

Ricardo J. Vazquez  
**Curriculum Vitae**  
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**EDUCATION**

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- August 2004-Present.** University of Florida Gainesville, FL
- Currently pursuing a Doctor of Philosophy degree in Entomology. Specialization in medical and veterinary entomology. Graduate Advisor: Dr. Philip G. Koehler.
- August 2004.** University of Florida Gainesville, FL
- Master of Science degree in Entomology. Specialization in biological control. Graduate Advisor: Dr. Sanford D. Porter.
- December 2001.** University of Florida Gainesville, FL
- Bachelor of Science in Entomology. Specialization in Urban Pest Management. Undergraduate Advisor: Dr. Philip G. Koehler.
- April 1996.** St. Johns River Community College Palatka, FL
- Associate of Arts, graduated Cum Laude.

**EXPERIENCE**

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**December 2004-Present.** Commissioned Officer, United States Army Reserves

*Medical Entomologist/Medical Services Corps*

- Commander 1437th Medical Detachment in Gainesville, FL.
- Plan, control, and monitor disease control programs that can affect health and morale of soldiers

**August 2004-Present.** Entomology and Nematology Department, University of Florida, Gainesville, FL

*Graduate Research Assistant/Teaching Assistant*

- Rearing and behavior studies of *Paratrechina pubens* (Caribbean Crazy Ants) and *Pheidole megacephala* (Big Headed Ants).
- Additional Research duties of rearing and maintaining 12 species of pest ants.
- Assist with laboratory portion of ENY4660C/6665C Medical and Veterinary Entomology course. Provide course essay questions and evaluate student responses on a weekly basis.
- Assists with ENY3225C/5226C Principles of Urban Pest Management, grading course exams and providing laboratory assignments.

**August 2002-August 2004.** USDA-Center for Medical, Agricultural, and Veterinary Entomology

Gainesville, FL

*Graduate Research Assistant*

- Host specificity trials of *Pseudacteon curvatus* (Diptera: Phoridae) on *Solenopsis* (Hymenoptera: Formicidae) ants
- Additional trials to examine potential of *Pseudacteon* flies to be an effective classical biological control agent of imported fire ants in the United States
- Field releases of *Pseudacteon curvatus* flies for biological control of red imported fire ants.
- Post-release evaluation of field established *Pseudacteon curvatus*.
- Other duties including morphological identification of insects collected from field sites
- Contact: Sanford Porter (352) 374-5914

**August 2002-December 2003.** Office of Academic Technology, University of Florida, Gainesville, FL

*Teaching Assistant/Tutor*

- Responsibilities included assisting student athletes with course material and preparation for required examinations (ENY 2040, The Insects)
- Other responsibilities included attending weekly meetings with academic advisors on progress of students
- Contact: Winnie Cooke (352) 392-2010

**February 2002-August 2002.** USDA- Center for Medical, Agricultural, and Veterinary Entomology

Gainesville, FL

*Biological Science Technician*

- Collecting ant colonies that are used for research projects
- Morphological identification of insects that are collected from field sites
- Identification of ants to species level
- Technical support with biodiversity research projects

**May 2001-December 2001.** Urban Entomology Lab, UF

Gainesville, FL

*Lab Assistant*

- Termite/ant rearing and harvesting
- Technical support with research projects

**June 2000-April 2001.** NFRMC Gainesville, FL

*Emergency Room Patient Care Technician*

- Performed EKG's, CPR, acquisition of vital signs, basic life support, and trauma skills
- Medical exam entries into hospital computers

**May 1998 – May 1999.** College of Pharmacy, UF Gainesville, FL

*Student Assistant for Dean's Office*

- Entered data using Excel computer software
- Office tasks such as copying, filing, and typing
- Courier and driver

**December 1996 – July 1997.** HSC Institutional Review Board, Shands Gainesville, FL

*Student Assistant*

- Assisted in review of protocols dealing with human subjects in research projects
- Office tasks such as copying, filing, faxing, and delivering protocols

**January 1996 – April 1996.** Sneakers Sportsgrille Jacksonville, FL

*Waiter*

- Promoted to headwaiter in order to train new employees
- Teamwork in food service environment
- Assisted co-workers in delivering food and drink orders

