**Tobin D. Northfield**

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**Education**

**Ph.D., Entomology**, Washington State University, Pullman, WA. May 2011.

**M.S., Statistics**, Washington State University, Pullman, WA. August 2011.

**M.S., Entomology**, University of Florida. August 2005.

**B.S., Biology**, Pacific Lutheran University. August 2003.

**Academic positions**

Aug. 2018 – present Assistant Professor, Department of Entomology, Washington State University.

Jan. 2018 – July 2018 Senior Lecturer, Level C, College of Science and Engineering, James Cook University.

June 2013 – 2017 Lecturer, Level B, College of Science and Engineering, James Cook University.

2011 – June 2013 USDA Postdoctoral Research Fellow, Dept. of Zoology, University of Wisconsin [Mentors: Anthony Ives (UW) and Jay Rosenheim (UC Davis)].

2005 - 2007 Research Associate, Dept. of Entomology, University of Florida (Mentor: Russ Mizell III).

**Teaching Experience (WSU)**

Fall 2023 Statistical Methods for Graduate Researchers (STAT/AFS 511), WSU. 4 credits. Taught over Zoom.

Fall 2022 Statistical Methods for Graduate Researchers (STAT/AFS 511), WSU. 4 credits. Taught over Zoom. Percent of students rating as “High” or “Very High” quality: instructor: 80%, course: 77%.

Fall 2021 Co-taught (With David Wheeler) Statistical Methods for Graduate Researchers (STAT/AFS 511), WSU. 4 credits. Median evaluation scores: instructor (mean: 3.6, mean: 3.5), course (mean: 3.9, median: 4.0).

Fall 2020 Coordinator, Applied Ecology (ENTOM 590), WSU. 2 credits. Median evaluation scores: instructor (mean: 4.7 out of 5, median: 5), course (mean: 4.4, median: 5).

Fall 2019 Coordinator, Applied Ecology (ENTOM 590), WSU. 1 credit. Median evaluation scores: instructor (mean: 4/5, median: 4/5), course (mean: 3.7, median: 4.0).

**Teaching Experience (previous, JCU)**

SP 1, 2018 Coordinator, Lecturer: Australian Terrestrial Diversity (BZ2725/5925). James Cook University.

SP 1, 2018 Lecturer: Quantitative Methods in Science - Advanced (SC2209). James Cook University.

SP 3, 2018 Coordinator, Lecturer: Tropical Entomology (BZ3745/5745). James Cook University.

SP 2, 2017 Coordinator, Lecturer: Invertebrate Biology (MB2080/5380). James Cook University.

SP 2, 2017 Lecturer: Field Ecology (MB3225/55225). James Cook University.

SP 2, 2017 Lecturer: Modeling Natural Systems (SC1102). James Cook University.

SP 2, 2017 Coordinator, Lecturer: Modeling Natural Systems - Advanced (SC1109). James Cook University.

SP 3, 2017 Coordinator, Lecturer: Entomology (BZ3745/5745). James Cook University.

SP 2, 2016 Lecturer: Field Ecology (MB3225/55225). James Cook University.

SP 2, 2016 Coordinator, Lecturer: Invertebrate Biology (MB2080/5380). James Cook University.

SP 3, 2016 Coordinator, Lecturer: Entomology (BZ3745/5745). James Cook University.

SP 2, 2015 Coordinator, Lecturer: Invertebrate Biology (MB2080/5380). James Cook University.

SP 3, 2015 Coordinator, Lecturer: Entomology (BZ3745/5745). James Cook University.

SP 2, 2014 Coordinator, Lecturer: Invertebrate Biology (MB2080/5380). James Cook University.

SP 3, 2014 Coordinator, Lecturer: Entomology (BZ3745/5745). James Cook University.

**Graduate and Postdoctoral Project Mentoring (WSU)**

Postdoctoral researcher: W. Jacob Pitt (2023-current), Rob Curtiss (2023-current), Dylan Beal (2021-current), Adrian Marshall (2020-2023).

PhD: Cesar Reyes Corral (2020-current), Aldo Hanel (2021-2024).

MS: Peter Smytheman (Fall 2021-current), Laura Flandermeyer (WSU, 2022-2024), Abigail Clarke (2019-2021), Jeremy Roberts (2020-2022).

Graduate committees: Current: Salena Helmreich (PhD), Mario Luppino (PhD), Emily Rampone (PhD), Olivia Shaffer (PhD), Robert Czokajlo (MS), Completed: Down Jocson (PhD), Jim Hepler (PhD), Ben Lee (PhD), Paul Bergeron (PhD), Megan Blance (MS), Misty Rex (MS in Ag), Maggie Freeman (MS).

**Graduate and Honours Project Mentoring (JCU)**

PhD: Amy McGuire (JCU, co-advised, 2020-2024), Edward Evans (JCU, 2018- 2022), Samantha Forbes (JCU, 2017-2024), Ryan Orr (JCU co-advised, 2017-2022), Olivia Rowley (JCU, co-advised, 2017- 2021), Hemchandranauth Sambhu (JCU, 2014- 2017).

MSc: Desiree Gowell (JCU, finished 2016), Samantha Forbes (JCU, finished 2015)

Honours (JCU): Amy McGuire (finished 2018), Alfonso Moreno (co-advisor, finished 2018), David Clarke (finished 2016), Jade Ferguson (co-advisor, finished 2015), Alex Gangur (finished 2014).

**Undergraduate Project Mentoring (previous):**

Kristin Cole (BYU Idaho, 2012), James Milner (JCU, 2018).

**Awards (WSU)**

2024 Pacific Branch of Entomological Society of America (X-disease vector host identification team)

2021 Western Extension Directors Association Multistate Extension Award (X-disease Extension team, led by Tianna DuPont)

**Grants and Contracts (WSU)**

Total external grants and contracts as either PI or Co-PI since 2018: **$12,577,218**

(includes $4 million in congressional funding for WSU-USDA ARS cooperative research)

Total external grants and contracts as PI since 2018: **$5,195,005**

(includes $4 million in congressional funds)

Total external funds to WSU since 2018: **$3,040,733**

Total external funds to my program since 2018: **$2,290,159**

Key to contributions:

1) Provided the initial idea

2) Developed research design and hypotheses

3) Authorship of grant application

4) Developed and/or managed budget

5) Managed personnel and project activities

2023-2024 USDA-ARS/Washington State University Cooperative Agreement (year 2). Little Cherry Disease Research Partnership. (**WSU PI**, USDA ARS PI: Rodney Cooper). ($2M to USDA ARS and WSU combined, including $720k to WSU). My program’s component: $257k. (1,2,3,4,5). Ongoing congressional appropriations ($720k to WSU, $1.2M per year to USDA ARS for subsequent years).

2023-2025 USDA Specialty Crop Block Grant Project. Leafhopper phenology model development to improve cherry X-disease management. **(co-PI**, PI: Orpet**)**. $249k. My program’s component: $24.6k. (2,3,4,5).

2022-2023 USDA-ARS/Washington State University Cooperative Agreement (year 1). Little Cherry Disease Research Partnership. (**WSU PI**, USDA ARS PI: Rodney Cooper). ($2M to USDA ARS and WSU combined, including $1.107M to WSU). My program’s component: $329k. (1,2,3,4,5).

2022-2024 WTFRC Apple Crop Protection. Quantifying codling moth capture, lure plume reach, and trap area (**co-PI**, PI: Nottingham). $591k. My role is to co-advise the postdoc on the project (5).

