



**RICHARD COOPER, PhD**  
**ENTOMOLOGIST, TECHNICAL DIRECTOR,**  
**COOPER PEST SOLUTIONS**

After serving as Technical Director for Cooper Pest Solutions for over 30 years, Richard joined Terminix where he now serves as Senior Director of Specialty Services. In addition to his responsibilities at Terminix, Richard holds a position as a Research Associate at Rutgers University in the Urban Pest Management Lab and serves as Vice President of BedBug Central.

Richard, earned his Bachelor of Science degree in Entomology from the University of Delaware in 1986. After graduating he enhanced his knowledge of insects working as a Field and Lab Technician for the USDA Beneficial Insect Laboratories in the biological control of Gypsy Moths and other invasive pests. Richard spent a short time with E. I. DuPont conducting field testing of insecticides, herbicides and fungicides. He continued his education, receiving a research Masters Degree in Entomology at Rutgers University in 1991 and returned to Rutgers nearly twenty years later to study bed bugs, receiving a PhD in Entomology in 2015.

Richard regularly participates in national seminars focusing on the behavior, biology and control of insects, and is frequently invited to speak at scientific and pest management industry meetings. Richard is the author of numerous articles in industry trade journals and over 36 scientific publications in peer reviewed journals. Richard has also served as a member of the United States Department of Agriculture (USDA) Brown Marmorated Stink Bug working group, to help further science related to combating this serious pest. Richard is very active in ongoing field research with a numerous manufacturers assisting in the field component of product development as well as the evaluation of product efficacy. In addition to his responsibilities at Cooper Pest Solutions and Rutgers University, he consults with other pest control companies on a variety of pest issues in both commercial and residential settings. In 2001 Richard received PCT Magazines distinguished leadership award and in 2003 was recognized as one of the top 40 professionals in the pest control industry under the age of 40 years old. Richard was also honored along with the other members of the Urban Entomology Lab at Rutgers in 2020 with the NJ Governor's Environmental Excellence award for the labs work in healthy and sustainable housing communities.

Richard is recognized as one of the world's leading experts on the subject of bed bugs and bed bug management. He has been an invited speaker at numerous bed bug symposia to include; the National Urban Entomology Meeting (2004, 2010, 2012, 2014 and 2018), the Entomological Society of America's Annual Meeting (2005, 2011, and 2012, 2013, 2016, 2017 and 2019), The International Congress of Entomology in South Korea in 2012, and Southeast Asian Pest Summit in 2014 in Malaysia. Richard is the author of seven book chapters including chapters on bed bugs in the pest management industry's most well-respected text reference, "*The Mallis Handbook of Pest Control*" 9<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup> Editions, and in the academic texts "*Urban Pest Management: An Environmental Perspective*" published in 2011 and "*Advances in the Biology and Management of Modern Bed Bugs*" published in February 2018. Richard also co-authored the 1<sup>st</sup> and 2<sup>nd</sup> editions of the most comprehensive text on *Bed Bug Handbook: the complete guide to bed bugs and their control* and "*Bed Bugs in Office Buildings – The Ultimate Challenge?*"

Richard has been consulted as an expert witness in over 30 legal and insurance claims dealing with bed bugs and has been cited as an expert by the NY Times, Wall Street Journal, Washington Post, USA Today, The Discovery Channel, CBS's The Early Show, NBC's Today Show, The Dr. Oz Show, National Public Radio (NPR), among others. In 2009 Richard was appointed to serve on the NYC Bed Bug Advisory Board by New York City's Mayor Bloomberg.

Richard served on the New Jersey DEP IPM Task Force, New York Bed Bug Advisory Board, USDA Brown Marmorated Bug Working Group, National Pest Management Technical committee. He also participates in a number of organizations including the Entomological Society of America, Pi Chi Omega, the National Pest Management Assoc. and the Earth Share, NJ., and holds pesticide applicators licenses in PA and NJ.

## *Curriculum Vitae: Richard Cooper, PhD*

### **Professional Experience**

May 2018  
to Present

**Terminix International LLC**

**Memphis, TN**

*Senior Director of Service*

Provides technical oversight for Terminix with a focus on the control of bed bugs and pest management in multifamily housing communities and property management

2015 to  
Present

**Rutgers University, Entomology Dept.**

**New Brunswick, New Jersey**

*Research Associate, Urban Entomology Lab*

Involved in laboratory and field research, design of experiments, writing of grants and refereed publications, and general support of laboratory activities.

2010 to  
Present

**BedBug Central**

**Hamilton, New Jersey**

*Vice President*

Co-founded BedBug Central, developed content and training materials during the first 4 years. Continue to serve as Vice President in play an advisory role currently.

**Cooper Pest Solutions**

**Lawrenceville, New Jersey**

*Technical Director/ Staff Entomologist*

Develops and implements training programs for staff members and pest control industry. Develops new technologies for use in Pest Control Industry and within Cooper Pest Solutions. Emphasis is placed on developing and implementing technologies that reduce or eliminate exposure of pesticides to persons and animals. Consults on a variety of urban related pest topics and conducts efficacy research for chemical manufacturers. Provides expert testimony in bed bug related insurance claims and litigation.

1986 to  
Present

1985

**E. I. DuPont Inc.**

**Elkton, Delaware**

*Field Technician*

Supported field studies on field efficacy of insecticides, herbicides and fungicides.