**April 1995 – August 1996.** Scarlet O'Haras St. Augustine, FL

*Cook*

- Customer service
- Inventory of maintenance, and foodservice

**January 1995 – April 1995.** Alfonso's Restaurant St. Augustine, FL

*Cook*

- Customer service
- Food service and quality control

**February 1994 – January 1995.** S & K Menswear St. Augustine, FL

*Assistant Supervisor*

- Promoted from sales associate to assistant supervisor
- Responsible for staff management, training, and work schedules
- Also responsible for book keeping, bank deposits, product inventory, retail sales, clientele interactions, and floor displays

**December 1993 – February 1994.** John Henry Menswear  
*Sales Clerk*

St. Augustine, FL

- Customer service
- Retail sales, inventory management and floor displays
- Assisted manager in store opening/closing procedures

**October 1989 – August 1993.** Non – Commissioned Officer for the United States Marine Corps

*Communications Center Operator*

- National Defense
- Responsible for staff management, training, and work schedules
- Storage and delivery of confidential paperwork
- Computer and telecommunications operator

## CONVENTIONS

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- **May 2008.** Southeastern Pest Management Annual Conference, Gainesville, FL.
- **January 2008.** Florida Pest Management Association Annual Meeting, Orlando, FL.
- **December 2007.** Entomological Society of America National Meeting, San Diego, CA.
- **October 2007.** National Pest Management Association Annual Meeting, Orlando, FL.
- **December 2005.** Entomological Society of America National Meeting, Ft. Lauderdale, FL.
- **December 2005.** Florida Pest Management Association Bedbugs & Africanized Honey Bees Symposium, Kissimmee, FL.
- **July 2005.** Florida Entomological Society Annual Meeting, Ft. Myers, FL.
- **May 2005.** Southeastern Pest Management Annual Conference, Gainesville, FL.
- **October 2003.** Entomological Society of America National Meeting, Cincinnati, OH.
- **November 2002.** National Pest Management Association Annual Meeting, Orlando, FL.
- **September 2002.** Certified Pest Control Operator's of Florida Annual Convention, Ft. Lauderdale, FL.
- **May 2002.** Southeastern Pest Management Annual Conference, Gainesville, FL.
- **April 2002.** Certified Pest Control Operator's of Florida Annual Convention, Orlando, FL.

- **January 2002.** Certified Pest Control Operator's of Florida Termite Symposium, Tampa, FL.
- **August 2001.** Certified Pest Control Operator's of Florida Annual Convention, Orlando, FL.
- **June 2001.** Florida Pest Control Association's Annual Convention, Marco Island, FL.
- **May 2001.** Southeastern Pest Management Annual Conference, Gainesville, FL.

## **HONORS & AWARDS**

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- **2006-2007.** Pi Chi Omega Scholarship, National Honor Fraternity of the Pest Control Industry.
- **2005.** Florida Entomological Society Academic Scholarship, Annual FES Meeting.
- **2005.** Florida Entomological Society Mini-Grant, Annual FES Meeting.
- **2005.** Florida Entomological Society Travel Grant, Annual FES Meeting.
- **2005-2006.** Pi Chi Omega Scholarship, National Honor Fraternity of the Pest Control Industry.
- **2005.** Graduate Research Assistantship, Entomology and Nematology department.
- **2004.** Graduate Research Assistantship, Entomology and Nematology department.
- **2004.** On-the-spot cash award, performance award given by Dr. Sanford D. Porter.
- **2004.** Florida Entomological Society Travel Grant.
- **2004.** Gamma Sigma Delta, Honor Society of the College of Agriculture and Life Sciences, University of Florida (GPA 3.75).
- **2004.** Steinmetz Tuition Scholarship, Entomology and Nematology Department.
- **2003.** Graduate Student Government Travel Grant.
- **2003.** Institute of Food and Agricultural Sciences Travel Grant.
- **2003.** Entomology and Nematology Department Travel Grant.
- **2003.** On-the-spot cash award, performance award given by Dr. Sanford Porter.
- **2002-2003.** Teaching Assistantship, Office of Academic Technology, University of Florida.
- **2002.** On-the-spot cash award, performance award given by Dr. Sanford Porter.
- **2001.** Leland A. Davis Urban Entomology Scholarship.
- **2001.** Urban Entomological Society Scholarship.
- **2000.** Dean's List at Santa Fe Community College.
- **1998.** Eta Sigma Phi, classics honorary society in Latin.
- **1996.** Phi Theta Kappa, honorary scholastic order of St. Johns River Community College.

