

CURRICULUM VITAE

NAME: Edwin E. Lewis

RANK OR TITLE: Professor, Co-Director of Center for Health in the Human Ecosystem

DEPARTMENT: Entomology, Plant Pathology and Nematology

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DEGREES

Ph.D. Entomology. 1991. Auburn University, Auburn, AL.

M.S. Entomology. 1987. University of Missouri, Columbia, MO.

B.S. Natural Resources. 1980. Cornell University, Ithaca, NY.

A.A.S. Science and Math. Cayuga County Community College, Auburn, NY.

EXPERIENCE

Teaching, Extension and Research Appointments:

Current	Professor, Dept. Entomology, Plant Pathology and Nematology, University of Idaho, Moscow, ID
2017-2022	Professor and Head, Dept. Entomology, Plant Pathology and Nematology, University of Idaho, Moscow, ID
2008-2017	Professor, Dept. Nematology / Entomology, University of California, Davis
2004-2008	Associate Professor, Depts. Nematology / Entomology, University of California, Davis
2004	Associate Professor/Cooperative Extension Specialist, Dept. of Entomology, Virginia Tech
1998-2004	Assistant Professor/Cooperative Extension Specialist, Dept. of Entomology, Virginia Tech
1995-98	Research Assoc., Dept. of Entomology, University of Maryland.
1994-95	Assistant Research Professor, Dept. of Entomology, Rutgers University.
1991-94	Post-doctoral Research Assoc., Dept. of Entomology, Rutgers University.

Academic Administrative Appointments:

Current	Co-Director, Institute for Health in the Human Ecosystem, UI
2017-2022	Head, EPPN, UI
2014-2017	Associate Dean for Agricultural Sciences, College of Agricultural and Environmental Sciences, University of California, Davis
2012-2014	Vice Chair, Department of Entomology and Nematology, UC Davis
2010-2014	Co-Director, Center for Honey and Pollination, Robert Mondavi Institute for Food and Wine, UC Davis

TEACHING ACCOMPLISHMENTS: (Academic and Extension teaching)

Areas of Specialization: Biological control of pest insects and nematodes; animal behavior; insect pathology; behavioral ecology

Courses Taught:**University of Idaho**

- EPPN 110: Introduction to Global Disease Ecology (2 credits, sole instructor)
- Entomology 438: Pesticides in the Environment (9 lectures) – Gen Ed: Senior Experience. Fate of pesticides in the environment, proper usage for pest management. (20 – 30 students)
- Entomology 501: Graduate Seminar – 100%, Fall, 2018. Graduate students prepare and present short and medium length seminars in specific topic areas. (15 students)

University of California, Davis

- Entomology 135: Biological Control – Principles of biological control of arthropod pests and weeds. Biology of pathogens, entomopathogenic nematodes, parasitoids, and predators. Implementation in classical and augmentative biological control. Role of biological control in pest management. Offered alternate Fall quarters, 2014-2016. (20 – 30 students)
- Entomology 104: Behavioral Ecology of Insects – Basic principles and mechanisms of insect behavior and ecology. An evolutionary approach to understanding behavioral ecology of insects. Offered every Winter quarter, 2005-2017. (275 – 300 students)
- Animal Biology 187: Seminar – Seminar leading to development of the Major Proposal for the Animal Biology major. Offered every Fall quarter, 2008-2012. (30 – 50 students)
- Freshman Seminar: Parasites and civilization. Special seminar limited to 15 first year students. Offered once.
- Entomology 189. Special Topics in Entomology. The one-minute entomologist. Undergraduate students create one-minute-long videos that explain the biology and importance of various insect species. Offered once.
- Nematology 290: Graduate Seminar. Evolution of nematode-insect relationships. Offered once

As Co-director of the Institute for Health in the Human Ecosystem:

Co-organizer and instructor in the 6-Day course on the Biology of Vector-Borne Diseases. This course was offered for the first time during June 2017 to 35 instructors and 34 students. BVBD 2019 hosted 35 instructors and 64 students. This course is offered annually during late June.

Advising

Currently, advisor for Entomology and Global Disease Ecology undergraduate majors, which includes 9 students.

I served as Master Advisor for the Animal Biology major at UC Davis for four years. During this time, the major grew from approximately 50 students to more than 300 students.

Graduate Students Advised as Chair or co-Chair:

Name of Student/Institution	My Role	Ph.D.	M.S.	In Progress	Year	Current Position
Ken Cote/Virginia Tech	Chair		X		2001	Indiana State Nursery Inspector
Youngsoo Son/Virginia Tech	Chair	X			2003	Researcher – CA Department of Food and Agriculture
William Dimock/Virginia Tech	Chair	X			2004	Deceased
Janet Ashley/Virginia Tech	Chair		X		2004	Virginia Cooperative Extension
Amanda Hodson/UC Davis	Chair	X			2009	Project Scientist UCD
Farshid Sirjani/UC Davis	Chair		X		2009	Family Farm
Soledad Villamil/UC Davis	Co-Chair	X			2010	Instructor Dept. de Agronomia, University Nacional del Sur, Argentina
Hanayo Arimoto/UC Davis	Chair	X			2009	US Navy
Irina Shapiro/UC Davis	Chair		X		2014	Bayer Cropsciences
Atirach Noosidum/ Kasetsart University, Thailand	Co-Chair	X			2012	Lecturer, Kasetsart University
Margaret Scampavia/UC Davis	Co-Chair	X			2017	
Danica Dito/UC Davis	Chair	X			2016	
Stephanie Kurniawan	Co-Chair		X		2017	Alameda County mosquito control district
Nick Morris/ U Idaho	Chair		X	X		
Lucas Ripa / U Idaho	Chair		X	X		
Busra Sadic	Chair		X	X		

Anwar Bushnaq	Chair	X		X		
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Postdoctoral Scholars, Visiting Scientists, etc.