1983 to  
1984

**USDA - Beneficial Insects Research Laboratory**

**Newark, Delaware**

*Field and Lab Technician*

Supported field studies on biological control of gypsy moths.

### **Education**

2010 to  
2015

**Rutgers University**

**New Brunswick, New Jersey**

*PhD in Entomology*

*Thesis: "Behavioral Ecology and Control of Bed Bugs in Multifamily Housing."*

1988 to  
1991

**Rutgers University**

**New Brunswick, New Jersey**

*Masters of Science in Entomology*

*Thesis: "Effect of Feeding and Nutrition on the Development and Reproductive Physiology of German Cockroaches."*

1982 to  
1986

**University of Delaware**

**Newark, Delaware**

*Bachelors of Science in Entomology*

## Organizations

1. Pennsylvania Pest Management Association
2. New Jersey Pest Management Association
3. National Pest Management Association
4. Associated Pest Services
5. Entomological Society of America
6. Pi Chi Omega (Honorary Entomologist Society for Urban Entomologists)
7. New Jersey Environmental Federation

## Pesticide Applicators Licenses

- New Jersey Categories 7A, 7B, 7D, 10 (Research and Demonstration)
- Pennsylvania Categories 11, 12, 16, 18 (Research and Demonstration)

## Grants Received

2020-2023. Grant Amount: \$641,756 CO-PI. U.S. Department of Housing and Urban Development. Sustainable Control of House Mouse Infestations, Ectoparasites, and Allergens in Low-income Communities.

2020-2021. Grant Amount \$19,757. CO-PI. USDA Northeastern IPM Center. Developing multimedia materials to educate health care providers on bed bug IPM.

2018–2019: Grant Amount: \$50,000. CO-PI. USDA Northeastern IPM Center. Assessing and controlling house mouse infestations in multi-family dwellings.

2017–2020: Grant Amount: \$360,000. CO-PI. U.S. Department of Housing and Urban Development. Survey of Pest Infestation in Low-income Communities and Evaluation of Cost-Effective Bed Bug Management Techniques.

2017–2020: Grant Amount: \$145,411. CO-PI. USDA NIFA CPPM Extension Implementation Program. IPM training and implementation of IPM-based pest control contracts in public housing.. This is part of a larger grant proposal of totaling \$284,400 awarded to Rutgers.

2017–2018: Grant Amount: \$50,000. CO-PI. USDA Northeastern IPM Center. Developing aesthetic injury level for German cockroach IPM.

2015–2018: Grant Amount: \$175,000. CO-PI. USDA National Institute of Food and Agriculture. Reducing pest infestations and insecticide residues in low income housing.

2013–2016: Grant Amount: \$342,905. CO-PI. U.S. Department of Housing and Urban Development. Implementation and evaluation of a model bed bug management program in low-income housing.

2013–2016: Grant Amount: \$170,947. CO-PI. USDA Southern IPM Center. Bed bug impact, early detection practices and integrated pest management in multifamily housing, K. Vail, R. Tiffany, T. Fryzel, S. M. Schexnayder, L. Booth, J. Skinner and C. Wang.

2013–2015: Grant Amount: \$60,000. PI. USDA Northeastern IPM Center. Reducing insecticide use and labor through precision bed bug IPM.

2013–2014: Grant Amount: \$25,000. PI. USDA IR-4 Biopesticide Program. Efficacy of essential oil based products for control of bed bugs.

2013–2014: Grant Amount: \$15,000. PI. Washington State University Norm Ehmann Urban Pest Management Award. Using mark-release technique to study bed bug movement within apartment buildings., R. Cooper, C. Wang.

## Grants Received (continued)

- 2011-2012: Grant Amount: \$100,000. EPA Grant PI. State-wide bed bug eradication in low-income communities and evaluation of a model integrated pest management program
- 2011-2012: Grant Amount: \$20,000. NJ Pest Management Association, Associated Pest Management Association, and Copesan Services - Evaluation of Canine Scent Detection for low level bed bug infestations industry support
- 2008- 2009: Grant Amount. \$20,000. PI. NPMA Foundation Grant. Evaluation of the effectiveness of liquid residual pesticides for use in bed bug management programs

## Publications

### Books and Book Chapters

1. Pinto L.J., **R.A. Cooper**, & S. K. Kraft. 2021. Bed Bug Handbook - The Complete Guide to Bed Bugs and Their Control 2<sup>nd</sup> Ed. Pinto & Associates. 310 pages.
2. **Cooper, R.** and C. Wang. 2018. Chapter 27. Detection and monitoring. In Doggett, Miller, and Lee (eds), The Advances in the Biology and Management of Modern Bed Bugs. CABI International. pp. 241-255.
3. **Cooper, R.** and C. Wang. 2018. Chapter 33. Bed bug control in specific situations: low-income housing In Doggett, Miller, and Lee (eds), Advances in the Biology and Management of Modern Bed Bugs. CABI International. pp. 333-339.
4. Wang, C., and **R. Cooper**. 2011. Environmentally sound bed bug management solutions. In P. Dhang (ed.), Urban Pest Management: An Environmental Perspective. CABI International. pp. 44-63.
5. **Cooper R.A.** 2011. Ectoparasites Part Three: Bed Bugs & Kissing Bugs. Mallis Handbook of Pest Control Tenth ed. GIE Media Chapter 8. pp. 586-633.
6. Pinto L.J., **R.A. Cooper**, & S. K. Kraft. 2007. Bed Bug Handbook- The Complete Guide to Bed Bugs and Their Control. Pinto & Associates. 266 pages.
7. **Cooper R.A.** and H.A. Harlan. 2004. Ectoparasites Part Three: Bed Bugs & Kissing Bugs. Mallis Handbook of Pest Control Tenth ed. GIE Media Chapter 8. pp. 419-525.
8. **Cooper R. A.** 1997. Earwigs. Mallis Handbook of Pest Control Eighth ed. Chapter 5. pp. 220-231.