2022-2024 USDA NIFA Crop Protection and Pest Management. Integrating vector and pathogen phenology to optimize X-disease management. (**PI**). $295k. My program’s component: $107k. (1,2,3,4,5).

2022-2024 WTFRC Cherry Research. Developing a leafhopper degree-day spray program for cherry IPM. (**co-PI**, PI: Louis Nottingham). $242,873 (primarily to fund a postdoc I’d help advise). (2)

2021-2023 USDA Specialty Crop Block Grant Project. Sustainable management of X-disease by removing weedy vector and pathogen hosts. **(PI)**. $245k. My program’s component: $189k. (1,2,3,4,5).

2021-2023 USDA Specialty Crop Block Grant Project. Genetic insights into leafhopper/phytoplasma interactions and gene-based immunization for plant disease control. **(Co-PI)**, PI: W. Walker. $234k. My program’s component: $10k. (1,3,5).

2021-2023 USDA Postdoctoral Fellowship. The influence of gene regulation on behavior and predator susceptibility. (**Mentor**) (PI Adrian Marshall). $164,765. My program’s component: $164,765. (1,4).

2021-2022 WSU BioAg. Identifying biologically-based paths reducing insecticide resistance in codling moth. $37,734. (**PI**). My program’s component: $37,734. (1,2,3,4,5).

2021-2022 Washington State Tree Fruit Research Commission. X-disease vector identification and acquisition from low titer trees. $110,570 (**PI**) My program’s component: $106,570. (1,2,3,4,5).

2021-2023 Washington State Tree Fruit Research Commission. Coordinating SWD and X disease management. $77,437. (**co-PI**) (PI: EH Beers). My program’s component (shared with Beers): $77,437. (1,2).

2020-2022 USDA Specialty Crop Block Grant Project. Epidemiology of the X-disease phytoplasma. **co-PI** (PI: Scott Harper). $249k. My program’s component: $81,203. (2,3,4,5).

2020-2024 USDA Specialty Crop Research Initiative Project. Moving from crisis response to long-term integrated management of SWD: a keystone pest of fruit crops in the United States. (**co-PI**) (PI: Ash Sial, U of Georgia). $5.36 million. My program’s component (shared postdoc position with Beers): $369,080. (4,5).

2020-2023 Western SARE. Wigging out, then wigging in: removing earwigs from stone fruit and augmenting them in pome fruit. **co-PI** (PI: Rebecca Schmidt-Jeffris). $348,733. My program’s component (shared student with Nottingham): $195,524. (5).

2020-2022 Washington Tree Fruit Research Commission. Field evaluation of leafhopper controls for X disease management. **(PI)**. $160,393. My program’s component: $157,730. (1,2,3,4,5).

2020-2023 Washington Tree Fruit Research Commission. Identifying sources of X disease in cherry orchards. **(PI)**. $167,956. My program’s component: $158,685. (1,2,3,4,5).

2019-2020 Fresh Pear Committee and Processed Pear Committee. Enhancing pear psylla biological control through predator recruitment. **(PI)**. $51,325. My program’s component: $51,325. (1,2,3,4,5).

2019-2020 Western IPM Center Grant. Sex in the orchard: Determining mating success of sterile codling moth with molecular markers. (**co-PI**) (PI: WR Cooper). $29,724. WSU component (shared with Beers): $10,613. (5).

**Previous Grants and Awards (Prior to joining JCU)**

2017-2020 Mars Research Contract (with JCU). “Understanding cocoa (*Theobroma cacao*) pollination and its influence on productivity and the assessment of possible impacts of climate change. PI. $105,000.

2018-19 Innovations Connections. “Evaluation of *Beauveria bassiana* for rust thrips control in Australian bananas.” PI. $97,184.

2017 JCU Development Grant. “Identification of cacao pollinators.” T.D. Northfield. PI. $71,000.

2016 Research contract with Powerlink Queensland. “Evaluation of abrasive blasting of power stations on native plants and animals.” co-PI. $74,284.

2014 JCU Early Career Researcher Rising Star Award. $15,000.

2013 JCU New Faculty Research Grant. $13,000.

2011 USDA-NIFA, Postdoctoral Research Fellowship. “Complementarity between biological control agents and evolution of species interactions in a changing climate.” PI. $130,000.

**Publications and creative scholarship**

**Summary:** 65 peer-reviewed publications (62 articles, 1 book chapter). Google Scholar information: 2439 citations (1,521 since 2019), H index of 24, i10-index of 41 as of 29 April 2024.

**Summary** **since joining WSU in August 2018:** Peer-reviewed articles: 37 (27 with student/postdoc as first author). Mean impact factor: 3.5 (standard deviation: 1.8).

**Representative textbooks using my publications as examples:**

Relyea, R. 2021. Ecology: The Economy of Nature, 9th Edition. Macmillan publishing.

Cited work: Forbes, SJ, **TD Northfield**. 2017. Increased pollinator habitat enhances cacao fruit set and predator conservation. *Ecological Applications*, 27:887-899.

Mittelbach, G.G., McGill, B.J. 2019. Community Ecology, 2nd Edition. Oxford University Press.

Cited work: **Northfield, TD**, GB Snyder, AR Ives, and WE Snyder. 2010. Niche saturation defines resource-use breadth and overlap. *Ecology Letters*, 13: 338–348.

Samways, M.J. 2020. Insect Conservation: A Global Synthesis. CABI International.

Cited work: Crowder, DW, **TD Northfield**, MR Strand, and WE Snyder. 2010. Organic agriculture restores evenness and natural pest control. *Nature*, 466: 109-112.

U = Undergraduate author

H = Honours author

M = MSc author

P = PhD author

F = Postgraduate Watson research fellow

PD = Postdoc author

*Italics represent student for which I was primary or co-advisor*

**Research Publications (Peer Reviewed)**

65. Rajagopalan, K, G De-Grandi-Hoffman, M Pruett, VP Jones, V Corby-Harris, J Pireaud, R Curry, B Hopkins, **TD Northfield**. 2024. Warmer autumns and winters could reduce honey bee overwintering survival with potential risks for pollination services. *Scientific Reports*, 14: 5410. IF: 4.6

64. MClarke, AE, KA Catron, C Reyes Corral, AT Marshall, CG Adams, WR Cooper, SJ Harper, LB Nottingham, **TD Northfield**. 2024. *Colladonus* spp. (Hemiptera: Cicadellidae) vectors of X-disease: Biology and management in western United States. *Journal of Integrated Pest Management*, 15:13. IF: 4.1

63. PDMarshall, AT, TD Melton, G Bishop, AE Clarke, CA Reyes-Corral, KA Catron, LB Nottingham, **TD Northfield**. 2024. Cultural control methods improve management of leafhopper vectors of X-disease. *Crop Protection*, 175: 106445.IF: 2.8

62. PHanel, A, RJ Orpet, R Hilton, L Nottingham, **TD Northfield**, R Schmidt-Jeffris. 2023. Turning a pest into a natural enemy: Removing earwigs from stone fruit and releasing them in pome fruit enhances pest control. *Insects*, 14: 906. IF: 3.1

61. PBloom, EH, J Gutiérrez Illán, MR Brousil, JP Reganold, **TD Northfield**, DW Crowder. 2023. Long-term organic farming and floral diversity promotes stability of bee communities in agroecosystems. *Functional Ecology*, 37:2809–2825. IF: 5.2

