 2011
UW Vilas Res. Prof. Award Comm. 2015.
Chair, CALS Thomsen WDGF & Senator Caldwell Grad. Fellowship Committees
Chair, CALS Committee on writing guidelines for mentoring pretenured faculty: 2017.

State and Local

Entomological Society of America, Organizing Committee, Pacific Branch Meeting. June 1980. Sub-committee on symposium on Insect Chemical Communication.
Insect Neurobiology Symposium, Organizing Committee, Wilmington, DE. 1982.
Wisconsin Gypsy Moth Committee, 1985 - 1991.
Wisconsin IPM program for Christmas trees, 1990 - 1995
Wisconsin Advisory Committee on Gypsy Moth Management Funding Strategies.1992.
WIDATCP environmental impact assessment of Entomophaga maimaiga. 1992.
Wisconsin Gypsy Moth Strategic Planning Committee. 1992 - 1993.
Advisory Committee on Implementing Biological Control of Gypsy Moth in Wisconsin. 1993 - 2020.
Wisconsin Gypsy Moth Scientific Advisory Committee 1993-1996.
Wisconsin Gypsy Moth Coordinating Committee. 1996-2020.
Wisconsin Council on Invasive Species. 2003-2018; Research Subcommittee Chair 2003-2011. Organized and moderated strategic planning session on prevention. March 2012.
Wisconsin Emerald Ash Borer Coordinating Committee: 2007-2020.
City of Madison Habitat Stewardship Committee, Vice-Chair: 2007-08.
Wisconsin Statewide Forest Action Plan, Feb. 2019 - Dec. 2020.

National / International

Panels

USDA CSRS Competitive Grants: Insect Pest Science Panel, 1986, 1987.
NSF Competitive Grants: Ecology Panel, 1994-1999
USDA FS Gypsy Moth R & D National Review Panel, 1992.
USDA FS Rocky Mtn. Forest & Range Exp. Stn. 1989, 1992, 2003.
CSRS Review Team:, Univ. Minnesota Dept. Entomol., April 1994
CSRS Review Team: North Carolina St. Univ. Dept. Entomol., Oct. 2001.
National Center for Ecological Analysis and Synthesis: Tree Mortality: 2013

Editorial Boards.

Associate Editor, Forest Science. 1996-1998.
Associate Editor, Ecology. 2001-2020.
Subsection Assoc. Editor, Envrion. Entomol. 2008 -2011

National Research Council: Study Committee on Future of Pesticides in Pest Management in U.S. Agriculture and Forestry: 1997-2000.

APHIS Steering Committee on Tree Biotechnology. 2003-2004.

ESCOP/ACOP Leadership Development Program, 1994

Manuscript Reviews (Selected)

BioScience, Ecology, Oecologia, Oikos, PNAS, New Phytol,, Amer. Naturalist, Funct. Ecol, Biotropica, Ecological Monographs, Ecological Applications, J. Chem. Ecol., Environ. Entomol., Ecological Entomol, Annals Entomol. Soc. Amer., Env. Biosafety Research, J. Agr. Entomol., Can. Entomol., J. Econ. Entomol., J. Entomol. Sci., Amer. Entomol., J. Insect Behavior, Entomol. Exp. Applic. The Great Lakes Entomol., Trees, Forest Science, Can. J. For. Res., Scan. J. For. Res., Silva Fennica, Northern J. Applied Forestry, J. Tropical Forestry, Life Sciences, J. Pharmacology Letters, Crop Science, International Journal of Pest Management, Tree Physiology, Annals For. Sci., Beh. Ecol. & Sociobiol, Trends in Microbiol., Can. Ent., PlosOne, PNAS, Environ. Microbiology, Forest Ecol & Management.

Grant Proposal Reviews (Selected)

USDA Competitive Grants: Insect Pest Science, USDA Competitive Grants: Forestry and Rangeland Renewable Resources, USDA Competitive Grants: Environmental Rich Assessment of Genetic Engineering, NSF: Ecology, USDA Forest Service Research Work Unit FSM 4072, McIntire-Stennis: Reviewer & Committee Chair, Hatch, Center for Environ. Management., Tufts Univ, Formas Sweden, Ohio St. Univ.