Name	Degree	Trainee Type	Years	Current Position (or last known)
Enrique Perez	Ph.D.	Postdoctoral Research Associate	1999-2003	Programmer for SPSS
Ken Spence	Ph.D.	Postdoctoral Research Associate	2006-2010	Agricultural Committee, State Senate of CA
Anne Nielsen	Ph.D.	Postdoctoral Research Associate	2008-2010	Assistant Professor, Rutgers University
Glen Stevens	Ph.D.	Postdoctoral Research Associate	2006-2010	Associate Professor, Ferrum College
Roy Kaspi	Ph.D.	Postdoctoral Research Associate	2009-2012	Research Scientist, Volcani Institute, Israel
Derya Asici	MS	Student	2010-2011	Postdoctoral Associate, Adnan Menderes University, Turkey
Heriberto Cruz Martinez	MS	Student	2012 (6 mos.)	Student, Conservacion y Aprovechamiento de Recursos Naturales CIIDIR, Oaxaca, Mexico
Qizhi Liu	Ph.D.	Visiting Professor	2013 (6 mos.)	Professor, China Agriculture University, Beijing, China
Chunjie Li	Ph.D.	Research Scientist	2013 (8 mos.)	Scientist, Northeast Institute of Geography and Agroecology, Chinese Academy of Sciences, Harbin, China
Carlos Cortes Martinez	Ph.D.	Student	2013 (2 mos.)	Staff Scientist, Instituto Politecnico Nacional, CIIDIR, Oaxaca, Mexico
Mehmet Karagoz	Ph.D.	Visiting Professor	2013	Professor, Adnan Menderes University, Aydin, Turkey
Jamie Ruiz Vega	Ph.D.	Visiting Professor	2013 and 2015	Research Scientist, Agroecologia y Control Biologico, CIIDIR, Oaxaca, Mexico
Baris Gulcu	Ph.D.	Visiting Professor	2014	Assistant Professor, Duzce University, Turkey
Xingyue Li	Ph.D.	Student	2014	Research Scientist, Plant Protection, Sichuan Academy of Agricultural Science, Chengdu, Sichuan

Valentina Pidlisnyuk	Ph.D.	Visiting Professor	2010 and 2013	Professor, Matez Bel University, Banska Bystrica, Slovakia and Professor Jana Evangelista Purkyne University, Czech Republic
Tatyana Stefanovska	Ph.D.	Visiting Professor	Multiple times over many years	Professor, National University of Life and Environmental Sciences, Kiev, Ukraine
Qian Xiujuan	Ph.D.	Visiting Professor	2018-2019	Associate Professor, Department of Entomology, Gansu Agricultural University, Lanzhou, P.R. China
Hilal Erdogan	M.S.	Visiting Ph.D. student	2020-2021	Bursa Uludağ University College of Agriculture Dept. of Biosystems Engineering Bursa, Turkey
Tufan Can Ulu	Ph.D.	Visiting Professor	Current	Bilecik University, Faculty of Agriculture and Natural Sciences Department of Plant Protection Bilecik, Turkey

SCHOLARSHIP ACCOMPLISHMENTS:

Publications and Patents

Refereed Publications in Journals (126 total)

(* graduate student author; ** undergraduate student as author)

1. Stefanovska, T., S. Luckhart, L. Ripa, G. Stevens, E. E. Lewis. 2023. *Steinernema carpocapsae*. Trends in Parasitology: Parasite of the Month.
DOI:<https://doi.org/10.1016/j.pt.2023.01.002>
2. *Briggs A. M., M. G. Hambly, R. Simão-Gurge., S. Garrison, Z. Khaku, G. Van Susteren, E. E. Lewis, J. Riffell and S. Luckhart. 2022. *Anopheles stephensi* feeding, flight behavior, and infection with malaria parasites are altered by ingestion of serotonin. Frontiers in Physiology. Volume 13. DOI=10.3389/fphys.2022.911097
3. *Erdogan, H., Stevens, G., Stevens, A., Shapiro-Ilan, D., Kaplan, F., Alborn, H., Lewis, E.E. 2021. Infected host responses across entomopathogenic nematode phylogeny. Journal of Nematology. DOI: 10.21307/jofnem-2021-105