60. PMarshall, AT, WR Cooper, WB Walker III, MR Wildung, **TD Northfield**, KL Krey, EH Beers. 2023. Salivary protein expression profiles of five species of Pentatomidae (Hemiptera). *Annals of the Entomological Society of America*, 116: 358-371. IF: 2.7

59. Harper, S, **TD Northfield**, LR Nottingham, T DuPont, AA Thompson, BV Sallato, MK Shires, AA Wright, PKA Catron, PAT Marshall, C Molnar, WR Cooper. 2023. Recovery plan for X-disease in stonefruit caused by *Candidatus* phytoplasma pruni. *Plant Health Progress*, 24: 258-295. IF: 0.42

58. P*McGuire*, *AV*, W Edwards, **TD Northfield**. 2023. The infection efficacy of *Metarhizium* strains (Hypocreales: Clavicipitaceae) against the Queensland fruit fly *Bactrocera tryoni* (Diptera: Tephritidae). *Journal of Economic Entomology*, 116: 627-631. IF: 2.4

57. P*Rowley*, *OC*, RL Courtney, **TD Northfield**, J Seymour. 2023. Physiological and morphological responses of ‘Irukandji’ polyps to thermal and osmotic conditions: Consequences for niche profiling. *Hydrobiologia*, 850: 1207-1216. IF: 2.4

56. P*Orr*, *R*, **TD Northfield**, A Pattison, PN Nelson. 2023. Soil physiochemical characteristics and leaf nutrient contents on banana farms of North Queensland, Australia. *Crop and Pasture Science*, 74: 483-493. IF: 1.5

55. Cooper, WR, WB Walker, GM Angelella, KD Swisher Grimm, MJJ Foutz, SJ Harper, LB Nottingham, **TD Northfield**, CH Wohleb, CA Strausbaugh. 2023. Bacterial endosymbionts identified from leafhopper (Hemiptera: Cicadellidae) vectors of phytoplasmas. *Environmental Entomology*, 52: 243-253.IF: 2.4

54. PDGrabarczyk, EE, TD Northfield, RF Mizell III, JK Greene, TE Cottrell, PG Tillman, PC Andersen, TC Riddle, WB Hunter. 2023. Spatiotemporal distribution of the glassy-winged sharpshooter, *Homalodisca vitripennis* (Hemiptera: Cicadellidae), in a Southeastern Agroecosystem. *Florida Entomologist*, 105: 280-286.

53. PDSmith, OM, PDMI Jocson, PBW Lee, PDRJ Orpet, PJM Taylor, PAG Davis, MCJ Reiser, *MAE Clarke*, PAL Cohen, MAM Hayes, MCA Auth, PPE Bergeron, *PDAT Marshall*, JP Reganold, DW Crowder, **TD Northfield**. 2022. Identifying farming strategies associated with achieving global agricultural sustainability. *Frontiers in Sustainable Food Systems,* 6:882503. IF: 4.9

-WSU Student Journal Group publication

52. P*Rowley*, *OC*, R Courtney, **TD Northfield**, J Seymour. 2022. Environmental drivers of the occurrence and abundance of Irukandji Jellyfish (*Carukia barnesi*). PLoS One 17: e0272359. IF: 3.8

51. Cooper, WR, PD*AT Marshall*, MJ Foutz, MR Wildung, **TD Northfield**, DW Crowder, H Leach, TC Leskey, SE Halbert, JB Snyder. 2022. Directed sequencing of plant specific DNA identifies the dietary history of four species of Auchenorrhyncha (Hemiptera). *Annals of the Entomological Society of America*, 115: 275-284. IF: 1.51

50. PDSmith, O, E Olimpi, N Navarro-González, K Cornell, **TD Northfield**, T Bowles, A Edworthy, J Eilers, Z Fu, K Garcia, D Gonthier, M Jones, C Kennedy , C Latimer, J Owen, C Sato, J Taylor, E Rankin Wilson, W Snyder, D Karp. 2022. A trait-based framework for predicting foodborne pathogen risk from wild birds. *Ecological Applications* 32: e2523. IF: 4.66

49. H*McGuire*, *AV*, **TD Northfield**. 2021. Identification and evaluation of endemic *Metarhizium* strains for biological control of banana rust thrips. *Biological Control*, 162: 104712. IF: 2.75

48. P*Orr*, *R*, A Pattison, **TD Northfield**, PN Nelson. 2021. Iron Chelates have little to no effect on the severity of Fusarium wilt of bananas in soils of the humid tropics. *Journal of Plant Pathology*, 103: 595-604. IF: 2.3

47. PDSmith, OM, JM Taylor, A Echeverri, **TD** **Northfield,** KA Cornell, MS Jones, CE Latimer, JP Owen, WE Snyder, and CM Kennedy. 2021*.* Big wheel keep on turnin’: linking grower attitudes, farm management, and delivery of avian ecosystem services. *Biological Conservation*, 254: 108970 IF: 4.7

46. Schmidt-Jeffris, R, E Moretti, K Wickings, M Wolfin, **TD Northfield**, C Linn, B Nault. 2021. Conventional soil management may promote nutrients that lure an insect to a toxic crop. *Environmental Entomology 50:* 433-443. IF: 1.6

45. **Northfield, TD**, J Ripa, AR Ives. 2021. Coevolution, diversification, and alternative stable states in two-trophic communities. *Ecology Letters*, 2: 269-278. IF: 8.7

44. PYounes, N, **TD Northfield**, KE Joyce, S Maier, NC Duke, L Lymberner, 2020. A novel approach to modelling mangrove phenology from satellite images: A case study from Northern Australia. *Remote Sensing*, 12: 4008. IF: 4.5

43. PSmith,OM, A Edworthy, J Taylor, M Jones, A Tormanen, CM Kennedy, Z Fu, C Latimer, K Cornell, L Michelotti, C Sato, **TD Northfield**, WE Snyder, J Owen. 2020. Agricultural intensification heightens food safety risks posed by wild birds. *J Applied Ecology*. IF: 5.8

42. P*Evans*, *ERJ*, L McIntyre, **TD Northfield**, NL Daly, DT Wilson. 2020. Small molecules in the venom of the scorpion *Hormurus weigiensis*. *Biomedicines*, 8: 259. IF: 4.7

41. U*Milner, JRD*, EH Bloom, DW Crowder, **TD Northfield**. 2020. Plant evolution can mediate negative effects from honey bees on wild pollinators. *Ecology and Evolution*, 10: 4407-4418. IF: 2.4

40. P*Forbes*, *SJ*, L Cernusak, **TD Northfield**, RM Gleadow, A Cheesman. 2020. Elevated temperature and carbon dioxide alter resource allocation to growth, storage and defence in cassava (*Manihot esculenta*). *Environmental and Experimental Botany*. IF: 4.0

39. Kalscits, LA, **TD Northfield**. 2020. Insect feeding location determines interactions between biotic and environmental stressors in trees. *Tree Physiology*, 40: 577-579. IF: 3.7

38. H*McGuire*, *AV*, **TD Northfield**. 2020. Tropical occurrence and agricultural importance of *Beauveria bassiana* and *Metarhizium anisopliae*. *Frontiers in Sustainable Food Systems*, 4, 6. IF: NA (new journal)

37. PSmith, OM, CM Kennedy, JP Owen, **TD Northfield**, CE Latimer, WE Snyder. 2019. Highly diversified crop-livestock farming systems reshape wild bird communities. *Ecological Applications*, e02031*.* IF: 4.2

36. P*Bloom*, *E*, **TD Northfield**, DW Crowder. 2019. A novel application of the Price equation reveals that landscape diversity promotes the response of bees to regionally rare plant species. *Ecology Letters*, 22: 2103-2110*.* IF: 8.7

-Advised the analysis while Bloom visiting my lab in Australia on an NSF Fellowship.