- **1993-1996.** President's List at St. Johns River Community College (GPA 3.7 & higher).
- **1993-1996.** Dean's List at St. Johns River Community College (GPA 3.4 – 3.69).
- **1995.** National Dean's List Publication – College Level.

## ACTIVITIES

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- **August 2007-Current.** Treasurer of the Urban Entomological Society.
- **May 2002 – May 2003.** President of the Urban Entomological Society.
- **January 2002 – May 2002.** President of the Urban Entomological Society.
- **May 2001 – December 2001.** Vice President of the Urban Entomological Society.
- **May 2000 – May 2001.** Historian for the Urban Entomological Society.
- **January 1998 – August 2000.** Bike team assistant shift leader for the Alachua County Fire Rescue Reserves.
- **August 1997 – April 1999.** Publicity Director for Pre-Med AMSA at the University of Florida.
- **May 1995 – April 1996.** President of Phi Theta Kappa, honorary scholastic order of St. Johns River Community College.
- **January 1995 – May 1995.** Secretary for Phi Theta Kappa, honorary scholastic order of St. Johns River Community College.

## MEMBERSHIPS

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- Entomological Society of America.
- Florida Entomological Society.
- Pi Chi Omega.
- Gamma Sigma Delta
- The Entomology and Nematology Student Organization.
- Urban Entomological Society.
  
- Blue Chips and Salsa Investment Club.

## PRESENTATIONS & PUBLICATIONS

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**Vazquez, R. J. May 2008.** Talk: Foraging Behavior and Identification of 12 Florida Pest Ants. Southeastern Pest Management Conference Annual Meeting, Gainesville, FL. Twentyfive minutes.

**Vazquez, R. J. May 2008.** Talk: Army Medical Entomology. Southeastern Pest Management Conference Annual Meeting, Gainesville, FL. Fifteen minutes.

**Vazquez, R. J. March 2008.** Talk: Pest Ants and How to Identify them. Clay County Pest Control Training and CEU meeting, Green Cove Springs, FL. Thirty minutes.

**Vazquez, R. J. January 2008.** Talk: Pest Ant Identification and Biology. Florida Pest Control CEU meeting, Gainesville, FL. Fifty minutes.

**Vazquez, R. J., S. D. Porter, and J. A. Briano. 2006.** Field release and establishment of the decapitating fly *Pseudacteon curvatus* on red imported fire ants in Florida. *BioControl* 51 (2): 207-216.

**Vazquez, R. J. and S. D. Porter. 2005.** Re-confirming host specificity of the fire ant decapitating fly *Pseudacteon curvatus* after field release in Florida. *Florida Entomologist* 88 (1): 107-110.

**Vazquez, R. J., S. D. Porter, and J. A. Briano. 2004.** Host specificity of a biotype of the fire ant decapitating fly *Pseudacteon curvatus* (Diptera: Phoridae) from Northern Argentina. *Environmental Entomology* 33 (5): 1436-1441.

**Vazquez, R. J. July 2005.** PhD Student Paper Competition (Talk): Potentiation of neonicotinoids with pyrethroids for improved house fly control. Florida Entomological Society Annual Meeting, Ft. Myers, Florida. Ten minutes.

**Vazquez, R. J. May 2005.** Talk: Special Force Treatments: Residual perimeter treatments for flying insects. Southeastern Pest Management Annual Conference, Gainesville, Florida. Twentyfive minutes.

**Vazquez, R. J. March 2005.** Talk: Evaluate residual activity of newer insecticides for house fly management. Armed Forces Pest Management Board Meeting, Gainesville, Florida. Five minutes.

**Vazquez, R.J. and S.D. Porter. October 2003.** Poster presentation on host specificity of a biotype of the fire ant decapitating fly *Pseudacteon curvatus* from Northern Argentina. Entomological Society of America Annual Meeting, Cincinnati, Ohio.

**Vazquez, R.J. & S.D. Porter. September 2003.** Talk: Host specificity of the decapitating fly *Pseudacteon curvatus* a biotype from Formosa, Argentina. Entomophagous Insects Group, USDA-ARS-CMAVE, Gainesville, Florida. Forty minutes.

## OUTREACH

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- **January 2008.** Newberry Elementary School Science Fair, Newberry, FL. 4 hours.
- **March 2003.** ENSO/UES booth at Kanapaha Spring Festival, Gainesville, FL.
- **October 2002.** College of Agriculture and Life Sciences Tail Gator event, Gainesville, FL.
- **April 2002.** College of Agriculture and Life Sciences student Bar-B-Que and Gator Encounter, Gainesville, FL.
- **March 2002.** ENSO/UES booth at Kanapaha Spring Festival, Gainesville, FL.

