

**DEPARTMENT OF ENTOMOLOGY PLANT PATHOLOGY AND WEED SCIENCE,  
NEW MEXICO STATE UNIVERSITY**

**Webpage:** <http://aces.nmsu.edu/faculty/romero/index.html>

**1. BACKGROUND INFORMATION**

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**Education**

- 2009           **Ph.D., University of Kentucky.** Urban Entomology  
2005           **M.S., Kansas State University.** Veterinary Entomology  
1995           **D.V.M., National University of Colombia**

**Professional Experience**

- 2012–to date **Assistant Professor.** Department of Entomology Plant Pathology and Weed Science, New Mexico State University. Las Cruces, New Mexico.  
2012–to date **EPA-Special Government Employee.** Ad hoc member of the FIFRA Scientific Advisory Panel (FIFRA-SAP) to review issues related to methods for efficacy testing of bed bug pesticide products.  
2010–2011 **National Science Foundation (NSF) Post-Doctoral Research Fellow.** Department of Entomology, North Carolina State University. Raleigh, North Carolina.  
2005–2009 **Research Assistant.** Department of Entomology, University of Kentucky. Lexington, Kentucky.  
2003–2005 **Research Assistant.** Department of Entomology. Kansas State University. Manhattan, Kansas.  
2001–2002 **Visiting Scientist.** Mosquito and Fly Research Unit, CMAVE–USDA–ARS. Gainesville, Florida.  
1995–2001 **Veterinary Parasitologist.** National Program of Veterinary Epidemiology, Colombian Institution of Agricultural Research (CORPOICA). Bogotá, Colombia.

**Academic Honors and Awards**

- 2013           Recipient, U.S. Department of Agriculture's E. Kika de la Garza Fellowship  
2012           Recipient, travel award granted by Entomological Society of America to attend the XXIV International Congress of Entomology, Daegu, Korea.  
2012           Recipient, travel award granted by Entomological Society of America to attend the LX Annual Meeting of the Entomological Society of America, Knoxville TN.

- 2010 Recipient, National Science Foundation Minority Postdoctoral Fellowship in Biology (3 years).
- 2008 Recipient, Pi Chi Omega Scholarship. The National Professional Pest Control Fraternity.
- 2008 Winner, National Conference of Urban Entomology Ph.D. Award. Tulsa, OK.
- 2008 Member of the first ever list of “Future Leaders 40 & Under” of the Pest Management Professional Magazine.
- 2007 Recipient “The Jeffery LaFage Graduate Student Research Award”, Entomological Foundation.
- 2006 Finalist (first runner-up) “BAYER – National Pest Management Association Young Scientist of the Year” National Competition.
- 2005–2009 Urban Entomology Fellowship, Department of Entomology, University of Kentucky.

## **2. RESEARCH**

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### **Peer-reviewed journal articles**

1. **Romero A.**, A. M. Sutherland, D. H. Gouge, H. Spafford, S. Nair, V. Lewis, D-H Choe, S. Li, and D. Young. (2017). Pest management strategies for bed bugs in multi-unit housing: A literature review on field studies. *Journal of Integrated Pest Management*. *In print*.
2. Gaire S., M. Connell, F. O. Holguin, A. Amatya, S. Bundy, and **A. Romero**. (2017). Insecticidal properties of essential oils and some of their constituents on the Turkestan cockroach (Blattodea: Blattidae). *Journal of Economic Entomology* 110: 584-592.
3. **Romero, A.**, and Troy Anderson (2016). High levels of resistance in the common bed bug, *Cimex lectularius* (Hemiptera: Cimicidae), to neonicotinoid insecticides. *Journal of Medical Entomology* 53: 1-5.  
<http://jme.oxfordjournals.org/content/jmedent/early/2016/01/22/jme.tjv253>.
4. **Romero, A.**, and Schal, C. (2014). Blood constituents as phagostimulants for the bed bug, *Cimex lectularius* L. *Journal of Experimental Biology* 217: 552-557.  
<http://jeb.biologists.org/content/217/4/552>
5. Hansen, I. A., Rodriguez S. D., Drake L. L., Price D. P., Blakely, B. N., Hammond, J. I., Tsujimoto, H., Monroy E. Y., Maio W. A., and **Romero, A.** (2014). The Odorant receptor co-receptor from the bed bug, *Cimex lectularius* L. *PLoS ONE*. DOI: 10.1371/journal.pone.0113692
6. **Romero, A.** (2011). Moving from the old to the new: insecticide research on bed bugs since the resurgence. *Insects* 2: 210-217.
7. **Romero, A.**, M. F. Potter, and K. F. Haynes. (2010). Evaluation of chlorfenapyr for control of the bed bug, *Cimex lectularius* L. *Pest Management Science* 66: 1243-1248.
8. **Romero, A.**, M. F. Potter, and K. F. Haynes. (2010). Circadian rhythm of locomotor activity in the bed bug, *Cimex lectularius* L. *Journal of Insect Physiology* 56: 1516- 1522.