Personnel Reviews (Selected)

USDA FS Progress Reviews: 1992, 1998, 1999 (2), 2003, 2009
Extramural Tenure & Promotion Reviews: 10

Policy Reviews

USDA Environmental Assessment of Imported Timber
USDA FS Forest Decline Initiative
U.S. Dept. Interior: Monocultures (litigation). 1997.
USDA FS R&D Review of Invasive Species. Chair. 2006.

Regional Committees

Wisconsin representative to Regional Project W110-W187, "Interactions between bark beetles, pathogens, and conifers in North American forests." 1986-2015. Secretary 1989, 1995, 2005, 2008-2009; Chair 1990, 1996, 2011.

Wisconsin co-representative to Regional Project NE-143, "Biological Control of the Gypsy Moth." 1990-1992.

Wisconsin representative to Regional Technical Committee NCT-212, "Ecology and Impact of Gypsy Moth Invasion." 1992-1998. Vice Chair 1992-1994. Chair 1995-1996.

Forest Genomics Project, Can. ($11,000,000 C) Advisory Board (6 memb): 2005-2010.

Common Names Author to Entomological Society of America: 2 species.

Awards Committees:

Western Forest Insect Work Conference Founders Award Committee: 2008-2018.

Successful Awards Nominations:

Founder's Award, Western Forest Insect Work Conference 2007. Boyd Wickman

Silverstein-Simeone Lect. Award, Intern.Soc. Chemical Ecology 2008. Rick Lindroth

Founder's Award, Western Forest Insect Work Conference 2009: Jesse Logan

Founder's Award, Western Forest Insect Work Conference 2017: Nancy Gillette

Conference Program Committee, Moderator, Symposium Organizer:

Moderator, Entomological Society of America National Meetings, Biological Control Section. San Antonio, Texas. December 1989.

Organizer and Moderator Semiochemicals--Application and Potential, North American Forest Insect Work Conference, March 25-28, 1991. Denver, CO.

Moderator, Management of Gypsy Moth in the Great Lakes Region, North Central Forest Pest Workshop. Kellogg, MI. Oct. 1992.

Organizer and Moderator International Union of Forestry Research Organizations, 1994: Mechanisms of Woody Plant Defense against Insects. "Endophagous Poorly Mobile Herbivores" International Union of Forestry Research Organizations, 1994: Organizer and Moderator Population Dynamics of Forest Insects. "Biology and Implementation of Bark Beetle Natural Enemies"

Organizer and Moderator Second North American Forest Pest Workshop, "Insect-Host-Tritrophic Interactions," April, 1996. San Antonio, TX.

Organizer and Moderator National Forest Pest Workshop. Plant-Insect and Tritrophic Interactions.

Program and Organizing Committee, International Symposium on Applications of Biotechnology to Tree Culture, Protection, and Utilization. Aug 5-8, 1991, Delaware, OH.

Organizer and Moderator, International Symposium on Natural Enemies and Biological Control of Bark Beetles. Feb. 1994, Maui, Hawaii.

Organizer and Moderator, Second Workshop on Bark Beetle Genetics 1999: K.F. Raffa & J. Hayes. 1999.

Organizer and Moderator: Workshop on natural enemies of bark beetles. Combined Western Forest Insect and Western Forest Disease Work Conference. Breckenridge, CO, 1999.

Organizer: Workshop on gypsy moth research in the midwest. USDA Interagency Gypsy Moth Research Forum. Annapolis, MD 2001

Organizer and Moderator: Workshop on population dynamics of bark beetles. North American Forest Insect Work Conference, May, 2001. Edmonton, BC.

Program Committee, North Central Forest Pest Work Conference, 2005.

