

SABRINA AMADOR

Ph D Ecology, Evolution and Behavior



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■ PROFILE

A creative and independent animal behavior biologist with an interest in ecology and evolution who has acquired knowledge and experience in Costa Rica, USA and Panamá. Through my perseverance, curiosity and collaborations, I aim at understanding animal behavior evolution and mechanisms. I am strongly committed to education with a vast experience in field courses, I encourage and practice original field-inspired research, and I hope my enthusiasm will be transmitted to the people I work with.

■ EDUCATION

Ph. D. Ecology Evolution and Behavior

University of Texas at Austin

Dissertation: *Brain and behavioral traits of acacia ants*

Advisor: *Dr. Ulrich Mueller*

2009-2014

M. Sc. Biology with honors

Universidad de Costa Rica

Dissertation: *Division of labor and pruning behavior of acacia ants*

Advisor: *Dr. William Eberhard*

2005-2008

B. S. Biology with honors

Universidad de Costa Rica

2001-2004

SKILLS

Creativity

Leadership

Team player

Self-motivated

Problem-solving

Data analysis

Grant Writing

Self-learner

Fully bilingual English-Spanish

ACHIEVEMENTS

George C. Eickwort Student
Research Award

■ PUBLICATIONS

1. Farji-Brener, A.G. & **Amador-Vargas, S.** 2018. Hierarchy of hypotheses or hierarchy of predictions? Clarifying key concepts in ecological research. In: J. M. Jeschke & T. Heger (eds.), *Invasion Biology: Hypotheses and Evidence* (pp.19 - 22). CABI, Boston, USA.
2. **Amador-Vargas, S.** & Mueller, U.G. 2017. Ability to re-orient is weakly correlated with central-place versus non-central-place foraging in acacia ants. *Behavioral Ecology and Sociobiology* 71: 43.

3. Farji-Brener, A. G., L. Elizalde, H. Fernández-Marín, **S. Amador-Vargas**. 2016. Social life and sanitary risks: Evolutionary and current ecological conditions determine waste management in leaf-cutting ants. *Proceedings of the Royal Society B* 283: 2016-2025.
4. **Amador-Vargas, S.**, W. Gronenberg, W. Wcislo, U. G. Mueller. 2015. Specialization and group size: brain and behavioural correlates of colony size in ants lacking morphological castes. *Proceedings of the Royal Society B*. 282: 2014-2502.
5. Kardish, M.R., Mueller, U.G., **Amador-Vargas, S.**, Dietrich, E.I., Ma, R., Barrett, B., Fang, C.-C., 2015. Blind trust in unblinded observation in Ecology, Evolution, and Behavior. *Frontiers in Ecology and Evolution* 3: 51.
6. Farji-Brener, A.G., **Amador-Vargas, S.**, 2014. Hierarchy of hypotheses or cascade of predictions? A comment on Heger et al. (2013). *AMBIO* 43, 1112–1114.
7. **Amador-Vargas, S.**, M. Dominguez, G. León, B. Maldonado, J. Murillo, and G. L. Vides. 2014. Leaf-folding response of a sensitive plant shows context-dependent behavioral plasticity. *Plant Ecology* 215: 1445–1454.
8. Farji-Brener, A., F. Chinchilla, M. N. Umaña, M. Ocasio-Torres, A. Chauta-Mellizo, D. Acosta-Rojas, S. Marinero, de Torres Curth M. & **S. Amador-Vargas**. 2014. Branching angles reflect a tradeoff between reducing trail maintenance costs or travel distances in leaf-cutting ants. *Ecology* 96:510-517.
9. **Amador-Vargas S.** 2012c. Run, robber, run: parasitic acacia ants use speed and evasion to steal food from ant-defended trees. *Phys. Ent.* 37: 323-329.
10. **Amador-Vargas S.** 2012b. Behavioral responses of acacia ants correlate with age and location on the host plant. *Insectes Sociaux*. 59: 341- 350.
11. **Amador-Vargas S.** 2012a. Plant killing by acacia ants (*Pseudomyrmex spinicola*) increases the density of host species seedlings in the dry forest of Costa Rica. *Psyche. Special Issue: Advances in Neotropical Myrmecology* 2012: 1-6.
12. **Amador-Vargas S.**, Martínez J.A, Giraldo-Beltrán P., González R.M., Rifkin S., Gamarra-Toledo V. 2011. Ant body posture: gaster curling increases ant speed. *Ecological Entomology* 36: 663-666.
13. Farji-Brener A. G., **Amador-Vargas S.**, Chinchilla F., Escobar S., Cabrera S., Herrera M. I. & Sandoval C. 2010. Information transfer in head-on encounters between leaf-cutting ant workers: food, trail condition or orientation cues? *Animal Behaviour* 79: 343-349
14. Farji-Brener A. G., Chinchilla F. A, Magrach A., Romero V, Ríos M, Velilla M, Serrano JM & **Amador-Vargas S.** 2009. Slope orientation enhances the nurse effect of a paramo shrub, *Hypericum irazuense* in Costa Rica. *J. Trop. Ecol.* 25: 331-335.
15. **Amador-Vargas, S.** 2008. Spartan defense in the Thermopylae pass: Strategic defense by aggregations of *Pseudomyrmex spinicola* (Hymenoptera, Formicidae) on the trunk of *Acacia collinsii* (Mimosaceae). *Insectes Sociaux* 55: 241-245.