9. **Romero, A.**, J. A. Hogsette, and A. Coronado. (2010). Distribution and abundance of natural parasitoid (Hymenoptera: Pteromalidae) populations of house flies and stable flies (Diptera: Muscidae) at the University of Florida dairy research unit. *Neotropical Entomology* 39: 424-429.
10. Ribeiro, J. M. C., I. M. Francischetti, E. Calvo, V. M. Pham, A. J. Favreau, K. D. Barbian, **A. Romero**, and J. G. Valenzuela. (2010). An insight into the sialome of the bed bug *Cimex lectularius*. *Journal of Proteome Research* 9: 3820-3831.
11. Zhu, F., J. Wigginton, **A. Romero**, A. Moore, K. Ferguson, R. Palli, M. F. Potter, K. F. Haynes, and S. R. Palli. (2010). Widespread distribution of knockdown resistance mutations in the bed bug, *Cimex lectularius* (Hemiptera: Cimicidae), populations in the United States. *Archives of Insect Biochemistry and Physiology* 73: 245-257.
12. **Romero, A.**, M. F. Potter, and K. F. Haynes. (2009). Evaluation of piperonyl butoxide as a deltamethrin synergist for pyrethroid-resistant bed bugs. *Journal of Economic Entomology* 102: 2310-2315.
13. **Romero, A.**, M. F. Potter, and K. F. Haynes. (2009). Behavioral responses of the bed bug to insecticide residues. *Journal of Medical Entomology* 46: 51-57.
14. **Romero, A.**, M. F. Potter; D. Potter, and K. F. Haynes. (2007). Insecticide resistance in the bed bug: A factor in the pest's sudden resurgence? *Journal of Medical Entomology* 44: 175-178.
15. **Romero, A.**, A. Broce, and L. Zurek. (2006). Role of bacteria in the oviposition behavior and larval development of stable flies. *Medical and Veterinary Entomology* 20: 115-121.
16. Benavides, E., and **A. Romero**. (2000). Preliminary results of a larval resistance test to ivermectins using *Boophilus microplus* reference strains. *Annals of the New York Academy of Sciences* 916: 610-612.
17. Benavides, E., O. Vizcaino, C. M. Britto, **A. Romero**, and A. Rubio. (2000). Attenuated trivalent vaccine against babesiosis and anaplasmosis in Colombia. *Annals of the New York Academy of Sciences* 916: 613-616.
18. Benavides, E., J. L. Rodriguez, and **A. Romero**. (2000). Isolation and partial characterization of the Montecitos strain of *Boophilus microplus* (Canestrini, 1877) multi-resistant to different acaricides. *Annals of the New York Academy of Sciences* 916: 668-671.

### **Book chapters**

- Romero A. (2017). Insecticide resistance in bed bugs. In: *Advance in the Biology and Management of Modern Bed Bugs* (S. Doggett, D. Miller, C-Y. Lee, eds.), Wiley. *In press*.

### 3. TEACHING

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#### **General Instruction and Mentorship Activities**

Undergraduate courses: Economic Entomology and Parasitology

Graduate course: Urban Entomology

Number of graduate advisees (3)

1. Major Advisor of Master student Maria A. Gonzalez. Project: "Chemicals as insecticide synergists and behavioral modifiers in the common bed bug, *Cimex lectularius*" (August 2016-present)
2. Major advisor of Master Student Sudip Gaire. Project: "Toxicity of essential oils components in the Turkestan Cockroaches, *Blatta lateralis* (Blattodea: Blattidae)" (August 23, 2014 – August 2016). He is currently a PhD student at Purdue University
3. Major advisor of Master Student Andres Indacochea. Project: "Short ranges responses of the kissing bug *Triatoma rubida* to host associated cues. (May 2014 – Dec 2016).