35. P*Forbes*, *SJ*, G Mustiga, A Romero, **TD Northfield**, S Lambert, JC Motamayor. 2019. Supplemental and synchronized pollination may increase yield in cacao. HortScience, 54: 1718-1727. IF: 1.1

34. Lashmar, N, SY Berryman, MJ Liddell, AL Morrison, LA Cernusak, **TD Northfield**, S Goosem, B Jennison. 2019. Environmental impacts of abrasive blasting of transmission towers in protected areas. Journal of Environmental Management, 252: 109430. IF: 5.6

33. PSmith, OM, PAL Cohen, PCJ Rieser, PA Davis, PJM Taylor, PAW Adesanya, DMS Jones, DAR Meier, JP Reganold, PRJ Orpet, **TD Northfield**, DW Crowder. 2019. Organic farming provides reliable environmental benefits but increases variability in crop yields: a global meta-analysis. Frontiers in Sustainable Food Systems. 3: 82. IF: NA (new journal)

-WSU Student Journal Group publication

32. PYounes, N., KE Joyce, **TD Northfield**, SW Maier. 2019. The effects of water depth on estimating fractional vegetation cover in mangrove forests. International Journal of Applied Earth Observations and Geoinformation. 83: 101924. IF: 4.7

31. P*Evans*, ERJ, **TD Northfield**, NL Daly, DT Wilson. 2019. Venom costs and optimisation in scorpions. Frontiers in Ecology and Evolution, 7: 196. IF: 2.1

30.  P*Thurman*, JH, **TD Northfield**, WE Snyder. 2019. Weaver ants provide ecosystem services to tropical tree crops. Frontiers in Ecology and Evolution, 7: 196. IF: 2.1

29. P*Sambhu*, *H*, A Nankishore, SM Turton, **TD Northfield**. 2018. Trade-offs for butterfly alpha and beta diversity in human-modified landscapes and tropical rainforests. *Ecology and Evolution,* 8: 12918-12928. IF: 2.4

**Before joining WSU in August 2018**

28. H*Ferguson*, JA, **TD Northfield**, L Lach. 2018. Honey bee (Apis Mellifera) pollen foraging reflects benefits dependent on individual infection status. Microbial Ecology.

27. **Northfield, TD**, SGW Laurance, MM Mayfield, DR Paini, WE Snyder, DB Stouffer, JT Wright, L Lach. 2018. Native turncoats and indirect facilitation of species invasions. Proceedings of the Royal Society of London B, 285: 20171936.

26. de Oliveira Roque, F, JFS Menezes, **TD Northfield**, JM Ocoa-Quintoa, MJ Campbell, WF Laurance. 2018. Warning signals of biodiversity collapse across gradients of tropical forest loss. Scientific Reports, 8: 1622.

25. H*Gangur*, A, J Seymour, J Liddell, D Wilson, M Smout, **TD Northfield**. 2018. When is overkill optimal? Tritrophic interactions reveal new insights into venom evolution. *Theoretical Ecology*, 11: 141-149.

24. H*Gangur*, AN, M Smout, MJ Liddell, JE Seymour, D Wilson, **TD Northfield**. 2017. Changes in predator exposure, but not diet induce phenotypic plasticity in scorpion venom. *Proceedings of the Royal Society-B*, 284: 20171364.

23. **Northfield, TD**, BT Barton, OJ Schmitz, 2017. A spatial theory for emergent multiple predator-prey interactions in food webs. *Ecology and Evolution*, 7: 6935-6948.

22. F*Thurman*, JH, DW Crowder, **TD Northfield**. 2017. Biological control agents in the Anthropocene: Current risks and options for the future. *Current Opinion in Insect Science*, 23: 59-64.

21. P*Sambhu*, H, **TD Northfield**, A Nankishore, A Ansari, S Turton. 2017. Tropical rainforest and human-modified landscapes support unique butterfly communities that differ in abundance and diversity. *Environmental Entomology*, 46:1225-1234.

20. H*Clarke*, DA, PH York, MA Rasheed, **TD Northfield**. 2017. Does biodiversity-ecosystem function literature neglect tropical ecosystems? *Trends in Ecology and Evolution*, 32:320-323.

19. M*Forbes*, SJ, **TD Northfield**. 2017. Increased pollinator habitat enhances cacao fruit set and predator conservation. *Ecological Applications*, 27:887-899.

18. M*Forbes*, SJ, **TD Northfield**. 2017. *Oecophylla smaragdina* ants provide pest control in Australian cacao. *Biotropica*, 49: 328-336.

17. Sadeh, A, **TD Northfield**, JA Rosenheim. 2016*.* The epidemiology and evolution of parasite transmission through cannibalism. *Ecology*, 97: 2003-2011*.*

16. PCourtney, RS, Browning, **TD Northfield**, J Seymour. 2016. Thermal and osmotic tolerance of Irukandji polyps: Cubozoa; *Carukia barnesi*. *PLoS One* 11: e0159380.

15. Brown, JN, H Bambrick, S Barlow, D Fallon, J Fernandez-Piquer, A Gallant, G Hendrie, U Nidumolu, **TD Northfield**, E Poloczanska, A Roiko, S Tong, C Vickers, SA Wheeler. 2016. In 30 years, how might climate change affect what Australians eat and drink? Bulletin of the Australian Meteorological and Oceanographic Society, 29: 22-27.

14. **Northfield, TD**, DW Crowder, T Takizawa, WE Snyder. 2014. Pairwise interactions between functional groups improve biological control. *Biological Control*, 78: 49-54.

13. **Northfield, TD** & AR Ives. 2013. Coevolution and the effects of climate change on interacting species. *PLoS Biology*, 11: e1001685.

Commentary: Sugden, A.M. 2013. Editor’s Choice: Relationship trajectories. *Science*, 342: 1020.

12. **Northfield, TD**, WE Snyder, GB Snyder, and SD Eigenbrode. 2012. A simple plant mutation abets a predator-diversity cascade. *Ecology*, 93: 411-420.

11. UGable, JT, DW Crowder, **TD Northfield**, SA Steffan, and WE Snyder. 2012*.* Niche engineering reveals complementary resource use. *Ecology*, 93: 1994-2000.

10. Crowder, DW, **TD Northfield**, R Gomulkiewicz, and WE Snyder. 2012*.* Conserving and promoting evenness: organic farming and fire-based wildland management as case studies. *Ecology*, 93: 2001-2007.

9. Paini, DR, FJJA Bianchi, **TD Northfield**, PJ De Barro. 2011. Predicting invasive fungal pathogens using invasive pest assemblages: testing model predictions in a virtual world. *PLoS ONE*, 6: e25695.

8. **Northfield, TD**, DR Paini, SR Reitz, and JE Funderburk. 2011. Within plant interspecific competition does not limit the highly invasive thrips, *Frankliniella occidentalis* in Florida. *Ecological Entomology*, 36: 181-187.

7. **Northfield, TD**, GB Snyder, AR Ives, and WE Snyder. 2010. Niche saturation defines resource-use breadth and overlap. *Ecology Letters*, 13: 338–348.