### Refereed Journal Articles

1. Sked, S., S. Abbar, **R. Cooper**, R. Corrigan, X. Pan, S. Ranabhat, and C. Wang. 2021. Monitoring and controlling house mouse, *Mus musculus domesticus*, infestations in low-income multi-family dwellings. *Animals*. 11, 648-664
2. Potts, R., V. Peta, D.M. Agany, E.Z. Gnimpieba, **R. Cooper**, C. Wang and J. Pietri. 2021. Molecular analysis of the blood meals and bacterial communities of bed bugs (*Cimex lectularius* L.) to assess interactions with alternative hosts. *Parasitology Research* <https://doi.org/10.1007/s00436-021-07079-x>.
3. Wang, C., A. Eiden, **R. Cooper**, C. Zha, D. Wang, R.G. Hamilton. 2020. Abatement of Cockroach Allergens by Effective Cockroach Management in Apartments. *J. Allerg.and Clin. Immun.* <https://doi.org/10.1016/j.jaip.2020.06.040>
4. Wang, C., E. Bischoff., A. Eiden, C. Zha, **R. Cooper**, J. Graber. Zha. 2019. Residents Attitudes and Home Sanitation Predict Presence of German Cockroaches (Blattodea: Ectobiidae) in Apartments for Low-Income Senior Residents. *Journal of Econ. Entomol.* DOI: 10.1093/jee/toy307
5. Wang, C., A. Eiden, **R. Cooper**, C. Zha. 2019. Effectiveness of Building-Wide Integrated Pest Management Programs for German Cockroach and Bed Bug in a High-Rise Apartment Building. *J Integ. Pest Mngmt.* <https://doi.org/10.1093/jipm/pmz031>
6. Wang, C., A. Eiden, **R. Cooper**, C. Zha, and D. Wang, and E. Reilly. 2019. Changes in indoor insecticide residue levels after adopting an integrated pest management program to control German cockroach infestations in an apartment building. *Insects*. [doi.org/10.3390/insects10090304](https://doi.org/10.3390/insects10090304). <https://www.mdpi.com/2075-4450/10/9/304>

## Refereed Journal Articles (continued)

7. Zha, C., Wang, A Eiden, **R. Cooper**, and D. Wang. 2019. Spatial distribution of German Cockroaches in a high-rise apartment building during building-wide integrated pest management. *J Econ. Entomol.* 112(5) 2019, 2302–2310.
8. Wang, C., A. Eiden, **R. Cooper**, C. Zha, D. Wang, and E. Reilly. 2019. Changes in Indoor Insecticide Residue Levels after Adopting an Integrated Pest Management Program to Control German Cockroach Infestations in an Apartment Building. *Insects*. DOI: 10.3390/insects10090304
9. Bischoff, E., A. Eiden, C. Zha, and **R. Cooper**. 2018. Residents Attitudes and Home Sanitation Predict Presence of German Cockroaches (Blattodea: Ectobiidae) in Apartments for Low-Income Senior Residents. *Econ. Entomol. Sci.* DOI 10.1093.
10. Wang, D., C. Wang, C., Wang, G., Zha, C., Eiden, A., and **Cooper, R.** 2018. Efficacy of three different steamers for control of bed bugs (*Cimex lectularius* L.). *Pest Mangmt. Sci.* DOI 10.1002/ps.4933.
11. Zha, C., C. Wang, B. Buckley, D. Wang, A. Eiden, and **R. Cooper**. 2018. Pest Prevalence and Evaluation of Community-Wide Integrated Pest Management for Reducing Cockroach Infestations and Indoor Insecticide Residues. *J Econ. Entomol.* DOI: 10.1093/jee/tox356
12. Wang, C., A. Eiden, N. Singh, C. Zha, D. Wang, and **R. Cooper**. 2017. Dynamics of Bed Bug Infestations in Three Low-Income Housing Communities with Various Bed Bug Management Programs. *Pest. Manag. Sci.* DOI:10.1002/ps.4830
13. Wang, D., C. Wang, N. Singh, A. Eiden, **R. Cooper**, and C. Zha. 2017. Effect of feeding history and time elapsed from field collection on the locomotion behavior and response to stimulation in the common bed bug, *Cimex lectularius*. *Journal of Economic Entomology*. DOI: <https://doi.org/10.1093/jee/tox148>.
14. Singh, N., C. Wang, D. Wang, **R. Cooper**, C. Zha. 2016. Comparative efficacy of selected dust insecticides for controlling *Cimex lectularius* (Hemiptera: Cimicidae). *Journal of Economic Entomology* Doi: 10.1093/jee/tow129.
15. Wang, D., C. Wang, N. Singh, **R. Cooper**, C. Zha, and A. Eiden. 2016. Effect of mating status and age on the male mate choice and mating competency in the common bed bug, *Cimex lectularius* (Hemiptera: Cimicidae). *Journal of Economic Entomology*. Doi: 10.1093/jee/tow077
16. Singh, N., C. Wang, and **R. Cooper**. 2015. Posttreatment Feeding Affects Mortality of Bed Bugs (Hemiptera: Cimicidae) Exposed to Insecticides. *J. Econ. Entomol.* 107 Doi: 10.1093/jee/tov293.
17. **Cooper, R.**, C. Wang, and N. Singh. 2015. Mark-release-recapture reveals extensive movement of bed bugs (*Cimex lectularius* L.) within and between apartments. *PLoS One*. 10: e013642. doi: 10.1371/journal.pone.0136462.
18. **Cooper, R.**, C. Wang, and N. Singh. 2015. Effects of various interventions, including mass trapping with passive pitfall traps, on low-level bed bug populations in apartments. *J. Econ. Entomol.* 108: 1-8. doi: 10.1093/jee/tov337.
19. Singh, N., C. Wang, and **R. Cooper**. 2014. Potential of essential oil-based pesticides and detergents for bed bug control. *J. Econ. Entomol.* 107: 2163–2170.
20. Singh, N., C. Wang, and **R. Cooper**. 2015a. Effectiveness of a sugar-yeast monitor and a chemical lure for detecting bed bugs. *J. Econ. Entomol.* 108. Doi: 10.1093/jee/tov061.
21. Wang, C., N. Singh, and **R. Cooper**. 2015. Field study of the comparative efficacy of three pyrethroid/neonicotinoid mixture products for the control of the common bed bug, *Cimex lectularius*. *Insects*. 6(1), 197-205.
22. Singh, N., C. Wang, and **R. Cooper**. 2015. Role of vision and mechanoreception in bed bug, *Cimex lectularius* L. *PLoS One*. <https://doi.org/10.1371/journal.pone.0118855>
23. **Cooper, R.**, C. Wang, and N. Singh. 2015. Evaluation of a model community-wide bed bug management program in affordable housing. *Pest Mangmt. Sci.* DOI 10.1002/ps.3982
24. **Cooper, R.**, C. Wang, and N. Singh. 2014. Accuracy of trained canines for detecting bed bugs (Hemiptera: Cimicidae). *J. Econ. Entomol.* 107(6) 2171-2181.