4. *Nikoukar, A., Ensafi, P., Lewis, E.E., Crowder, D.W., Rashed, A. 2021. Efficacy of naturally occurring and commercial entomopathogenic nematodes against sugar beet wireworm (Coleoptera: Elateridae). *Journal of Economic Entomology*. 114: 2241-2244.
5. *Erdogan, H., Cruzado-Gutierrez, K., Stevens, G., Shapiro-Ilan, D., Kaplan, F., Alborn, H., Lewis, E.E. 2021. Nematodes follow a leader. *Frontiers in Ecology and Evolution*. 9. Article number 740351. DOI:10.3389/fevo.2021.740351
6. *Rodriguez A.M., Hambly, M.G., Jandu, S., Simão-Gurge, R., Lowder, C., Lewis, E.E., Riffell, J.A., Luckhart, S. 2021. Histamine ingestion by *Anopheles stephensi* alters important vector transmission behaviors and infection success with diverse *Plasmodium* species. *Biomolecules*. 11(5). doi: 10.3390/biom11050719.
7. *Erdogan, H., Unal, H., Lewis, E.E. 2021. Entomopathogenic nematode dispensing robot: NEMABOT. *Expert systems with Applications*. 172 114461.
8. Noosidum, A. Sirirut M., Lewis, EE. 2021. Biological control potential of entomopathogenic nematodes against the striped flea beetle, *Phyllotreta sinuate* Stephens (Coleoptera: Chrysomelidae). *Crop Protection*. 141: <https://doi.org/10.1016/j.cropro.2020.105448>
9. Sirjani, F. and Lewis, EE. 2020. First report of a gall midge species (Diptera: Cecidomyiidae) associated with pistachios. *Journal of Integrated Pest Management*. <https://doi.org/10.1093/jipm/pmaa022>
10. *Kaplan, F. Perret-Gentil, A., Giurintano, J., Stevens, G., Erdogan, H., Schiller, K., Amaleah, M., Sampson, E., Torres, C., Sun, J., Lewis, EE, Shapiro-Ilan, D. 2020. Conspecific and heterospecific pheromones stimulate dispersal of entomopathogenic nematodes during quiescence. *Scientific Reports*. 10, Article number: 5738.
11. Shapiro-Ilan, D., F. Kaplan, C. Oliveira-Hofman, P. Schliekelman, H. Alborn and E.E. Lewis. 2019 Conspecific pheromone extracts enhance entomopathogenic activity. *Journal of Nematology*. DOI: 10.21307/jofnem-2019-082
12. Oliveria-Hofman, C., F. Kaplan, G. Stevens, E.E. Lewis, S.H. Wu, H.T. Alborn, A. Perret-Gentil, and D. Shapiro-Ilan. 2019. Pheromone extracts act as boosters for entomopathogenic nematode efficacy. *Journal of Invertebrate Pathology*. 164: 38-42.
13. Li, C., X. Zhou, E.E. Lewis, Y. Yu and C. Wang. 2019. Study on host-seeking behavior and chemotaxis of entomopathogenic nematodes using Pluronic F-127 gel. *Journal of Invertebrate Pathology*. 161: 54-60.
14. **Gulcu, B., A. Hodson, V. Omaleki, A.B. Ross and E.E. Lewis. 2019. A biological control approach to reducing *Naupactus godmani* (Curculionidae) populations in citrus using entomopathogenic nematodes. *Crop Protection*. 115: 99-103.

15. Wu, S.H., F. Kaplan, E.E. Lewis, H.T. Alborn, D.I. Shapiro-Ilan. 2018. Infected host macerate enhances entomopathogenic nematode movement towards hosts and infectivity in a soil profile. *Journal of Invertebrate Pathology*. 159: 141-144.
16. Kepenekci, I.S., Hazir, E. Oksal and E.E. Lewis. 2018. Application methods of *Steinernema feltiae*, *Xenorhabdus bovienii* and *Purpureocillium lilacinum* to control root-knot nematodes in greenhouse tomato systems. *Crop Protection*. 108: 31-38.
17. Gulcu, B., S. Hazir, E.E. Lewis and H.K. Kaya. 2018. Evaluation of responses of different ant species (Formicidae) to the scavenger deterrent factor associated with the entomopathogenic nematode-bacterium complex. *European Journal of Entomology*. 115: 312-137.
18. Ruan, W.B., D.I. Shapiro-Ilan, E.E. Lewis, F. Kaplan, H. Alborn, X.H. Gu, and P. Schliekelman. 2018. Movement patterns in entomopathogenic nematodes: continuous vs. temporal. *Journal of Invertebrate Pathology*. 151: 137-143.
19. Parrella, M.P. and E.E. Lewis. 2017. Biological control in greenhouse and nursery production: Present status and future directions. *American Entomologist*. 63: 237–250.
20. *Cortes-Martinez, CI, EE Lewis, J Ruiz-Vega and GA Martinez-Guteirrez. 2017. Mechanical production of pellets for the application of entomopathogenic nematodes: effect of pre-acclimation of *Steinernema glaseri* on its survival time and infectivity against *Phyllophaga vetula*. *Biocontrol Science and Technology*. 27: 940-951.
21. Papadopoulos, N, J.R. Carey, C.S. Ioannou, H. Ji, H-G Muller, J-L Wang, S. Luckhart, E.E. Lewis. 2016. Seasonality of post-capture longevity in a medically-important mosquito (*Culex pipiens*). *Frontiers in Ecology and Evolution*. 4: article 63.
22. Nermut, J., V. Puze, Z. Mracek and E.E. Lewis. 2016. *Alloinema californicum* n. sp. (Nematoda: Alloinnematidae): a new alloinematid from USA. *Zootaxa* 4184: 505-516.
23. *Pietri, J.E., N. Pakpour, E. Napoli, G. Song, G. E. Pietri, R. Potts, K.W. Cheung, G. Walker, M.A. Riehle, H. Starcevich, C. Giulivi, E.E. Lewis, and S. Luckhart. 2016. Two insulin-like peptides differentially regulate malaria parasite infection in the mosquito through effects on intermediary metabolism. *Biochemical Journal*. 473: 3487-3503.
24. Li, X., Q. Liu, E.E. Lewis and E. Tarasco. 2016. Activity changes of antioxidant and detoxifying enzymes in *Tenebrio molitor* (Coleoptera: Tenebrionidae) larvae infected by the entomopathogenic nematode *Heterorhabditis beicherriana* (Rhabditida: Heterorhabditidae). *Parasitology Research*. DOI: 10.1007/s00436-016-5235-7.
25. *Noosidum, A., P. Satwong, A. Chandrapatya and E.E. Lewis. 2016. Efficacy of *Steinernema* spp. plus anti-desiccants to control two serious foliage pests of vegetable crops, *Spodoptera litura* F. and *Plutella xylostella* L. *Biological Control*. 97, 48-56.