6. Crowder, DW, **TD Northfield**, MR Strand, and WE Snyder. 2010. Organic agriculture restores evenness and natural pest control. *Nature*, 466: 109-112.

5. **Northfield, TD**, RF Mizell III, DR Paini, PC Andersen, BV Brodbeck, TC Riddle, and WB Hunter. 2009. Dispersal, patch leaving, and aggregation of the glassy-winged sharpshooter, *Homalodisca vitripennis* (Hemiptera: Cicadellidae). *Environmental Entomology*, 38: 183-191.

4. Tillman, PG, **TD Northfield**, RF Mizell, and TC Riddle. 2009. Spatiotemporal patterns and dispersal of stink bugs (Heteroptera: Pentatomidae) in peanut-cotton farmscapes. *Environmental Entomology*, 38: 1038-1052.

3. **Northfield, TD**, DR Paini, JE Funderburk, and SR Reitz. 2008. Cycles of *Frankliniella* spp. thrips abundance on North Florida uncultivated reproductive hosts: predicting possible sources of pest outbreaks. *Annals of the Entomological Society of America*, 101: 769-778.

2. Mizell III, RF, C Tipping, PC Andersen, BV Brodbeck, WB Hunter, and **TD Northfield**. 2008. Behavioral model for the glassy-winged sharpshooter, *Homalodisca vitripennis*: optimization of host plant use in a risky environment and management implications. *Environmental Entomology*, 37: 1049-1062.

**Peer-Reviewed Book Chapter**

1. **Northfield, TD**, DW Crowder, R Jabbour, and WE Snyder. 2012. Natural enemy functional identity, trait-mediated interactions, and biological control. In *Ecology and Evolution of Trait-Mediated Indirect Interactions: Linking Evolution, Community and Ecosystems.* (Eds. T Ohgushi, O Schmitz, RD Holt). Cambridge University Press, Cambridge, UK.

**Research Publications (Editor Reviewed)**

**Northfield, TD**. My lifeline from an entomological legend. *American Entomologist*, 69: 32-35.

HClarke, DA, PH York, MA Rasheed, **TD Northfield**. 2017. Identifying areas of need in tropical research: A reply to Stroud and Feeley. *Trends in Ecology and Evolution*, 32: 628.

Northfield, TD and RF Mizell III. 2008. The glassy winged sharpshooter, *Homalodisca vitripennis*. In *Encyclopedia of Entomology 2nd Edition* (Ed. JL Capinera), pp. 1623–1627. Springer, New York.

**Extension Publications (Non-Peer Reviewed)**

**Northfield, TD**, C Molnar. Questions and answers on insect vectors of X disease phytoplasma. Fruit Matters. August 11, 2020.

DuPont, ST, **TD Northfield**. X-disease phytoplasma vector management for 2020. Fruit Matters. July 7, 2020.

DuPont, ST, **TD Northfield**, S Harper, H Ferguson. Western X questions and answers. What do we know? What do we not know? Fruit Matters. July 17, 2019.

**Government reports:**

Australian Academy of Science. 2014. Climate Change Challenges to Health: Risks and Opportunities. Recommendations for the 2014 Theo Murphy High Flyers Think Tank. <https://www.science.org.au/supporting-science/science-sector-analysis/reports-and-publications/climate-change-challenges-health>. Contributing member for group 3: Food and Water Supplies.

**Invited Presentations (Authors I supervise in italics)**

Beers, E.H., L. Nottingham, T.D. Northfield, *D. Beal*. Classical biological control of invasive tree fruits: An IPM practitioner’s perspective. Pacific Branch of the Entomological Society of America. April 4, 2023. Seattle, WA.

Northfield, T.D. Context dependency in tree fruit ground cover management. Iowa State University Departmental Seminar, October 10, 2022, Ames, IA, Invited seminar (given virtually).

Northfield, T. D., A spatial theory for emergent multiple predator-prey interactions in food webs. Ecological Theory for Biological Control and Conservation Conference, Israel Institute for Advanced Studies, Jerusalem, Israel, June 19, 2022 (presented virtually due to contracting COVID-19).

Northfield, T.D. Context dependency in tree fruit ground cover management. University of Idaho Departmental Seminar, March 21, 2022, Moscow, ID, Invited seminar (given virtually).

*Roberts, J*., T. Northfield. Entomopathogenic-host evolution and implications for biopesticide resistance management. Pacific Branch of the Entomological Society of America Annual Meeting. April 12, 2022, Santa Rosa, CA, Invited presentation.

*McGuire, A*., W. Edwards, T. Northfield.\* Intermediate virulence optimizes pest control by a sexually transmitted pathogen. Pacific Branch of the Entomological Society of America Annual Meeting. April 12, 2022, Santa Rosa, CA, Invited presentation. \*Presenting author.

*Marshall, A., T.D. Melton,* T. Northfield, Ground control to Major Tom: Your hosts are covered there’s nothing wrong. Pacific Branch of the Entomological Society of America Annual Meeting. April 12, 2022, Santa Rosa, CA, Invited presentation.

*Clarke, A,* T. D. Northfield. Feeding observations of X disease vector *Colladonus reductus*. Pacific Branch of the Entomological Society of America Annual Meeting. April 6, 2021, Virtual Meeting, Invited presentation.

Northfield, T. D., James Cook University Tropical Environmental and Sustainable Science Seminar, "Biological Conservation and Food Production," James Cook University, March 13, 2020, Cairns, WA, Australia, Invited departmental seminar.

**Submitted Academic Presentations since joining WSU (Authors I supervise in italics)**

*Reyes-Corral, C.A., P. Smytheman*, W.R. Cooper, D. Horton, T. Lewis, J. Skevington, *A.T. Marshall, A. Clarke, T.D. Melton, J. Roberts*, T.D. Northfield. Potential biocontrol strategies for X-disease management. Pacific Branch of the Entomological Society of America. April 4, 2023. Seattle, WA.

*Clarke, A*., T.D. Northfield. Investigating host use of X-disease vector *Colladonus montanus reductus* (Van Duzee) (Hemiptera: Cicadellidae). Pacific Branch of the Entomological Society of America. April 4, 2023. Seattle, WA.

*Marshall, A*., S. Harper, C. Molnar, *C. Reyes-Corral, T.D. Melton, A Clarke*, W.R. Cooper, T.D. Northfield. X-disease epidemiology and vector survey in Washington State. Pacific Branch of the Entomological Society of America. April 4, 2023. Seattle, WA.

Jocson, D., R. Orpet, L. Nottingham, T.D. Northfield, E.H. Beers, D.W. Crowder. Using vibrational playbacks to disrupt mating behavior in *Cacopsylla pyricola*. Pacific Branch of the Entomological Society of America. April 3, 2023. Seattle, WA.

*Hanel, A*., R. Orpet, R. Hilton, L. Nottingham, T.D. Northfield, R. Schmidt-Jeffris. One omnivore to rule them all: augmentation of earwigs increases control of pear psylla, aphids, and mites in pome fruit orchards. Pacific Branch of the Entomological Society of America. April 3, 2023. Seattle, WA.

*Beal, D., P. Smytheman,* T.D. Northfield, E.H. Beers. Impact of canopy and groundcover management on *Drosophila suzukii* (Diptera: Drosophilidae) in Eastern Washington cherry orchards. Pacific Branch of the Entomological Society of America. April 3, 2023. Seattle, WA.