## RELEVANT SKILLS

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- **Field Experience.** Arthropod identification to familial level with some arthropods identified to species. Implementation of field arthropod sampling techniques. Collection of various field colonies of ants.
- **Insect Rearing.** Maintained populations of *Pseudacteon curvatus* (Diptera: Phoridae), *Solenopsis invicta* (Hymenoptera: Formicidae) along with 11 other species of Formicidae, and *Musca domestica* (Diptera: Muscidae).
- **Analytical Techniques.** Able to use Gas Chromatography/Mass Spectroscopy equipment.
- **Computer Proficiency.** Working knowledge of PC systems (Windows 95/98/ME/XP/Vista), Statistical programs (JMP, Minitab, SAS), Word processing (Word, WordPerfect), Spreadsheets (Excel), Graphing programs(Excel),Powerpoint.

Ricardo Vazquez

Current Research Summary

Bayer Environmental Science Young Scientist of the Year 2008

There are approximately 9,000 known species of ants in the world (Holldobler and Wilson 1990), of these about 150 invasive ant species have been introduced around the world through help of humans (McGlynn 1999). A large majority of introduced invasive ants will remain confined in human-modified habitats with some species referred to as tramp ants because of their reliance on human-mediated dispersal and close association with humans (Holldobler and Wilson 1990, Passera 1994). Invasive ants differ from other introduced ants in that invasive ants will penetrate the natural ecosystem where they drastically reduce native ant diversity and affect other organisms directly and indirectly (Holway et al. 2002, Moller 1996, Plentovich et al. 2008). In addition to being closely associated with human-modified habitats, tramp ants have these additional characteristics: they are unicolonial, polygynous and reproduce by budding (Holldobler and Wilson 1990).

In Florida, we have two very invasive tramp ant species emerging as a problem, the African big-headed ant (BHA), *Pheidole megacephala* (Fabricius), and the Caribbean crazy ant (CCA), *Paratrechina pubens* (Forel)(Deyrup 2003, Deyrup et al. 2000, Deyrup et al. 1989, Fabricius 1793, Ferster and Prusak 1994, Forel 1893, Frank and McCoy 1992, Klotz et al. 1995, Naves 1985, Smith 1933). The big-headed ant is well known in the Pacific as an indoor and outdoor pest (Hoffman and Parr 2008, Wetterer 2007, Wilson and Taylor 1967). *Pheidole megacephala* is an important agricultural pest on many crops, including pineapple, bananas, and coffee by enhancing populations of plant-feeding Hemiptera such as mealybugs and scale insects (Fowler et al. 1990, Reimer et al. 1990, Wetterer 2007). The big-headed ant is a big problem in buildings in South Africa and in Florida (Deyrup et al. 2000, McGlynn 1999, Prins et al. 1990). Invasive populations of *P. megacephala* form unicolonial supercolonies, i.e., multiple queen aggregations of interconnected nests which act as a single cooperative unit with a lack of intraspecific aggression (Hoffman et al. 1999, Jahn and Beardsley 1994, Lach 2003, Tsutsui et al. 2003, Wetterer 2007). It is believed that the lack of intraspecific aggression is important in attaining high population densities and ecological dominance (Wetterer 2007).

*Paratrechina pubens* was first described from the St. Vincent, Lesser Antilles (Forel 1893) and has spread to other West Indian Islands including Anguilla, Puerto Rico and the Virgin Islands (Frank and McCoy 1992, Miller 1994, Trager 1984, Warner and Scheffrahn 2003). There is very little known about the life cycle of *P. pubens* (Warner and Scheffrahn 2003). However, from field collections and observations it has been determined that *P. pubens* have polygynous colonies (Trager 1984, Warner and Scheffrahn 2003). *Paratrechina pubens* specimens were first collected in South Florida in the early 1950s (Warner and Scheffrahn 2003) but first publication was by Trager (1984). From 1989 to 2000, *P. pubens* was identified as only being present in Dade County, Florida with no indication of spreading (Deyrup et al. 2000, Deyrup et al. 1989). By 2003, *P. pubens* was introduced into Sarasota and Palm Beach County (Deyrup 2003). To date, *P. pubens* has also been found in the following cities in Florida: Jacksonville, Gainesville, Port St. Lucie and Fort Lauderdale (Phil Koehler 2008, personal communication).