### Refereed Journal Articles (continued)

25. Wang, C., N. Singh, and **R. Cooper**. 2014. Efficacy of an essential oil-based pesticide for controlling bed bug (*Cimex lectularius*) infestations in apartment buildings. *Insects* 5: 849-859.
26. Singh, N., C. Wang, and **R. Cooper**. 2014. Potential of essential oil-based pesticides and detergents for bed bug control. *J. Econ. Entomol.* 107(6) 2163-2170.
27. Singh, N., C. Wang, and **R. Cooper**. 2013. Effectiveness of a reduced-risk insecticide based bed bug management program in low-income housing. *Insects* 4: 731-742.
28. Wang C., N. Singh, **R. Cooper**, and C. Liu, and G. Buczkowski. 2013. Evaluation of an Insecticide Dust Band Treatment Method for Controlling Bed Bugs *J. Econ. Entomol.* 106(1): 347-352.
29. Singh, N., C. Wang, and **R. Cooper**. 2013. Effect of trap design, chemical lure, carbon dioxide release rate, and source of carbon dioxide on efficacy of bed bug monitors. *J. Econ. Entomol.* In review.
30. Singh, N., C. Wang, **R. Cooper**, and C. Liu.. 2012. Interactions among carbon dioxide, heat and chemical lures in attracting the bed bug, *Cimex lectularius* L. (Hemiptera: Cimicidae). *Psyche*. doi:10.1155/2012/273613
31. Wang, C., Tsai, W., **Cooper, R** and J. White. 2011. Effectiveness of Bed Bug Monitors for Detecting and Trapping Bed Bugs in Apartments. *J. Econ. Entomol.* 104(1) 274-278.
32. **Cooper, R. A.** & C. Schal, 1992. Differential development and reproduction of the German cockroach (Dictyoptera: Blattellidae) on three laboratory diets. *J. Econ. Entomol.* 85(3): 838-884.
33. **Cooper, R. A.** & C. Schal, 1992. Effects of protein type and concentration on development and reproduction of the German cockroach, *Blattella germanica*. *Entomol. exp. appl.* 63: 123-134.
34. Steltenkamp, R. J., R. L. Hamilton., **R. A. Cooper.**, C. Schal. 1992. Alkyl and Aryl Neoalkanamides: Highly Effective Insect Repellents. *Journal Medical Entomol.* 29(2) 141-149
35. Hamilton, R. L., **R. A. Cooper** & C. Schal, 1990. The influence of nymphal and adult dietary protein on food intake and reproduction in female brown banded cockroaches. *Entomol. exp. appl.* 55: 23-31.