*Reyes Corral, C., P. Smytheman,* W. Cooper, J. Skevington, T.D. Melton, A. Marshall, T. Northfield. Identifying potential biocontrol agents for X-disease vectors. Pacific Branch of the Entomological Society of America Annual Meeting. April 11, 2022, Santa Rosa, CA., Submitted presentation.

*Marshall, A,* T. D. Northfield\*. Kaolin clay and plastic ground covers for control of X-disease vectors. Pacific Branch of the Entomological Society of America Annual Meeting. April 6, 2021, Virtual Meeting, Invited presentation. \*Presenting author.

*McGuire, A. V.*, Northfield, T. D.\*, Entomological Society of America, "Entomopathogenic fungal diversity and potential for pest control on Australian banana farms." November 17, 2019, St. Louis, MO, Submitted presentation. \*Presenting author

**Extension and Outreach Presentations since joining WSU (Authors I supervise in italics)**

Northfield, T. D. X-disease vector identification, distribution, and management. Northwest Wholesale Grower Meeting, Wenatchee, WA. (February 21, 2023).

Northfield, T. D., E.H. Beers. Codling moth: Old pest, new perspectives. Northwest Wholesale Grower Meeting, Royal City, WA. (February 9, 2023).

Northfield, T. D. X-disease vector identification, distribution, and management. Northwest Wholesale Grower Meeting, Royal City, WA. (February 9, 2023).

Northfield, T. D. X-disease vector identification, distribution, and management. GS Long Fieldstaff Meeting, Yakima, WA. (February 8, 2023).

Northfield, T. D. X-disease vector identification, distribution, and management. Okanogan Horticultural Day, Okanogan, WA. (February 7, 2023).

Northfield, T. D. X-disease vector identification, distribution, and management. Northwest Wholesale Grower Meeting, Omak, WA. (February 2, 2023).

Northfield, T. D. X-disease vector identification, distribution, and management. Wilbur Ellis Grower Meeting, held virtually. (January 26 2023).

Northfield, T. D. Advances in pear research. WSU Tree Fruit Days, Wenatchee, WA. (January 19 2023).

*Marshall, A.*, Northfield, T. D. X-disease vector identification, distribution, and management. WSU Tree Fruit Days, Wenatchee, WA. (January 18 2023).

*Reyes-Corral, C*., A.T. Marshall, S. Harper, W.R. Cooper, T.D. Northfield. Manejo de Chicharritas. WSU Tree Fruit Days, Wenatchee, WA. (January 17 2023).

*Beal, D.,* T.D. Northfield, E.H. Beers. Adapting IPM approaches for spotted wing drosophila (*Drosophila suzukii*) management to Eastern Washington State. Orchard Pest and Disease Management Conference, Portland, OR. (January 13, 2023).

Beers, E.H., A.T. Marshall, T.D. Northfield\*. Errors associated with pheromone trapping of sterile codling moth. Orchard Pest and Disease Management Conference, Portland, OR. (January 12, 2023).

\*Presented in first author’s absence.

T.D. Northfield. X-disease and Little cherry virus: updates from the LCD Taskforce. Orchard Pest and Disease Management Conference, Portland, OR. (January 12, 2023).

*Roberts, J*., T.D. Northfield. General theory for biopesticide resistance management. Orchard Pest and Disease Management Conference, Portland, OR. (January 12, 2023).

*Reyes-Corral, C.A., P. Smytheman,* W.R. Cooper, T.D. Northfield. Potential biocontrol agents for X-disease vectors. Orchard Pest and Disease Management Conference, Portland, OR. (January 12, 2023).

*Hanel A.,* R. Orpet, R. Hilton, L.B. Nottingham, T.D. Northfield, R. Schmidt-Jeffris. Aphids provide control of aphids, mites, and pear psylla in pome fruit. Orchard Pest and Disease Management Conference, Portland, OR. (January 12, 2023).

*Marshall, A.T., T Melton,* T.D. Northfield. Establishing postharvest cultural controls for X-disease management. Orchard Pest and Disease Management Conference, Portland, OR. (January 12, 2023).

*Clarke, A.,* T.D. Northfield. Investigating host use of X-disease vector *Colladonus montanus reductus*. Orchard Pest and Disease Management Conference, Portland, OR. (January 11, 2023).

Northfield, T. D., Harper, S., DuPont, S. T*., Marshall, A. T.* Management of X-disease vectors in nurseries. LCD Nursery and Grower Working Group, Wenatchee, WA, United States of America. (December 15, 2022).

Cooper, W. R., Northfield, T. D. Weedy Hosts of X-disease Vectors. Washington State Tree Fruit Association Annual Meeting, Wenatchee, WA, United States of America. (December 7, 2022).

*Marshall, A.*, Northfield, T. D. X-disease vector identification, distribution, and management. Washington State Tree Fruit Association Annual Meeting, Wenatchee, WA, United States of America. (December 7, 2022).

*Beal, D.*, Beers, E. H., Northfield, T. D. Coordinating SWD and X disease management. Northwest Cherry and Stone Fruit Research Review, Washington Tree Fruit Research Commission, Yakima, WA, United States of America. (November 9, 2022).

Northfield, T. D., Cooper, W. R., Harper, S. Identifying sources of X disease in orchards. Cherry Research Review, Washington Tree Fruit Research Commission, Yakima, WA, United States of America. (November 9, 2022).

Northfield, T. D. Overview of LCD activities + Taskforce updates. Cherry Research Review, Washington Tree Fruit Research Commission, Yakima, WA, United States of America. (November 9, 2022).

Northfield, T. D., Harper, S., *Marshall, A*. X-disease vector ID and acquisition from low titer trees. Northwest Cherry and Stone Fruit Research Review, Washington Tree Fruit Research Commission, Yakima, WA, United States of America. (November 9, 2022).

*Marshall, A. T*., Northfield, T. D. Netting for X-disease vector management. LCD Nursery Field Day, WSU, Quincy, WA, United States of America. (September 19, 2022).

*Marshall, A. T.*, *Clarke, A. E*., *Melton, T. D.*, *Reyes Corral, C.*, Northfield, T. D. X-disease vector identification. LCD Nursery Field Day, WSU, Quincy, WA, United States of America. (September 19, 2022).

Northfield, T. D. X-disease vector management. LCD Nursery Field Day, WSU, Quincy, WA, United States of America. (September 19, 2022).

Northfield, T. D., Reyes Corral, C., Marshall, A. T., Identification of X-disease vectors for Wilbur Ellis Staff. Wilbur Ellis, Wenatchee, WA, United States of America. (August 18, 2022).

*Clarke, A.*, T.D. Northfield, X-disease vectors. WSU Field Day. Yakima, WA. (June 21, 2022).

Northfield, T.D. Little cherry disease update. USDA National Program Leaders Meeting. Virtual Meeting. (February 25, 2022).

Northfield, T.D., *C. Reyes Corral*, *T.D. Melton*. X-disease vectors and sampling. Orondo School District 8th Grade Class. Orondo, WA.

Northfield, T.D. Enhancing pear psylla biological control through predator recruitment. Pear Research Review. Virtual Meeting (February 17, 2022).

*Clarke, A*., Northfield, T.D. X-disease vector hosts. WSU Little Cherry Disease Day. Ellensburg, WA. (February 16, 2022).

*Marshall, A.*, Northfield, T.D. X-disease vector field trials. WSU Little Cherry Disease Day. Ellensburg, WA. (February 16, 2022).