Number of undergraduate advisees (8)

1. Desarae Herrera. Completed a study about the evaluation of phagostimulants for *Triatoma rubida* and *T. protacta*.
2. John Agnew. Conducted research on effect of aggregation pheromones on locomotor activity of bed bugs. He also was involved with the evaluation of preference of baits by German cockroaches and the behavioral effects of insecticide dust in bed bugs behavior.
3. Chelsea Rodriguez. Studied the effect of RNAi on odorant receptors of bed bugs.
4. Maria A. Gonzalez, she was an Exchange Student at NMSU in the Spring 2014 from the University of Puerto Rico at Mayaguez as part of the USDA Natural Resources Career Track (NRCT) Program. She evaluated essential oils as repellents for bed bugs.
5. Martin Teran. He was part of the New Mexico Alliance for Minority Program from 2014 to 2016. Martin was directly involved with research on repellents for bed bugs, development of rapid methods for detection of insecticide resistance and evaluation of insecticide synergists to overcome metabolic resistance in bed bugs.
6. Cesar Salcedo. He was a high school student that was part of the Las Cruces Public Schools Career & Technical Education. Cesar spent the Spring 2014 conducting research on effects of insecticides on bed bug behavior.
7. Manda Sechler, conducted research in my urban entomology laboratory on fluctuation of Turkestan populations in an urban setting.
8. Brian Sanchez. Conducted research in my laboratory on the effect of insecticide dust on bed bugs.

#### **4. EXTENSION / OUTREACH**

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##### **Trade Magazine Articles**

1. **Romero, A.**, and B. Blakely. (2017). One-two punch. Pest Control Technology. *In print*.
2. Sutherland, A., D.-H. Choe, V. Lewis, D. Young, **A. Romero**, H. Spafford, and D. Gouge. (2015). Survey sheds light on bed bugs in multi-unit housing. Pest Control Technology 43: 26, 28, 30, 32, 34, 36.
3. **Romero, A.**, M. F. Potter, and K. F. Haynes. (2009). Are dusts the bed bug bullet? Pest Management Professional, May 2009, pp. 22-30.
4. Potter, M. F., **A. Romero**, K. F. Haynes, and T. Jarzynka (2008). Bed bugs, heat and hotel rooms. Pest Control Technology Magazine, October 36: 106-121.
5. Haynes, K. F., **A. Romero**, and M. F. Potter (2008). The secret life of bed bugs. Pest World Magazine, March-April 2008: 4-8.
6. Potter, M. F., K. F. Haynes, **A. Romero**, E. Hardebeck, and W. Wickemeyer (2008). Is Phantom the bed bug answer? Pest Control Technology, June 2008: 116-124.
7. **Romero, A.**, M. F. Potter, and K. F. Haynes (2007). Insecticide resistant bed bugs: implications for the industry. Pest Control Technology, July: 42-50.
8. **Romero, A.**, M. F. Potter; D. Potter, and K. F. Haynes (2007). Resistance to pyrethroids in field populations of the bed bug *Cimex lectularius*. Resistant Pest Management Newsletter, 16 (2): 29.
9. Potter, M. F., **A. Romero**, K. F. Haynes, and E. Hardebeck (2007). Killing then softly. Battling bed bugs in sensitive accounts. Pest Control Technology, January 2007: 24-32.
10. Potter, M. F., **A. Romero**, K. F. Haynes, and W. Wickemeyer (2006). Battling bed bugs in apartments. Pest Control Technology, August: 44-52.

##### **Extension Publications**

1. Gouge D. H., L. Shujuan, N. Shaku, T. Stock, S. Bryks, C. R. Foss, A. Romero, D. J. Young and A. Code (2014). In Arizona Cooperative Extension (Ed.), Bed Bugs (ed., pp. 47). Arizona Cooperative Extension.  
<https://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1625-2014.pdf>
2. Romero, A., Sutherland, C. A. In Ana Henke, Frank Sholedice (Ed.), No deje que los chinches de cama le piquen!. Las Cruces: NMSU, Cooperative Extension Service.  
[http://aces.nmsu.edu/pubs/\\_g/G324sp.pdf](http://aces.nmsu.edu/pubs/_g/G324sp.pdf)
3. Sutherland, C. A., Romero, A. In Ana Henke, Frank Sholedice (Ed.), Sleep Tight! Don't Let the Bed Bugs Bite!. Las Cruces, NM: NMSU, Cooperative Extension Service.  
[http://aces.nmsu.edu/pubs/\\_g/G324.pdf](http://aces.nmsu.edu/pubs/_g/G324.pdf)