26. Li, X., E.E. Lewis, Q.Z. Liu, H.Q. Li, C.Q. Bai and Y.Z. Wang. 2016. Effects of long-term continuous cropping on soil nematode community and soil condition associated with replant problem in strawberry habitat. *Scientific Reports*. DOI: 10.1038/srep30466.
27. Kepenekci, I., S. Hazir and E.E. Lewis. 2016. Evaluation of entomopathogenic nematodes and the supernatants of the in vitro culture medium of their mutualistic bacteria for the control of the root-knot nematodes *Meloidogyne incognita* and *M. arenaria*. *Pest Management Science*. DOI: 10.1002/ps.3998
28. Hodson, A.K. and E.E. Lewis. 2016. Managing for soil health can suppress pests. *California Agriculture*. DOI: 10.3733/ca.2016a0005.
29. *Dito, D.F., D. Shapiro-Ilan, C.A. Dunlap, R.W. Behle and E.E. Lewis. 2016. Enhanced biological control potential of the entomopathogenic nematode, *Steinernema carpocapsae*, applied with a protective gel formulation. *Biocontrol, Science and Technology*. 26: 835-848.
30. *Cortes-Martines, C., J. Ruiz-Vega, P. Matadamas-Ortiz, E.E. Lewis, T. Aquino-Bolanos and J. Navarro-Antonio. 2016. Effect of moisture evaporation from diatomaceous earth pellets on storage stability of *Steinernema glaseri*. *Biocontrol Science and Technology*. DOI: 10.1080/09583157.2015.1104650
31. Stefanovska, T., E.E. Lewis, V. Pidlisnyuk, and O. Smyrnykh. 2015. First record of *Clytra laeviuscula* Ratzeburg as potential insect pest of energy willow (*Salix viminalis* L.) in Ukraine. *Agriculture (Polnohospodárstvo)*. 61: 115–118. ISSN (Online) 1338-4376, DOI: [10.1515/agri-2015-0016](https://doi.org/10.1515/agri-2015-0016),
32. *Wang, B., N. Pakpour, E. Napoli, A. Drexler, E. Glennon, W. Surachetpong, K. Cheung, A. Aguirre, J.M. Klyver, E.E. Lewis, et al. 2015. *Anopheles stephensi* p38 MAPK signaling regulates innate immunity and bioenergetics during *Plasmodium falciparum* infection. *Parasites & Vectors*. DOI: 10.1186/s13071-015-1016-x
33. Abdolmaleki, A., Z.T. Maafi, H. Dastjerdi and E.E. Lewis. 2015. Potential efficacy of Iranian isolates of *Heterorhabditis bacteriophora* and *Steinernema feltiae* on *Pieris brassicae* (Lepidoptera: Pieridae). *Russian Journal of Nematology*. 23: 91-97.
34. Cator, L.J., J.E. Pietri, C.C. Murdock, J.R. Ohm, E.E. Lewis, A.F. Read, S. Luckhart, M.B. Thomas. 2015. Immune response and insulin signalling alter mosquito feeding behaviour to enhance malaria transmission potential. *Scientific Reports*. DOI: 10.1038/srep11947
35. *Dillman, A.R., M. Macchietto, C.F. Porter, A. Rogers, B. Williams, I. Antoshechkin, M.M. Lee, Z. Goodwin, X.J. Lu, E.E. Lewis, et. al. 2015. Comparative genomics of *Steinernema* reveals deeply conserved gene regulatory networks. *Genome Biology*. DOI: 10.1186/s13059-015-0746-6

36. Li, X., Q. Liu, Y.Z. Wang, H.Y. Sun, C.Q. Bai, and E.E. Lewis. 2015. Different changes of soil nematode communities in replant and continuous-planting peach orchards and their indicative value for peach replant problem. *Helminthologia*. 52: 261-269.
37. Kepenekci, I., S. Hazir and E.E. Lewis. 2015. Evaluation of entomopathogenic nematodes and the supernatants of the *in vitro* culture medium of their mutualistic bacteria for the control of the root-knot nematodes *Meloidogyne incognata* and *M. arenaria*. *Pest Management Science*. 72: 327-334.
38. Shapiro-Ilan, D.I., I. Brown and E.E. Lewis. 2014. Freezing and desiccation tolerance in entomopathogenic nematodes: diversity and correlation of traits. *Journal of Nematology*. 46: 27-34.
39. *Ulug, D., S. Hazir, H.K. Kaya and E.E. Lewis. 2014. Natural enemies of natural enemies: the potential top-down impact of predators on entomopathogenic nematodes. *Ecological Entomology*. 39: 462-469.
40. Bender, G.S., L.M. Bates, J. Bethke, E.E. Lewis, G. Tanizake, J. Morse and K.E. Godfrey. 2014. Evaluation of insecticides, entomopathogenic nematodes and physical soil barriers for control of *Diaprepes abbreviatus* (Coleoptera: Curculionidae) in citrus. *Journal of Economic Entomology*. 107: 2137-2146.
41. Shapiro-Ilan, D.I., E.E. Lewis, P. Schliekelman. 2013. Aggregative group behavior in insect parasitic nematode dispersal. *International Journal for Parasitology*. 44: 49-54.
42. Pidlisnyuk, V., T. Stefanovska, E.E. Lewis, L. Erickson, and L.C. Davis. 2012. Miscanthus as a productive biofuel crop for phytoremediation. 33: 1-19. *Critical Reviews in Plant Sciences*.
43. Shapiro-Ilan, D.I., E.E. Lewis, J.F. Campbell and D.B. Kim-Shapiro. 2012. Directional movement of entomopathogenic nematodes in response to electrical field: Effects of species, magnitude of voltage, and infective juvenile age. *Journal of Invertebrate Pathology*. 109: 34-40.
44. *Hodson, A.K., J.P. Siegel and E.E. Lewis. 2012. Ecological influence of the entomopathogenic nematode, *Steinernema carpocapsae*, on pistachio orchard soil arthropods. *Pedobiologia*. 55: 51-58.
45. Nielsen, A.L. and E.E. Lewis. 2012. Designing the ideal habitat for entomopathogen use in nursery production. *Pest Management Science*. 68: 1053-1061.
46. *Arimoto, H., H.K. Kaya and E.E. Lewis. 2012. A laboratory study on the effect of *Paraiotonchium autumnale* parasitism on the longevity of *Musca autumnalis*. *Parasitology*. 139: 1580-1586.