There is very little known about the biology of the big-headed ant and the Caribbean crazy ant in relation to their nesting habits and foraging behavior and how these characteristics influence the development of supercolonies. In Malaysia, A few foraging studies with the big-headed ants were conducted on food preferences of the big-headed ant against other tramp ants (Lee 2002, Loke and Lee 2004). By exploring the mechanisms in which the big-headed ant and the Caribbean crazy ant develop supercolonies, we will have a further understanding how these mechanisms contribute to the high population densities which elevates these ants to pest status. Information on the foraging behavior is essential for the development of efficient baits and baiting strategies for control of these invasive ants. Ant nesting and foraging behaviors are important factors in determining how invasive ants become pestiferous. These behaviors are also extremely important in determining the exposure of the ants to pesticides applied as barrier treatments which are commonly used to control the big-headed, Caribbean crazy, Argentine and other ants (Horwood 1988, Reimer et al. 1994, Silverman and Brightwell 2008, Stanley and Robinson 2007). Understanding the behavioral factors that may influence susceptibility or tolerance to specific pesticides will help the identification of control methods most adequate for each pest ant species.

## References

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- Deyrup, M., L. Davis and S. Cover. 2000. Exotic Ants of Florida. *Transactions of the American Entomological Society*, 126: 293-326.
- Deyrup, M., C. Johnson, G. C. Wheeler and J. Wheeler. 1989. A preliminary list of the ants of Florida. *Florida Entomologist* 72: 91-101.
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- Forel, A. 1893. Formicides de l'Antille St. Vincent, recoltees par Mons. H. H. Smith. *Transactions of the Entomological Society of London* 1893: 333-418.
- Fowler, H. G., J. V. Bernardi, J. C. Delabie, L. C. Forti, and V. Pereira-da-Silva. 1990. Major ant problems of South America. Pp. 3-14. In: R. K. Vander Meer, K. Jaffe and A. Cedeno [eds.]. *Applied Myrmecology: a world perspective.* Westview Press, Boulder, CO.

- Frank, J. H. and E. D. McCoy. 1992. Introduction to the behavioral ecology of immigration. The immigration of insects to Florida, with a tabulation of records published since 1970. *Florida Entomologist* 75: 1-28.
- Hoffman, B. D. and C. L. Parr. 2008. An invasion revisited: the African big-headed ant (*Pheidole megacephala*) in northern Australia. *Biological Invasions* (In Press).
- Hoffman, B. D., A. N. Andersen and G. J. E. Hill. 1999. Impact of an introduced ant on native rain forest invertebrates: *Pheidole megacephala* in monsoonal Australia. *Oecologia* 120: 595-604.
- Holldobler, B. D. and E. O. Wilson. 1990. *The Ants*. Belknap Press, Cambridge, Massachusetts.
- Holway, D. A., L. Lach, A. Suarez, N. Tsutsui and T. Case. 2002. The causes and consequences of ant invasions. *Annual Review of Ecological Systems* 33: 181-233.
- Horwood, M. A. 1988. Control of *Pheidole megacephala* (F.) (Hymenoptera: Formicidae) using methoprene baits. *Journal of Australian Entomological Society* 27: 257-258.
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- Klotz, J.H., J.R. Mangold, K. M. Vail, L. Davis and R. S. Patterson. 1995. A Survey of the Urban Pest Ants (Hymenoptera: Formicidae) of Peninsular Florida. *Florida Entomologist* 78: 109-118.
- Lach, L. 2003. Invasive ants: unwanted partners in ant-plant interactions? *Annals of the Missouri Botanical Garden* 90: 91-108.
- Lee, C-Y. 2002. Tropical household ants: pest status, species diversity, foraging behavior, and baiting studies. In: proceedings of the 4<sup>th</sup> international conference on urban pests. S.C. Jones, J. Zhai and W. H. Robinson [eds.].
- Loke, P-Y. and C-Y. Lee. 2004. Foraging behavior of field populations of the big-headed ant, *Pheidole megacephala* (Hymenoptera: Formicidae). *Sociobiology* 43: 211-219.
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- Wilson, E. O. and R. W. Taylor. 1967. Ants of Polynesia. *Pacific Insects Monograph* 14: 1-109.