Organizer and Moderator: Workshop on Symbiosis. Western Forest Insect Work Conference, April, 2008. Boulder, CO. D. Six & K. Raffa

Moderator: Student Presentations. Western Forest Insect Work Conference, April, 2008. Boulder, CO. D. Six & K. Raffa

Organizer and Moderator: Section Symposium: Metamorphosis by fusion: plant-insect interactions, forest entomology, and the unifying contributions of William J. Mattson. National Meetings of the Entomological Society of America, Dec, 2008. Reno, NV. D. Herms & K. Raffa

Organizer and Moderator: Section Symposium: Insect-Symbiont Interactions: A Metamorphosis in Perspectives. National Meetings of the Entomological Society of America, Dec, 2008. Reno, NV. K. Klepzig & K. Raffa

Field Trip: Joint Intern. Assoc. Wildland Fire and Nat. Park Service 9th Bienniel Scient. Conf. on Greater Yellowstone Ecosystem 2008. Simard, M., J. Griffin, E. Powell, M. Turner, K. Raffa, P. Townsend, D. Tinker, W. Romme.

Internat. Soc. Symbiosis Congress. 2009. Program Section Organizer and Moderator: Complex Interactions in a Changing Environment.

North Central Forest Pest Work Conference Program Committee. 2009-2010.

North American Forest Insect Work Conference Program Committee. 2010-2011.

Fourth Workshop on Genetics of Bark Beetles and Associated Microorganisms Scientific Committee. 2010-2011.

Co-Organizer and Moderator: Disturbance Interactions. North American Forest Insect Workshop , May, 2011. Portland, OR. K. Kandhi, B. Bentz, & K. Raffa.

Co-Organizer and Moderator: Bark Beetle Genetics. North American Forest Insect Workshop , May, 2011. Portland, OR. B. Bentz, & K. Raffa.

Co-Organizer and Moderator: Mechanisms of tree defense across forest insect feeding guilds: Can a comparative approach help predict responses to climate change? International Union of Forest Research Organizations World Congress. Oct. 2014, Salt Lake City, UT. BJ Bentz & KF Raffa.

Organizer and Moderator: High elevation pine ecosystems. May 2017. Western Forest Insect Work Conference. Jackson Hole, WY.

Organizer and Moderator: High elevation pine ecosystems. May 2017. Western Forest Insect Work Conference. Jackson Hole, WY.

Organizer and Moderator: Sustaining ecological services and preservation in an era of climate change, fragmenting boundaries, and intensifying native & invasive disturbances. Raffa KF & Bentz BJ. Sept,19-22, 207. International Union of Forest Research Organizations. Freiburg, Germany.

Visiting Scientists

A. Camacho, Univ. Mexico City	1997 - 1998
M. Wagner, Northern Arizona University	1996
J. Hayes, USDA FS, Pineville, LA	1996, -1997
M. Michelozzi, Florence, Italy	1996 -1997
L. Kirkendall, Bergen, Norway	1993 - 1994
K. Hobson, Christchurch, New Zealand	1998
A. Salle, France	2004 - 2005
M. Mueller, Germany	2010
D. Hao, China	2015-2015
Z. Liu, China	2015-2016; 2017
X. Hu, China	2017

Conference Grants: $45,000

1. USDA Competitive Grants, Insect Pest Science/Forest Service, 1989. $35,000. 1 yr. Work Conference: Critical research issues in the management of pine bark beetles. T. Payne, C.W. Berisford, & K.F. Raffa.
2. National Institute of Biological Control, 1993. $10,000. 1 yr. Symposium on Natural Enemies and Biological Control of Bark Beetles. K.F. Raffa & D. L. Dahlsten.

Professional/Scientific Organizations

Ecological Society of America
Entomological Society of America
International Society of Chemical Ecology
International Union of Forestry Research Organizations
Plant/Insect Interaction Work Grouping; 1982-present, Insects Affecting Reforestation Working Group; 1986-present, Bark Beetle Working Group; 1988-present, Population Dynamics Working Group: 1989-present, Integrated Management of Forest Defoliating Insects Working Group; 1993-present.
Sigma Xi
Society of American Foresters