47. *Ebrahimi, L., Niknam, G., and E.E. Lewis. 2011. Lethal and sublethal effects of Iranian isolates of *Steinernema feltiae* and *Heterorhabditis bacteriophora* on the Colorado potato beetle, *Leptinotarsa decemlineata*. *BioControl*. 56: 781-788.
48. *Hodson, A.K., Friedman, M. L., Wu, L. N., and Lewis, E. E. 2011. European earwig (*Forficula auricularia*) as a novel host for the entomopathogenic nematode *Steinernema carpocapsae*. *Journal of Invertebrate Pathology*. 107: 60-64.
49. Spence, K.O. and Lewis, E.E. 2011. Biopesticides with complex modes of action: direct and indirect effects of DiTera (R) on *Meloidogyne incognita*. *Nematology*. 12:835-846.
50. **Nielsen, A.L., Spence. K.O., Nakatani, J. and E.E. Lewis. 2011. Effect of soil salinity on entomopathogenic nematode survivorship and behavior. *Nematology*. 13: 859-867.
51. *Karban, R. A. Hodson, D.S. Gruner, E.E. Lewis, J. Karban, M. Joseph, T. Mata, and D.R. Strong. 2011. Lack of susceptibility of soil-inhabiting *Platyrepia virginalis* caterpillars, a native arctiid, to entomopathogenic nematodes in nature. *Entomologia Experimentalis et Applicata*. 140: 28-34.
52. *Spence, K., Stevens, G., Arimoto, H., Ruiz-Vega, J., Kaya, H., Lewis, E. 2010. Effect of insect cadaver desiccation and soil water potential during rehydration on entomopathogenic nematode (Rhabditida: Steinernematidae and Heterorhabditidae) production and virulence. *Journal of Invertebrate Pathology*. 106: 268-273.
53. *Noosidum, A., Hodson, A.K., E. E. Lewis, and A. Chandrapatya. 2010. Characterization of new entomopathogenic nematodes from Thailand: foraging behavior and virulence to the greater wax moth, *Galleria mellonella* L. (Lepidoptera: Pyralidae). *Journal of Nematology*. 42: 281-291.
54. *Kaspi, R., A. Ross, A.K. Hodson, G.N. Stevens, H.K. Kaya and E.E. Lewis. 2010. Foraging efficacy of the entomopathogenic nematode *Steinernema riobrave* in different soil types from California citrus groves. *Applied Soil Ecology*.
55. Corby-Harris, V., A. Drexler, L. Watkins de Jong, N. Pakpour, Y. Antonova, R. Ziegler, F. Ramberg, E. Lewis, J. Brown, S. Luckhart and M. Riehle. 2010. Akt signaling reduces malaria parasite load and lifespan in *Anopheles stephensi* mosquitoes. *PLoS Pathogens*.
56. Lewis, E.E., T. Stefanovska, V. Pidlisnyuk, and H.K. Kaya. 2009. Current state and perspectives for using entomopathogenic nematodes. (In Ukrainian). *Journal of Kremenchug Mychailo Ostrogradskiy State Polytechnic University*, 4: 141-145.
57. *Tiwari, S., R.R. Youngman, E.E. Lewis and J.D. Eisenback. 2009. Effect of European corn borer (Lepidoptera: Crambidae) stalk tunneling on root- knot nematode (Tylenchida: Heteroderidae) fitness on corn. *Journal of Economic Entomology*. 102: 602-609.

58. Shapiro-Ilan, D.I., J.F. Campbell, E.E. Lewis, J.M. Elkon and D.B. Kim- Shapiro. 2009. Directional movement of steinernematid nematodes in response to electrical current. *Journal of Invertebrate Pathology*. 100: 134-137.
59. *Sirjani, F.O., E.E. Lewis and H.K. Kaya. 2009. Evaluation of entomopathogenic nematodes against the olive fruit fly, *Bactrocera oleae* (Diptera: Tephritidae). *Biological Control*. 48: 274-280.
60. Stevens, G.N., E.E. Lewis, and H.K. Kaya. 2008. Potential multitrophic influences of soil heterogeneity: roots, insect root herbivores, and entomopathogenic nematodes. *Biopesticides International*. 3:81-95
61. Nielsen, A.L., K.O. Spence and E.E. Lewis. 2008. Efficacy patterns of biopesticides used in potting media. *Biopesticides International*. 4: 87-102.
62. Spence, K.O., E.E. Lewis and R.N. Perry. 2008. Host-finding and invasion by entomopathogenic and plant-parasitic nematodes: Evaluating the ability of laboratory bioassays to predict field results. *Journal of Nematology*. 40: 93-98.
63. *Christen, J.M., J.F. Campbell, L. Zurek, D.I. Shapiro-Ilan, E.E. Lewis, and S.B. Ramaswamy. 2008. Role of symbiotic and non-symbiotic bacteria in carbon dioxide production from hosts infected with *Steinernema riobrave*. *Journal of Invertebrate Pathology*. 99: 35-42.
64. *Shapiro-Ilan, D., M. Guadalupe Rojas, J.A. Morales-Ramos, E.E. Lewis, W.L. Tedders. 2008. Effects of host nutrition on virulence and fitness of entomopathogenic nematodes: lipid- and protein-based supplements in *Tenebrio molitor* diets. *Journal of Nematology*. 40: 13-19.
65. *Boina, D.R., E.E. Lewis, and J.R. Bloomquist. 2008. Nematicidal activity of anion transport blockers against *Meloidogyne incognita*, *Ceanorhabditis elegans*, and *Heterorhabditis bacteriophora*. *Pest Management Science*. 64: 646-653.
66. Fushing, H., L. Zhu, D.I. Shapiro-Ilan, J.F. Campbell, and E.E. Lewis. 2008. State-space based mass event-history model I: many decision-making agents with one target. *Annals of Applied Statistics*. 2: 1503-1522.
67. Preisser, E.L., S.E. Gibson, L.S. Adler, and E.E. Lewis. 2007. Underground herbivory and the costs of constitutive defense in tobacco. *Acta Oecologica*. 31: 210-215.
68. *Ramos-Rodriguez, O., J.F. Campbell, E.E. Lewis, D.I. Shapiro-Ilan, and S.B. Ramaswamy. 2007. Dynamics of carbon dioxide release from insects infected with entomopathogenic nematodes. *Journal of Invertebrate Pathology*. 94: 64-69.