### Non-refereed journal articles

1. Wang, C., and **R. Cooper**. 2016. Research Update: Portable Heat Chambers. *Pest Control Technology* 44.
2. **Cooper, R.** 2014. Stop bed bugs in their tracks. *Pest Control Technology* 42(8): 102, 104, 106.
3. Wang, C., N. Singh and **R. Cooper** 2014. What causes bed bug control failure? The resident factor. *Pest Control Technology* 42(8): 86, 89-90, 92-93.
4. Wang, C., N. Singh, **R. Cooper**, C. Scherer. Baiting for success. 2013. *Pest Control Technology* 41(7): 60-64.
5. Singh, N., C. Wang, **R. Cooper**. 2013. Natural pesticides for bed bug control: Do they work? *Pest Control Technology* 41(3): 28, 30, 32. [30% writing and contribution of ideas]
6. **Cooper, R.**, C. Wang, N. Singh. 2012. Canine Scent Detection: Their effectiveness and pitfalls. National Conference on Urban Entomology Proceedings. Atlanta, GA. 141-142.
7. Singh, N., C. Wang, and **R. Cooper**. 2013. Natural pesticides for bed bug control: Do they work? *Pest Control Technol.* March 41(3): pp. 28-29.
8. Wang, C., and **R. Cooper**. 2012. The future of bed bug monitoring. *Pestworld* (January/February): 1-6.
9. Wang, C and **Cooper, R.** 2011. Detection tools and technologies. *Pest Control Technology* 39(8): 72, 74, 76, 78-79, 112.
10. Pinto, L., **R.A. Cooper**, and S. Kraft. 2010. "Bed Bugs in Office Buildings: The Ultimate Challenge" Supplement in *Pest Control Technology Magazine (PCT)* February 2010.
11. **Cooper, R. A.** 2009. "The Changing World of Bed Bug Detection" *Apartment Industry Magazine (AIM)* April-May

### **Non-refereed journal articles (continued)**

12. **Cooper, R. A.** 2008. "Bed Bug: Not New Anymore, Getting Out In Front of the Problem" Apartment Industry Magazine (AIM) April-May
13. **Cooper, R. A.** 2007. "Four-Legged Detectives." Pest Control Magazine, August.
14. **Cooper, R. A.** 2007. "Don't Let the Bed Bugs Bite Your Business" Progressive Rentals Magazine August-September
15. **Cooper, R. A.** 2007. "Bed Bugs and Developing Your Strategy" Apartment Industry Magazine (AIM) April-May
16. **Cooper, R. A.** 2007. "To Inspect or Not to Inspect That is the Question" Apartment Industry Magazine (AIM) June-July
17. **Cooper, R. A.** 2007. "Just Encase: Mattress and box spring encasements can serve as an essential tool in effective bed bug management" Pest Control Magazine, April.
18. **Cooper, R. A.** 2007. "Are Bed Bug Dogs Up To Snuff?" Pest Control Magazine, January.
19. **Cooper R. A.** 2007. "Bed Bugs The Truth." New Jersey Property Owners Association March
20. **Cooper R. A.** 2006. Hospitality Law Newsletter Commentary on "Guests Bed Bug Claim Goes to Trial" July
21. **Cooper R. A.** 1999. IPM: Have we Created a Monster. PCT Magazine October Issue pp. 42-50
22. **Cooper R. A., & D. Guarino,** 1996. Integrated Pest Management, Science Alliance Teaching Module. Somerset/Hunterdon Business & Education Partnership. Pp 1-65.
23. Shaheen L. & **R. A. Cooper,** 1995. Real World IPM. Pest Control Mag., Eastern Conf.Show Guide.

## **Public Speaking**

### **Scientific Presentations**

1. Entomological Society of America Annual meeting - invited speaker Indoor Pests and Human Health: Advocating for Interdisciplinary Interactions: Interventions to recude bed bug infestations in low-oincom homes. St. Louis, MO 2019.
2. National Conference on Urban Entomology - Assessment Based Pest Management Symposium. Assessment Based Bed Bug Management in Affordable Housing. Raleigh NC May 2018
3. International Conference on IPM - Assessment Based Pest Management Symposium. Assessment Based Bed Bug Management in Affordable Housing Baltimore, MD March 2018
4. Entomological Society of America Annual meeting - invited speaker MUVE symposium: Advances in the Biology and Management of Modern Bed Bugs Denver, CO. 2017
5. Entomological Society of America Eastern Branch Meeting – invited speaker bed bug research symposium. Application of field research findings in the development of a bed bug management program. Philadelphia, PA. 2016
6. National Conference on Urban Entomology - Doctoral award presentation: Using mark-release-recapture technique to study bed bug movement. San Antonio, TX. 2014
7. Entomological Society of America Annual meeting - MUVE symposium: Importance of detection and insights into population distribution in multifamily housing. Knoxville, TN 2014
8. Entomological Society of America Annual Meeting – invited speaker bed bug research symposium. Knoxville, TN November 2012
9. International Congress of Entomology - invited speaker bed bug research symposium. Daegu, S. Korea. August 2012
10. Entomological Society of America Eastern Branch Meeting – invited speaker on Brown Marmorated Stink Bugs. Harrisburg, PA March 2011