*Reyes Corral, C*., Northfield, T.D. X-disease vector natural enemies. WSU Little Cherry Disease Day. Ellensburg, WA. (February 16, 2022).

Northfield, T.D., Little cherry disease update. Northwest Horticultural Council Science Advisory Board. (January 25, 2022).

Northfield, T.D., X-disease vectors. WSU Stone Fruit Days, Wenatchee, WA (January 19, 2022).

Northfield, T.D. X-disease vectors. Washington State Tree Fruit Association national meeting. Yakima, WA. (December 7, 2021).

Northfield, T. D., X disease vector identification and acquisition from low titer trees, Washington State Tree Fruit Research Commission, Wenatchee, WA, Virtual Meeting. (November 9, 2021).

Northfield, T. D., Field evaluation of leafhopper controls for X disease management, Washington State Tree Fruit Research Commission, Wenatchee, WA, Virtual Meeting. (November 9, 2021).

Northfield, T. D., Identifying sources of X disease in cherry orchards, Washington Tree Fruit Research Commission, Virtual Meeting. (November 9, 2021).

Northfield, T.D. Little cherry disease. Meeting with US Representative Kim Schrier, Wenatchee, WA. (November 9, 2021).

Northfield, T.D. X-disease vectors. WSU Field Day. Prosser, WA. (October 9, 2021).

Northfield, T.D. X-disease vectors. WSU Field Day. Wenatchee, WA. (October 5, 2021).

*Clarke, A.*, T.D. Northfield. X-disease vectors. Okanagan Horticultural Society. Tonasket, WA. (July 28, 2021).

Northfield, X-disease vectors. North Central Washington Fieldmen’s Association Farm Walk. Malaga, WA. (22 July 2021).

Northfield, X-disease vectors. Update to USDA Undersecretaries and National Program Leaders. Virtual Presentation. (July 20, 2021).

Northfield, T.D. Enhancing pear psylla biological control through predator recruitment. Pear Research Review. Virtual Meeting (February 17, 2021).

Northfield, T.D. X-disease Vectors. Wilbur Ellis Grower Meeting. Virtual Presentation. (February 9, 2021).

Northfield, T. D., X-disease and Little cherry virus webinar, "X-disease vectors," WSU. (January 21, 2021).

Northfield, T. D., Harper, S., DuPont, S. T., Wilbur Ellis Field Staff Meeting, "X disease vectors," Wilbur Ellis. (January 8, 2021).

Northfield, T. D., Harper, S., DuPont, S. T., Great Lakes Horticultural Expo, "X Disease Vectors." (December 9, 2020).

Northfield, T. D., Northwest Horticultural Show, "X disease Vectors," Washington State Tree Fruit Association. (December 8, 2020).

*Marshall, A. T*., Northfield, T. D., WTFRC Research Review, "Field evaluation of leafhopper controls for X disease management," Washington State Tree Fruit Research Commission, Wenatchee, WA, United States of America. (November 12, 2020).

Northfield, T. D., WTFRC Cherry Research Review, "Identifying sources of X disease in cherry orchards," Washington Tree Fruit Research Commission, Wenatchee, WA, United States of America. (November 12, 2020).

Northfield, T. D., Northwest Horticultural Council Advisory Board Meeting, "Update on LCD Taskforce," Northwest Horticultural Council, Wenatchee, WA, United States of America. (October 22, 2020).

Northfield, T. D., Marshall, A. T., Washington Commission on Pesticide Registration Virtual Pest Control Tour, "X disease," WCPR, Wenatchee, WA, United States of America. (August 19, 2020).

Northfield, T. D., Meeting with Congressman Newhouse, "X disease," Rock Island, WA, United States of America. (August 11, 2020).

Northfield, T. D., Wilbur Ellis Yakima Field Staff Field meeting, "X disease vectors," Wilbur Ellis. (July 28, 2020).

Northfield, T. D., Chamberlin Field Staff Meeting, "X Disease Vectors," Chamberlin, Wenatchee, WA, United States of America. (July 23, 2020).

Northfield, T. D., WSU Webinar, "X Disease Vectors," WSU, Wenatchee, WA, United States of America. (May 22, 2020).

Northfield, T. D., Northwest Horticultural Council Advisory Board Meeting, "LCD Task Force Update," Northwest Horticultural Council, Wenatchee, WA, United States of America. (March 26, 2020).

Northfield, T. D., Little Cherry Disease Task Force Meeting, "Key priorities for little cherry disease," Wenatchee, WA, United States of America. (March 12, 2020).

Northfield, T. D., Wilbur Ellis Field Staff Meeting, "X disease vectors," Wilbur Ellis. (February 5, 2020).

Northfield, T. D., Stone Fruit Days, "X disease vectors," WSU, Wenatchee, WA, United States of America. (January 29, 2020).

Northfield, T. D., Wilbur Ellis Grower Meeting, "X Disease Vectors," Wilbur Ellis, Wenatchee, WA, United States of America. (January 21, 2020).

Northfield, T. D., GS Long Growers Meeting, "Little Cherry Disease Vectors," GS Long, Yakima. (January 15, 2020).

Athey, K. J. (Author), Beers, E. H. (Author), Northfield, T. D. (Author & Presenter), Orchard Pest and Disease Management Conference, "Sterile insect release for codling moth control in apples," Washington State University, Portland, WA. (January 10, 2020).

Northfield, T. D., DuPont, S. T., Harper, S., Cherry Institute Annual Meeting, "X disease: What can we learn from past outbreaks?," Cherry Institute, Yakima, WA, United States of America. (January 10, 2020).

Northfield, T. D. (Author & Presenter), DuPont, S. T. (Author), Harper, S. (Author), Orchard Pest Management and Disease Conference, "X disease: What can we learn from previous outbreaks?," Portland, WA, United States of America. (January 9, 2020).

Beers, E. H., Athey, K. J., Northfield, T. D., Northwest Wholesale Pesticide Recertification Meeting, "Best Strategies for Codling moth Control in 2019: Overview of the CM-SIR Program," Northwest Wholesale. (2019).

Athey, K. J., Beers, E. H., Crowder, D. W., Northfield, T. D., Wilbur-Ellis Grower Meeting, "BMSB update and codling moth sterile insect technique," Wilbur-Ellis. (2019).

Athey, K. J., Beers, E. H., Crowder, D. W., Northfield, T. D., Manson Grower Meeting, "Codling moth." (2019).

Athey, K. J., Beers, E. H., Crowder, D. W., Northfield, T. D., Wilbur-Ellis Grower Meeting, "Codling moth control approaches – old and new," Wilbur-Ellis. (2019).

Athey, K. J., Beers, E. H., Crowder, D. W., Northfield, T. D., Blue Bird 12th Annual Pesticide Forum, "Sterile insect release history and current projects," Blue Bird. (2019).

Northfield, T. D., Washington Tree Fruit Association Hort Show, "Little Cherry Disease Vector Biology." (December 10, 2019).

Beers, E. H., Athey, K. J., Northfield, T. D., Brunner, J. F., Entomological Society of America, "Everything old is new again: CM SIR Washington." (November 2019).

Northfield, T. D., Joint Horticultural Pest and Disease Board Meeting, "Little Cherry Disease Vector Biology." (November 21, 2019).

Beers, E. H., Athey, K. J., Northfield, T. D., Crowder, D. W., Brunner, J. F., Entomological Society of America, "Everything old is new again: Codling moth SIR in Washington State." (November 19, 2019).