69. *Ramos-Rodriguez, O., J.F. Campbell, J.M. Christen, D.I. Shapiro- Ilan, E.E. Lewis, and S.B. Ramaswamy. 2007. Attraction behavior of three entomopathogenic nematode species towards infected and uninfected hosts. *Parasitology*. 134: 729-738.
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Book Chapters

1. Lewis, E.E., Stevens, G., Hiltbold, I. 2022. Nematodes as model organisms for testing theoretical models of behavioral ecology. In: *Nematodes as Biological Models* (I. Glazer, D.I. Shapiro-Ilan and P. Sternberg, eds). CABI.
2. Shapiro-Ilan, D.I, I. Hiltbold and E.E. Lewis. 2018. Ecology of invertebrate Pathogens: Nematodes. In: *Ecology of invertebrate Diseases* (A.E. Hajek and D.I. Shapiro-Ilan, eds). pp. 415-440. Wiley.
3. Stevens, G.N. and E.E. Lewis. 2017. Status of entomopathogenic nematodes in integrated pest management strategies in the USA. In: *Biological Control Agents: Entomopathogenic and slug parasitic nematodes* (M.M.M. Abd-Elgawad, T.H. Askary and J. Coupland, eds.). pp. 289-311. CAB International.
4. Lewis, E.E., S. Hazir, A. Hodson and B. Gulcu. 2015. Trophic relationships of entomopathogenic nematodes in agricultural habitats. In: *Nematode pathogenesis of insects and other pests – ecology and applied technologies for sustainable plant and crop protection* (R. Campos-Herrera, ed.). pp. 137-161. Springer.
5. Dolinski, A.C., D. Shapiro-Ilan and E.E. Lewis. 2015. Insect cadaver applications: pros and cons. In: *Nematode pathogenesis of insects and other pests – ecology and applied technologies for sustainable plant and crop protection* (R. Campos-Herrera, ed.). pp. 207-229. Springer.
6. Lewis, E.E. and D. Clarke. 2012. Nematode Parasites and Entomopathogens. In: *Insect Pathology* (Vega and Kaya, eds.). pp. 395-424. Academic Press.
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8. Lewis, E.E. and P.S. Grewal. 2004. Interactions with plant-parasitic nematodes, Grewal, Ehlers, and Shapiro-Ilan, (ed), *Nematodes as Biocontrol Agents*, CABI, 349-362.
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10. Lewis, E.E. 2002. Behavioral Ecology, R. Gaugler, (ed), *Entomopathogenic nematodes in biological control*, CABI, 205-224.
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12. Campbell, J.F., and E.E. Lewis. 2002. Entomopathogenic nematode search strategies, Lewis, Campbell, and Suhkdeho, (ed), *Behavioral ecology of parasites*, CABI Publishing.

13. Glazer, I. and E.E. Lewis. 2000. Predictive bioassays for entomopathogenic nematodes, Navon, A., and K.R.S. Ascher, (ed), Bioassays of entomopathogenic microbes and nematodes, CABI, 229-247.
14. Lewis, E.E., J.F. Campbell and R. Gaugler. 1998. A conservation approach to using entomopathogenic nematodes in turf and landscapes, Barbosa, P., (ed), Perspectives on the conservation of natural enemies of pest species, Academic Press, 235-254.
15. Lewis, E.E. 1994. Foraging strategies as a theoretical framework for the study of entomopathogenic nematode life history traits, Proceedings of the 6th International Colloquium on Invertebrate Pathology and Microbial Control, 109-114.

Books Edited

Lewis, E.E., J.F. Campbell, and M.K.V. Suhkdeho. 2002 . Behavioral Ecology of Parasites, CABI Publishing, New York, NY and Oxon, UK.

Patents

Shapiro-Ilan, D., M. McGuire, R. Behle and E. Lewis. Formulated arthropod cadavers for pest suppression. U.S. Patent No. US6,524,601 B1.

J. Bloomquist and E.E. Lewis, co-inventors. Insecticidal and Nematicidal Compositions Comprising Stilbene Compounds. Disclosed Fall, 2004, provisional patent applied for 11/04 (VTIP # 04.111).

Grants and Contracts Awarded:

Grants Active (at UI)

Title: Increasing soil health in Idaho vineyards

Agency: USDA Specialty Crops program

Amount: \$150,000

Date(s): 2023-2023

PI/Co-PI: PI

Title: Novel control methods for California prionus beetle using entomopathogenic nematodes

Agency: Hops research council

Amount: \$52,000

Date(s): 2021-2023

PI/Co-PI: Co-PI for 2021-2022; PI for 2023

Title: Undergraduate research and mentoring at the nexus of plant, animal and human health in managed ecosystems.