**Presentations for the Pest Management Industry Audience**

1. Romero, A. (2016). Bed bug resistance and what PMPs can do to combat the problem. Pest World, National Pest Management Association, Seattle, Washington, Oct 21, 2016.
2. Romero, A. (2015). What you must know about kissing bugs and Chagas disease. Universidad de la Salle, UTOPICA program, Bogota Colombia. Nov 28, 2015.
3. Romero, A. (2014). Bed bug research update from NMSU. NPMA Southwestern Branch Meeting. Albuquerque, NM. Feb 1, 2014.
4. Romero, A. (2013). Understanding residual efficacy of insecticides on bed bugs: What does formulation and substrate have to do with it? National Pest Management Association Global Bed Bug Summit. Denver, CO. Dec 5 2013.
5. Romero, A. (2013). Development and management of insecticide resistance in bed bugs. Urban Pest Control Pest Management University of California, Riverside, CA. March 26, 2013.
6. Romero, A. (2013). Resistant bed bug populations and what it means to the Pest Management Professional? National Pest Management Association Southwestern Branch meeting. February 1, 2013. Albuquerque, NM.
7. Romero, A. (2012). Bed bugs: prevention and management of infestations. Albuquerque Environmental Health Department, Department-Urban Biology Division. Albuquerque, NM, Nov 27, 2012.
8. Romero, A. (2012). Biology and management of bed bugs. New Mexico Department of Health, Albuquerque, NM. Nov 28, 2012.
9. Romero, A. (2012). Bed bugs in the school environment: what every school community needs to know. New Mexico State University, Agricultural Science Center, Los Lunas, New Mexico, March 21, 2012.

**Media/Newspaper articles**

1. Audio/Video Production on Urban Flies, KRQE NEWS 13, November 19, 2014. This newspaper article highlighted the research of flies in the Urban Entomology Research Center at New Mexico State University.
2. Press article “Professor studies life of Cockroaches”, Las Cruces Bulletin, Las Cruces, NM, January 31, 2014. This news article highlighted one of the research lines of the Urban Entomology Research Center that deals with cockroaches.
3. Documentary, NMSU Communications and Marketing Services. (September 4, 2013). Note in the NMSU News Center on bed bug research conducted by A. Romero at NMSU. This note also appeared on The Las Cruces Sun-News
4. Audio/Video Production, NMSU Communications and Marketing Services. (August 29, 2013). Video on bed bug research conducted at New Mexico State University by A. Romero.

**Outreach Activities promoting Urban Entomology**

Student visits to the Urban Entomology Research Center

**2017:**

- Gadsden Middle School Career day (~850 middle school students) (Feb 24)
- Bernardillo High School College Bound, Career Exploration Tour (35 students and 5 adults) (March 15)
- Montessori Middle School Lab Tour (30 students and 3 adults) (May 9)
- Hermosa Heights Elementary School (37 students and 14 adults)

**2016:**

- Canutillo Elementary (80 students) (March 31)
- Deming School (60 students) (June 3)

**2015:**

- Anthony Elementary School (60 students) (Dec 11)
- Southern New Mexico State Fair (Sept 30- Oct 2)
- Mission Achievement and Success Charter School (40 students) (June 2)
- Mesilla Park Head Start (35 people) (May 15)
- McArthur Elementary School (450 students) (May 11)
- Rio Grande Elementary School (80 students) (April 23)
- Booker T. Washington Elementary School (26 people) (April 22)

**5. SERVICE**

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Nation (nationwide)

- Environmental Protection Agency (EPA) Special Government Employee, National Ad hoc member of the FIFRA Scientific Advisory Panel (FIFRA-SAP) to review issues related to methods for efficacy testing of bed bug pesticide products.

Serving as judge, moderator and symposium organizer in scientific meetings

- Student competition judging and moderator in the International Congress of Entomology, Orlando, FL. Oct 25-30, 2016
- Member of organization committee for the 2016 National Conference in Urban Entomology, Albuquerque, NM. May 2016.
- Member since 2015 of the Southwestern Branch Awards Committee
- Organizer of two blood feeding symposia at the ESA Southwestern Branch meetings

## *Curriculum Vitae, Alvaro Romero*

- Student competition judging in the Annual Meeting of the Entomological Society of America, Minnesota, MN. Nov 15-18, 2015
- Student competition judging in the Annual Meeting of the Entomological Society of America, Portland, OR. Nov 16-19, 2014
- Moderator of Medical, Urban and Veterinary 10-min session, Entomological Society of America Annual Meeting in Austin, Texas, November 10-13, 2013.
- Organizer of a bed bug symposium at the 2012 ESA Annual meeting, Knoxville, TN.

### Journal editorial activities, grant and manuscript reviewer

- Editorial Review Board Member, Journal of Integrated Pest Management, Annapolis, MD (January 1, 2014 - Present).
- Reviewer of Grant Proposal, -OARDC Research Enhancement Competitive Grants Program, Wooster, OH, USA. (November 12, 2014 - December 19, 2014).
- Reviewer of manuscripts (25) for the following journals: Insects, Journal of Economic Entomology, Journal of Medical and Veterinary Entomology, Journal of Medical Entomology, Journal of Experimental Biology, and PLoS ONE.

### **Memberships in Professional Societies**

Pi Chi Omega since 2008

Entomological Society of America – since 2003