### **Scientific Meetings (continued)**

11. NJ Mosquito Control Association Annual Meeting – invited speaker on bed bugs. Atlantic City, NJ March 2011
12. Entomological Society of America Annual Meeting – invited speaker bed bug research symposium. Knoxville, TN Reno November 2011
13. National Conference on Urban Entomology – invited speaker bed bug research symposium. Atlanta, GA. May 2012
14. National Conference on Urban Entomology – invited speaker bed bug research symposium. Portland, OR. May 2010
15. International IPM Meeting Invited Speaker: IPM in Bed Bug Management Portland OR 2009
16. Entomological Society of America Annual Meeting – invited speaker Non Chemical Advancements in the Control of Bed Bugs – the use of encasements San Diego, CA Dec 2007
17. National Environmental Health Association Annual Meeting: Bed Bugs June 2007
18. Entomological Society of America Eastern Branch Meeting – invited speaker on Bed Bugs Harrisburg, PA March 2007
19. Rutgers University Cooperative Extension – Public Health & Pest Control Operators Meeting – Bed Bugs November 2007
20. Rutgers University Entomology Department Seminar – Bed Bugs & IPM New Brunswick, NJ June 2006
21. Entomological Society of America Eastern Branch Meeting – invited speaker on Beyond Fear Factor Symposia Harrisburg, PA March 2005
22. Entomological Society of America Annual Meeting – invited speaker Bed bug symposia – Ft. Lauderdale, FL. Dec. 2005
23. National Conference on Urban Entomology – invited speaker bed bugs Phoenix, AZ Atlanta, GA. May 2004
24. Entomological Society of America Eastern Branch Meeting – invited speaker on Ant Management. Atlantic City March 2003

### **Government Agency Presentations**

1. United States Department of Housing (US HUD). Bed Bug Seminar/Webinar for Field Agents. Washington, DC September 2015
2. State of NJ DCA – Training of Code Enforcement Inspectors (Bed Bugs) 2008, 2009, 2010, 2013
3. EPA Bed Bug 2<sup>nd</sup> Summit: Invited Speaker on Expert Panel – Washington, DC Feb 2011
4. USDA Brown Marmorated Stink Bug Working Group Meeting – invited speaker Brown Marmorated Stink Bugs as an Urban Pest. Kearneysville, WV June 2010.
5. EPA Bed Bug Summit: Invited Speaker on Expert Panel – Washington, DC April 2009
6. New Hampshire Department of Agriculture. Invited speaker Bed Bugs: Research and Management Updates. December 2009
7. Tri Agency Meeting - EPA, State Regulators & Cooperative Extension, New Brunswick, NJ September 2008
8. New Jersey Environmental Health Annual Meeting Bed Bugs New Brunswick, NJ Sept. 2006
9. Monmouth County Health Department – Bed Bug Seminar. Monmouth, NJ November 2006
10. New Jersey Environmental Health Annual Meeting Bed Bugs & IPM Atlantic City, NJ Sept. 2005
11. Maine Department of Agriculture: Bed Bugs, IPM in Schools & Commercial Structures 2005



12. EPA Region 2 Conference – Invited speaker on Urban IPM New Brunswick, NJ September 1998

### **Industry and Stakeholder Group Presentations**

1. New York Pest Management Bed Bug Workshop. Bed Bug Management in Office Settings. Virtual Conference January 2021
2. Canadian Pest Management Association Annual Meeting – Bed Bug Management in Multifamily Communities. Quebec City CA March 2020
3. Kentucky Pest Control Short Course – Twenty Years Battling Bed Bugs. Lexington, KY Nov 2019
4. National Pest Management Association (Pest World) – Overcoming Challenges of Bed Bug Management in Affordable Multi-family Housing. San Diego, CA October 2019
5. India Pest Control Association– Modern Bed Bug Management, Bangalore India July 2019
6. NY Pest Management Bed Bug Workshop – Assessment-based Pest Management in Multifamily Housing. Long Island, NY January 2019
7. NJ Pest Management Bed Bug Workshop – Assessment-based Pest Management in Multifamily Housing. Piscataway, NJ January 2019
8. Pennsylvania Pest Management Association State Meeting – Insect ID for the Non Entomologist Lancaster PA Jan 2019
9. University of Tennessee Bed Bug Workshop – No Prep Approach to Bed Bug Management. Knoxville, TN July 2018
10. Global Bed Bug Summit – Bed Bug Management in Multifamily Housing: Turning Failures into Success. Denver, Co. December 2018
11. Global Bed Bug Summit – Bed Bugs: Affordable Housing Workshop, Denver, Co. December 2018
12. Stop Pests/US HUD NE IPM Center Webinar: Effective Bed Bug Management in Affordable Housing. July 2018
13. Healthy Housing/ US HUD Webinar Series: Bed Bug Management in Multifamily & Affordable Housing Communities February 2018, April 2018, July 2018, September 2018
14. NJ Pest Management Association Annual Meeting – Insect ID for the Non Entomologist. Bridgewater NJ August 2017
15. Global Bed Bug Summit – Rutgers Bed Bug Research Updates. Indianapolis, IN. December 2015
16. Global Bed Bug Summit – Multifamily Housing Workshop. Community Wide Bed Bug Management-How to Solve Widespread Problems and Stay Ahead of the Bug. Indianapolis, IN. December 2015
17. Kentucky Pest Control Short Course – Bed Bug Research: What I Have Learned. Lexington, KY 2015
18. Maryland Interstate Pest Management Conference - Keynote presentation: Applying research to bed bug management Tinicum, MD 2015
19. Global Bed Bug Summit – Getting control of bed bugs when client cooperation is less than ideal. Denver, CO January 2015
20. Asian Pest Summit - Sustainable bed bug management in affordable housing communities. Kuala Lumpur, Malaysia 2014
21. NY State Pest Annual Pest Management Conference. Insect ID for the Non Entomologist. New Rochelle, NY March 2013.
22. Pacific Northwest Pest Management Conference. Insect ID for the Non Entomologist. Portland, OR. March 2013.
23. Associated Pest Services Winter Meeting, New York, Manhattan: Bed Bug Updates: Applying Research Findings February 2012
24. 2<sup>nd</sup> National Bed Bug Summit. Invited speaker on education panel – Washington DC February 2011