Agency: USDA Research and Extension Experiences for Undergraduates

Amount: \$500,000

Date(s): 8/21-7/26

PI/Co-PI: PI

Title: Soil Health and Management in Organic Systems: Identifying Meaningful Targets and Pathways To Resilience

Agency: USDA Organic Transitions Program

Amount: \$500,000

Date(s): 9/20-8/23

PI/Co-PI: co-PI (Johnson-Maynard PI)

Title: Testing the nematode suppressing ability of novel formulations in greenhouse and field trials

Agency: The Sugar Beet Alliance

Amount: \$49,558

Date(s): 6/20-5/22

PI/Co-PI: PI

Title: Group behavior and chemical signaling as drivers for entomopathogenic nematode foraging and infection dynamics

Agency: USDA-AFRI

Amount: \$500,000

Date(s): 5/18-4/14/22

PI/Co-PI: Co-PI (Shapiro-Ilan PI)

Grants Completed

Title: Converting agricultural plant waste into an effective pest control product and fertilizer

Agency: Idaho Global Entrepreneurial Mission (Department of Commerce)

Amount: \$241,000

Date(s): 7/19-11-20

PI/Co-PI: PI

Title: Leveraging nematode signals to enhance entomopathogenic nematode efficacy for pest control.

Agency: USDA-SBIR

Amount: \$100,000

Date(s): 7/15/17- 3/1/19

PI/Co-PI: Co-PI (Pheronym PI)

Title: Safe nematicides from food waste

Agency: World Wildlife Fund

Amount: \$5,000

Date(s): 9/1/17 – 9/1/19

PI/Co-PI: PI

Title: Improved end-season control and migration suppression of Lygus bugs in commercial strawberry fields

Agency: California Strawberry Commission

Amount: \$240,000 (\$80,000 per year contingent on available funding and demonstrated progress)

Date(s): 2/1/16-1/31/19

Title: Development of a rapid real time PCR assay to detect nematode pests of pistachios, walnut and almond

Agency: California Department of Food and Agriculture

Amount: \$220,000

Date(s): 10/01/2015 - 06/30/2018

Title: An Integrated Biological Approach to Fuller Rose Beetle Control to Meet Quarantine Requirements

Agency: Citrus Research Board

Amount: \$70,000

Date(s): 10/01/2013 - 09/30/2015

Title: DPR Symposium on Soil Health

Agency: California Department of Pesticide Regulation

Amount: \$55,667.00

Date(s): 02/12/2014 - 09/30/2014

Title: Evaluation of two formulations of entomopathogenic nematodes for white grub control

Agency: UC-Mexus

Amount: \$25,000

Date(s): 9/2005 - 3/2007

Title: Mechanized *in-vivo* production of entomopathogenic nematodes: expanding biocontrol utility

Agency: USDA-SBIR Phase 2

Amount: \$346,000

Date(s): 09/07 - 08/09

PI/Co-PI: Co-Investigator, Tedders (Principal Investigator)

Title: Novel formulations for entomopathogenic nematodes: Phase II

Agency: USDA-SBIR

Amount: \$74,500 (VT Share)

Date(s): 9/2002 - 9/2004

PI/Co-PI: Co-Investigator

Title: Biological and cultural control of *D. abbreviatus* in California nurseries

Agency: California Department of Food and Agriculture

Amount: \$42,900

Date(s): 01/08 - 12/09

PI/Co-PI: Principal Investigator, Lewis (Principal Investigator)

Title: Trophic dynamics in the fine-root based food web: integrating resource heterogeneity, root foraging, and root herbivory.

Agency: NSF Dissertation Improvement Grant

Amount: \$7,320

Date(s): 6/2003 - 1/2005

PI/Co-PI: Co-Investigator

Title: Infection decisions by entomopathogenic nematodes

Agency: NSF Animal Behavior Panel

Amount: \$200,000

Date(s): 9/2003 - 8/2006

PI/Co-PI: Principal Investigator

Title: Root herbivores in an orchard system: assessing the influence of root herbivory and pest management on root dynamics, soil fauna, and soil carbon pools

Agency: Kearney Foundation of Soil Science

Amount: \$168,000

Date(s): 01/07 - 12/10

PI/Co-PI: Principal Investigator, Lewis (Principal Investigator)

Title: Integrated pest management training for Virginia Schools

Agency: Environmental Protection Agency

Amount: \$19,737

Date(s): 10/2003 - 9/2005

PI/Co-PI: Co-Investigator

Title: Establishment of native plants in an exotic matrix: the role of root-based food web interactions in California's Central Valley

Agency: USDA-NRI Post-doctoral Fellowship

Amount: \$121,718.00

Date(s): 08/01/2005 - 07/31/2007

PI/Co-PI: Trainer, Glen Stevens (Principal Investigator)

Title: Biocontrol for environmental security in Ukraine

Agency: NATO

Amount: \$6,300.00

Date(s): 02/03/2009 - 02/02/2011

PI/Co-PI: Principal Investigator

Title: Evaluating entomopathogenic nematodes as biocontrol agents for citrus root weevil in California soils and climates

Agency: California Citrus Research Board

Amount: \$52,000*

Date(s): 11/2006 - 10/2007

PI/Co-PI: Principal Investigator

Title: Identifying the herbivore species complex in biofuel production systems in California and Ukraine

Agency: US Civilian Research and Development

Amount: \$13,530.00

Date(s): 10/01/2009 - 09/30/2011

PI/Co-PI: Principal Investigator

Title: Entomopathogenic nematodes for the control of the citrus root weevil, *Diaprepes abbreviatus*

Agency: UC IPM Exotic Species Program

Amount: \$74,832

Date(s): 9/2006 - 8/2008

PI/Co-PI: Principal Investigator

Title: Integrated biology learning through investigation

Agency: NSF CCLI

Amount: \$200,000**

Date(s): 5/2007 - 4/2009

PI/Co-PI: Co-Investigator, Dolan (Principal Investigator)

Goal: **UCD subcontract for \$25,901 per year.