Northfield, T. D., "WTFRC Cherry Research Review Dinner presentation." (November 12, 2019).

Northfield, T. D., GS Long Fieldstaff Meeting, "X Disease: What can we learn from previous outbreaks?." (October 31, 2019).

Northfield, T. D., Yakima Pom Club, "X Disease: What can we learn from previous outbreaks?." (August 21, 2019).

Northfield, T. D., Beers, E. H., Brunner, J. F., Crowder, D. W., Jones, V., Pacific Branch, Entomological Society of America Meeting, "Adapting SIR from Eradication to IPM: Issues to Consider." (April 2, 2019).

Northfield, T. D., Okanagan Horticultural Association Meeting, "How to catch a predator: CSI techniques in IPM," Tonasket, WA, United States of America. (February 5, 2019).

Beers, E. H., Athey, K. J., Northfield, T. D., Crowder, D. W., Brunner, J. F., Okanogan Horticultural Association Annual Meeting, "Sterile Insect Release for Codling Moth Control." (February 5, 2019).

Northfield, T. D., Beers, E. H., Brunner, J. F., Crowder, D. W., Jones, V., "Adapting SIR from Eradication to IPM: Issues to Consider." (January 9, 2019).

Beers, E. H., Athey, K. J., Northfield, T. D., Brunner, J. F., Crowder, D. W., Orchard Pest and Disease Management Conference, "These ARE the Drones You’re Looking For: WA-SIR Project Year 1 Update." (January 9, 2019).

Northfield, T. D. (Author), Beers, E. H. (Author), Northwest Wholesale Grower Meeting, "Codling moth update," Wenatchee, United States of America. (January 7, 2019).

Northfield, T. D., NW Hort Expo, "Systems approaches to pest management," Washington State Tree Fruit Association. (December 5, 2018).

**Extension videos**

X-disease vector management: <https://www.youtube.com/watch?v=CuPli-O_eUk&t=1s>

X-disease vector field trials: <https://www.youtube.com/watch?v=tgTFUVlbO64>

**Extension websites**

<http://treefruit.wsu.edu/article/x-disease-phytoplasma-vector-management-for-2020/>

<http://treefruit.wsu.edu/article/western-x-questions-and-answers-what-do-we-know-what-do-we-not-know/>

**Media engagement (WSU):**

Arriving at WSU (1 newspaper article, Capital Press).

X-disease: 7 Good Fruit Grower articles, 1 Yakima Herald article, 1 Capital Press Article, Daily Evergreen

Links:

<https://dailyevergreen.com/136988/news/grant-provides-affordable-testing-for-harmful-cherry-disease/>

<https://www.goodfruit.com/weeds-that-foster-disease/>

<https://www.goodfruit.com/wsu-fall-field-days-focus-on-x-disease/>

<https://www.goodfruit.com/vector-investigations/>

<https://www.goodfruit.com/x-disease-headlines-hort-show-morning-session/>

<https://www.goodfruit.com/x-disease-devastation-strikes-pacific-northwest/>

<https://www.goodfruit.com/big-response-for-little-cherry-disease/>

<https://www.goodfruit.com/growers-raise-the-alarm-on-postharvest-pest-control-for-little-cherry-disease-vectors/>

<https://www.capitalpress.com/ag_sectors/orchards_nuts_vines/scientist-warns-disease-threatens-nw-cherries/article_935edf8a-4388-11ea-85db-b33abee2e814.html>

<https://www.yakimaherald.com/news/business/local/cherry-disease-continues-to-decimate-crops-in-yakima-valley/article_5ca0de3f-6623-5559-a8d2-e72b8ecf8ec2.html>

<https://www.capitalpress.com/state/washington/from-australia-to-wenatchee/article_e0aac11e-35b5-5b54-bcf1-1efea861b2be.html>

**Media engagement (JCU):**

Cocoa pollination and pest management: TEDx talk (2016), 2 radio, 4 newspaper.

Butterfly populations and conservation: 5 television, 5 radio, 2 newspaper appearances

Climate change, food availability and the human diet: 4 television, 13 radio, 6 newspaper appearances.

Venom and arms races: Discovery Channel series interview: ‘Australia doesn’t just want to kill you’

Other climate-related insect interviews: 10 radio, 1 newspaper

Media appearances by graduate students I advise: Forbes: (1 television, 4 radio, 5 newspaper appearances), Gowell (1 radio appearance), Sambhu (4 radio, 2 newspaper, 1 trade magazine appearance), Ferguson (1 television appearance), Rowley (1 newspaper appearance), McGuire (1 television).

**University, College, Department Service**

Promotion committees: Javier Guitierrez Illan (2020-present), Jennifer Han (2022-present) Robert Clark (2020-2021)

WSU Entomology Endowed Chair search committee (2022)

WSU Entomology Chair’s Advisory Committee (2022-present)

WSU Entomology Curriculum Committee (2019- present)

WSU Entomology Graduate Admissions Committee (2019-present)

WSU Entomology Diversity and Inclusivity Committee (2020-present)

Chair, WSU TFREC Space Use Committee (2019-2021)

WSU TFREC Space Use Committee (2019-present)

TFREC Graduate Student Wellbeing Committee (2021-present)

Search Committee, Insect Physiologist, (2019-2020)

Chair, Search Committee TFREC Fiscal Analyst (2019-2022) (three searches)

Search Committee for USDA Wapato Research Scientist position (2018) (WSU representative)

**Professional Service**

Leader, Little Cherry Disease Taskforce

Manuscripts reviewed for *Acta Oecologia, American Naturalist, J. Applied Ecology*, *Basic and Applied Ecology*, *Biocontrol, Biological Control,* *BioScience*, *BMC Evolutionary Biology*, *Current Opinion in Insect Science*, *Ecological Applications,* *Ecology, Ecology Letters, Environmental Entomology, Ecological Entomology, Ecosphere, Entomologia Experimentalis et Applicata, Florida Entomologist, Functional Plant Biology, Global Change Biology, Oecologia, Pest Management, J. Pest Science, Pest Management Science, PLoS ONE, Theoretical Ecology, Virus Research*.

Grant Reviewer: WSDA Specialty Crop Block Grants (2019, 2020, 2021, 2022)

Pacific Branch of the Entomological Society of America Meeting Nominations Committee (2021-present).

Session organizer: NW Hort Show. December 8, 2022. Wenatchee, WA.

Session organizer: NW Hort Show. December 7, 2021. Yakima, WA.

Session co-organizer: *Insect Vectors of Plant Disease*. Pacific Branch of Entomological Society of America Meeting, April 2021.

Session moderator: *Undergraduate Research Symposium*. Pacific Branch of Entomological Society of America Meeting, April 2021.

Session co-organizer: NW Hort Show 2020. Virtual presentation

Student Scholarship Committee, Orchard Pest Management and Disease Conference

Organisation committee: Annual meeting of the Australian Entomological Society. Cairns, QLD, 27-30 September 2015.

Symposium co-organizer: Linkages between climate change and global insect pestilence: From theory to practice, Entomological Society of America annual meeting. Knoxville, TN, 11-14 November 2012.

Symposium co-organizer: Natural enemy diversity effects: mechanisms and applications for biocontrol, Pacific Branch Entomological Society of America annual meeting. Napa, CA, 30 March-2 April 2008.

**Professional Societies**

Entomological Society of America, Entomological Society of America Pacific Branch.