## **Industry and Stakeholder Group Presentations (continued)**

25. National Pest Management Bed Bug Forum: Invited speaker on Bed Bug Detection Panel - Bed Bugs: The Universe of Detection - Denver, CO. – January 2011
26. National Industrial Hygiene Conference - Expert Panel: Bed Bug Invasion: Public Health Ramifications and Control – December 2010
27. Hospitality Interactive Webinar - What every Hotelier needs to know about Bed Bugs! November 2010
28. New Jersey Pest Management Fall Meeting – Bed Bugs: Edison, NJ September 2010
29. North American Bed Bug Summit – Bed Bugs in Group Transient Settings- Chicago, IL. September 2010
30. Mid-Manhattan Library lecture series – Bed Bugs: What you don't know could come back to bite you. May 2010
31. Corporate Housing Providers Association (CHPA) Webinar - Bed Bugs: Fighting the bed bug battle. March 2010
32. Hospitality Lawyer Conference. Houston, TX Panel with Dr. Christian Hardigree: Bed Bugs: Don't Let Bed Bugs Bite You in Court, What You Need to Know. February 2010
33. Nevada Pest Control Association: Invited speaker Bed Bug Management. January 2010
34. Greater Chicago Pest Management Meeting. Invited speaker Bed Bugs: Everything that You Need to Know. November 2009.
35. Target Spec. Products. Invited speaker: Bed Bug Update. Seattle WA, and Portland OR November 2009.
36. International Flight Attendants Association. Invited speaker: Bed Bugs: Not New Anymore, Getting Ahead of the Problem. Miami, Florida October 2009
37. Virginia Pest Management Association. Invited speaker. Bed Bugs: The Challenge Continues. October 2009
38. National Bed Bug Seminar Invited Speaker - Newark NJ & Seattle Washington 2009. Seminar co-sponsored by the American Hotel & Lodging Association, National Apartment Association, National Pest Management Association and Association of Pesticide Regulatory Officials
39. NJ Pest Management Association State Meeting: Invited speaker Carpenter Ant Control August 2009
40. Pest Control Technology Bed Bug Seminar with Dr. Christian Hardigree (UNLV): Orlando August 2009
41. Northwest Pacific Pest Management Meeting: Bed Bugs – Portland OR 2009
42. Illinois Pest Management Meeting: Bed Bugs – Springfield Illinois 2009
43. Associated Pest Service, Ft. Lauderdale Florida: Bed Bug Updates January 2009
44. Maryland Interstate Pest Control Conference: Bed Bug Research Updates January 2009
45. New England Pest Management: Bed Bugs: Everything you need to know, Boston October 2009
46. Arkansas Pest Management Meeting- Bed Bugs September of 2008
47. National Bed Bug Seminar Series with Dr. Michael Potter (U of K) & Christian Hardigree (UNLV): San Francisco, Atlanta & Washington DC Seminar series July & August 2008
48. New Jersey Apartment Association Annual Education Meeting Bed Bugs May 2008
49. Minnesota Pest Management Meeting: Bed Bugs Bed Bugs and Carpenter Ants - March 2008
50. Michigan State Pest Management Meeting: Bed Bugs February 2008
51. Purdue Pest Control Conference: Bed Bugs January 2008
52. North Carolina Pest Management Association: Bed Bugs January 2008

## **Industry and Stakeholder Group Presentations (continued)**

53. Association of Professional Rental Organizations- National Meeting Reno Nevada: Bed Bugs September 2007
54. National Bed Bug Seminar Series with Dr. Michael Potter (U of K) & Christian Hardigree (UNLV): NYC & Las Vegas August & September 2007
55. NJ Pest Management Association Annual Education Clinic – Bed Bugs- Things that may not be readily apparent. August 2007
56. NJ Apartment Association: Bed Bug Workshop – Bed Bugs: What you need to know but may wish you never heard. July 2007
57. Family Services Association, NJ State Education Meeting Owners of Group Homes, June 2007
58. NJ Apartment Association Annual Education Meeting: Bed Bugs May 2007
59. NJ Property Owners Association (PONJ): Bed Bugs shared presentation with Attorney Timothy Wenk, Shafer Glazer March 2007
60. Minnesota Pest Management Meeting: Bed Bugs (March 2007)
61. The Rental Industry Buyers Group (TRIB) Meeting of the Minds in Atlanta, GA Bed Bugs March 2007
62. NJ Apartment Association: 3 Hour Bed Bug Seminar - Jan 2007
63. Maryland Interstate Conference Keynote Presentation on Bed Bugs January 2007
64. North Carolina Pest Management Association: Insect ID for the Non-Entomologist January 2007
65. Pennsylvania Pest Management Association Annual Meeting: Bed Bugs November 2006
66. Connecticut Apartment Association Annual Meeting: Bed Bugs November 2006
67. Nova Scotia, Canada Annual Pest Management Conference: Bed Bugs October 2006
68. University of Kentucky: Pest Management Short Course Bed Bugs October 2006
69. National Pest Management Association: Bed Bugs (October 2006 National Meeting)
70. Northeast Integrated Pest Management Meeting Boxborough, MA July 2006
71. National Pest Management Association: Bed Bug Expert Panel, Jan 2006
72. Purdue University: Bed Bugs: Complicated Situations Jan 2006
73. Pennsylvania Pest Management Annual Meeting: Bed Bug Management November 2005
74. New Jersey Environmental Federation & NJDEP: School IPM Training Outreach Presentations 2005
75. National Pest Management: Newark, NJ Bed Bug Workshop 2005
76. National Pest Management Association: Expert Panel on Bed Bugs 2005
77. British Columbia Pest Management Conference: Carpenter Ants- An exterior Approach & Pest Identification for the Non Entomologist 2005
78. Wisconsin Pest Management Conference: Cockroach Management & Insect ID 2005
79. Minnesota Pest Management Meeting: Carpenter Ant – Exterior Approach
80. Pennsylvania Pest Management Association's Annual Meeting: Structurally Invading Ants 2005
81. Ant Management Summit, Atlanta, GA 2004
82. University of Kentucky Short Course, Lexington KY 2003
83. Audubon Society/Sierra Club: Bed Bugs and other emerging pest issues 2003
84. National Pest Management Meeting, Orlando Florida 2002