Title: Entomopathogenic nematodes for complying with quarantine restrictions of nursery containerized plants and controlling *Diaprepes* weevil larvae

Agency: Slosson Foundation

Amount: \$51,600

Date(s): 7/2007 - 6/2009

PI/Co-PI: Co-Investigator, Kaya (Principal Investigator)

Title: Biological control of Black Vine Weevil and Citrus Root Weevil (Coleoptera: Curculionidae) using entomopathogenic nematodes in berry crops and ornamentals in Ukraine and California

Agency: U.S. Civilian Research and Development Foundation

Amount: \$11,940.00

Date(s): 09/01/2007 - 08/31/2009

PI/Co-PI: Co-Investigator, Stefanovska (Principal Investigator)

Title: Mechanized in vivo production of entomopathogenic nematodes: expanding biocontrol utility

Agency: SBIR-USDA Phase 1

Grant No.: EEL0313

Amount: \$20,000.00

Date(s): 09/01/2007 - 08/31/2009

PI/Co-PI: Co-Investigator, Tedders (Principal Investigator)

Title: Control tactics for Diaprepes
Agency: California Department of Food and Agriculture
Amount: \$76,175
Date(s): 9/20/2007 - 06/30/2010
PI/Co-PI: Co-Investigator, Godfrey (Principal Investigator)

Title: Research on the mode of action of the Nematicide DiTerra
Agency: Valent U.S.A. Corporation
Amount: \$15,000 per year
Date(s): 07/01/07 - 06/30/09
PI/Co-PI: Principal Investigator

Title: Biological control of the Agave Weevil, a pest of ornamental plants in the US and of commercial agave production for tequila and mescal in Mexico
Agency: UC Mexus Program
Amount: \$12,298.00
Date(s): 07/01/2011 - 12/31/2013
PI/Co-PI: Principal Investigator

Title: Biological Control of Key Pest of Ornamental Plants in the Greenhouse and Nursery
Agency: California Department of Food and Agriculture
Amount: \$25,000
Date(s): 10/01/2010 - 10/31/2011
PI/Co-PI: Co-Principal Investigator, Michael Parrella (Principal Investigator)

SERVICE:

Professional service

- Current: Subject Editor, Biological Control (Published by Elsevier)
- 2021: Panel Member EIP Panel for USDA
- 2020-2023: Member Faculty Affairs Committee – UI
- 2013-2018: Editor-in-Chief, Biological Control
 - As EIC, I handled all submitted manuscripts (approximately 500 per year), evaluated their appropriateness for the journal and assigned those not rejected without review to subject editors.
- 2015-2016: Trustee – Society for Invertebrate Pathology
 - Trustees are the governing board for this international scientific society
- Board Member – California Crop Improvement Association
- Advisory Board Member – AgSTART
 - AgSTART is a venture capital group specializing in agriculture-related start-up businesses in the Sacramento Valley, CA
- Scientific Program Committee, 2017 Annual Meeting of the Society for Invertebrate Pathology.
 - Meeting held August, 2017 in San Diego, CA
- 2009-2013: Subject Editor – Biological Control
- Chair, Committee on Interdepartmental Majors, UC Davis

- PI and Organizer, California Soil Health Symposium, June 2014 (an international symposium jointly sponsored by UC Davis and the California Department of Pesticide Regulation)
- Panel Member, USDA-NRI panel for Biology of arthropods and nematodes (2005)
- Chair, USDA Regional Project S-1024: Discovery of Entomopathogens and their Integration and Safety in Pest Management systems; hosted annual meeting, February 2009. Sponsored by USDA. (2008-2010)
- Panel Member, USDA-AFRI Sustainable Bioenergy Research Feedstock
- Panel Member, USDA Peer Review Panel, Sustainability and IPM. August, 2010. This panel reviews 5-year research plans submitted by USDA research scientists.
- Chair, Entomopathogenic nematode subcommittee, Society of Invertebrate Pathology (2010-2011)

University service, University of Idaho

- Chair, Parma Entomologist search committee
- Faculty Affairs Committee

University service, UC Davis

- Faculty Advisory Committee – Robert Mondavi Institute for Food and Wine, UC Davis
- UC Davis Representative – Balsells Foundation Graduate Fellowship Program
 - The Balsells Foundation engages with a number of US universities as a philanthropic partner funding graduate education for students from Catalonia, Spain. The foundation reached out to UC Davis as a destination for students interested in agriculture, and I lead the program.
- Member, College Planning Committee, UC Davis (2012)
- Served as Acting Chair, Department of Entomology (2013)

Honors and Awards:

Presented Maramorosch Lecture, April 2018. This lecture, co-presented with Shirley Luckhart, is given annually to recognize distinguished alumni from the Rutgers Entomology Department.

Book chapter highlighted by the Society for Invertebrate Pathology at the annual meeting: Shapiro-Ilan, D.I, I. Hiltbold and E.E. Lewis. 2018. Ecology of invertebrate Pathogens: Nematodes. In: Ecology of invertebrate Diseases (A.E. Hajek and D.I. Shapiro-Ilan, eds). pp. 415-440. Wiley.

Pacific Branch – Entomological Society of America Award for Excellence in Integrated Pest Management. 2016