## **Industry and Stakeholder Group Presentations (continued)**

85. Aventis/Pest Control Technology Tick Control Symposium, Jacksonville Florida -2002
86. Alliance for Environmental Concerns Ann. Meeting (speaker & panel member 1999) Termite Control Technology. Purdue University Lafayette Indiana. Dec 2001
87. Aventis/Pest Control Technology Ant Symposium, Phoenix Arizona -2001
88. University of Maryland, Interstate Pest Control Conference Univ. of Maryland 2000, 2005
89. University of California, California Pest Control Association – Univ. Calif. Riverside 1999
90. Purdue University, Purdue Pest Control - Conference 1999, 2001
91. New Jersey Environmental Federation Annual Meeting 1995, 1996, 1998

## **Appointments and Honors**

- 2020 NJ Governor's Environmental Excellence Award in the category of Health & Sustainable Communities, awarded to the Wang Lab of Urban Entomology, Rutgers University
- 2019 National Pest Management Association Technical Committee
- 2014 PHD Scholarship National Conference on Urban Entomology (NCUE)
- 2013 First Place Graduate Student Colloquium, Rutgers University Entomology Department
- 2012 ESA travel award for International Congress of Entomology Daegu, South Korea.
- 2012 Compton Markel Award Rutgers University
- 2011 Runk Scholarship Rutgers University
- 2010 Headlee Fellowship for Ph.D. bed bug research. Rutgers University, New Brunswick New Jersey
- 2010 Appointed to USDA Brown Marmorated Stink Bug Working Group
- 2009 Appointed by NYC Mayor Bloomberg to the NYC Bed Bug Advisory Board
- 2009 EPA Bed Bug Initiative – Invited as Speaker on EPA Panel
- 2003-2006 NPMA Quality Pro Technical Committee
- 2003 Developed NJ IPM Credentialing Exam
- 2003 Advisory Committee for National Pest Management Quality Pro Initiative (Establishment of Pest Control Industries version of "Good Seal"
- 2003 Received the PCT 40 under 40 award. Recognizes leaders in the industry whom are 40 years old or younger
- 2001 Received Pest Control Technology Leadership Award: Recognized as one of the 10 most influential persons in the Pest Management Industry
- 2002 Member of the National Pest Control Project Development Council Committee General Pest Control
- 2001 Member of IPM in Schools committee for National Pest Management Association (Project Development Council).
- 2001 Invited to attend Scientific Symposium on Termites, Purdue University. The purpose of this conference to set Research Objectives for the future of 2000 Member of planning committee for the International Conference for Urban Pests to be held in 2002
- 2000 Committee member for National Pest Management Association Project Development Council on IPM in Schools.

### **Appointments and Honors (continued)**

- 1997-98 Chairperson of National Pest Control Project Development Council Committee on Fumigation and New Technologies.
- 1997 Invited to attend Scientific Symposium on Baiting of Cockroaches and Ants. The purpose of this conference to set Research Objectives for the future of Bait Technology in Roaches and Ants. Purdue University Lafayette Indiana.
- 1990-1992 received Fellowship for Master's Thesis Research on German Cockroaches. Rutgers University, New Brunswick New Jersey

### **Media Appearances**

1. National Public Radio Interview about Bed Bugs with Marty Moss-Coain "Radio Times Show", Philadelphia September 2, 2010
2. CBS The Early Show as an expert on bed bugs NYC 2010
3. National Public Radio, The Leonard Lopate Show: Bed Bugs & Roaches– New York City 2009
4. The Dr. Oz Show with Dr. Dini Miller – topic bed bugs 2009
5. NBC's The Today Show as an expert on bed bugs with Mat Lauer New York City 2008
6. Dateline- Bed Bugs - Reconditioned Mattress Story Aired April 20,2008
7. National Public Radio, The Leonard Lopate Show Interview on Bed Bugs March 2007
8. National Public Radio, The Leonard Lopate Show: Bed Bugs – New York City 2006
9. Pod Cast Interview: Response to University of Kentucky news release on Pesticide Resistance in Bed Bugs; Pest Control Magazine September 2006
10. Discovery Channel Bed Bug segment. 2005
11. National Public Radio Leonard Lopate Show Interview on Bed Bugs. 2004