■ RESEARCH AND TEACHING APPOINTMENTS

Smithsonian Tropical Research Institute

- Panamá
June 2018- to date
- Staff Scientist, Animal Behavior and Evolution

Universidad Estatal a Distancia

- Costa Rica
2004 - 2008 & 2016 -2018
- Lecturer of General Biology, Botany, Zoology, Tropical Biodiversity, Flora & Fauna

Universidad Técnica Nacional

- Costa Rica
2017 - 2018
- Lecturer of General Biology

Smithsonian Tropical Research Institute

- Panamá
2015-2016
- Postdoctoral Researcher
 - Coordinator of the course: Principles of Tropical Field Biology (2015, 2016, 2017)

Duke University & Organization for Tropical Studies

- Costa Rica
2016, 2017
- 2017 - Invited professor for the course “Tropical Diseases, environmental change and Human Health
 - 2016 - Coordinator for the undergraduate summer field course: Tropical Ecology
 - 2015 - Co-coordinator for the undergraduate summer field course: Tropical Ecology

Organization for Tropical Studies

- Costa Rica
2007, 2017
- 2010 - 2016 - Invited professor for the course “Tropical Ecology and Conservation”
 - 2014 - Co-coordinator for the course “Tropical Ecology and Conservation”
 - 2007 - 2009 Teaching assistant for the course “Tropical Ecology and Conservation”

University of Texas at Austin

- United States of America
2010-2014
- Teaching assistant for the courses “Ecology, Evolution and Society” and “Introductory Biology”

Universidad de Costa Rica

- Costa Rica
2004 - 2006
- Teaching assistant for Evolution, Zoology, Biology and Botany.

■ GRANTS and FUNDING

2015 Post-Doctoral Fellowship. *Smithsonian Institution, USA.*

To develop the project “Democracy Dilemma: Is it advantageous to have several individuals deciding about a solitary task?”

2013 & 2010 Continuing Fellowship of *Graduate School of the University of Texas at Austin* (tuition and stipend). One of ten awarded campus-wide from over five hundred applicants.

2012 Doctoral Dissertation Improvement Grant. *National Science Foundation*

2012 EEB - Doctoral Dissertation Improvement Grant. *University of Texas at Austin.*

2011 Short Term Fellowship. *Smithsonian Tropical Research Institute.*

2010 Startup Grant. *Integrative Biology, University of Texas at Austin.*

2009 Recruitment Fellowship (tuition and stipend). *Graduate School, University of Texas at Austin.*

2009 Short Term Fellowship. *Smithsonian Tropical Research Institute.* Project: “Behavioral specialization of *Pseudomyrmex spinicola* ants”.

2006 & 2007. Research Fellowship. *Organization for Tropical Studies.* Granted to develop my Master’s thesis on acacia ants in Palo Verde Biological Station.

2006 Post-course Fellowship. *Organization for Tropical Studies.*

Project: “Strategic defense by aggregations of acacia ants on the trunk of the host trees”.

2005 Research Fund. *Consejo Nacional de Investigación en Ciencia y Tecnología* (CONICIT). Costa Rica.

To partially support the OTS field course fee.

■ HONORS and AWARDS

2015 George C. Eickwort Student Research Award.

Given by the International Union for the Study of Social Insects, North American Section to an outstanding student for distinguished record of research in the area of social insect biology.

2003 & 2004 Academic Excellence Award. *University of Costa Rica.*

Granted to the best undergraduate (excellent GPA) pursuing a B.S. in Biology.

■ CONFERENCES AND COURSES

- *Smithsonian Tropical Research Institute*. May 2015, February 2016. Oral presentations (Tupper talk).
- *Sociedad Colombiana de Entomología (SOCOLEN)*. Cali, Colombia, July 2014. Invited speaker.
- *Entomological Society of America Meeting*. Austin, Texas, November 2013. Oral presentation.
- *South American section of the International Union for the Study of Social Insects (IUSSI)*. Cali, Colombia, August 2013. Oral presentation.
- *Association for Tropical Biology and Conservation Meeting*. San Jose, Costa Rica, June 2013. Oral presentation.
- *Symposium of Brain, Behavior and Evolution*. Austin, Texas. February, 2013. Invited speaker.
- *XX Simposio de Mirmecologia/ I Encuentro de Mirmecologistas de Las Américas (Mymecology Symposium)*. Petrópolis, Brazil. October, 2011. Invited speaker.
- *OTS Field course: Tropical Ecology and Conservation*. Costa Rica, January - February 2006.

TECHNICAL SKILLS

Statistical software (JMP, Statistica, SPSS)
R programming
Digital image analysis
3D image reconstruction
Microscopy
Video editing and analysis (VLC, iMovie, JWatcher, Tracker)

LANGUAGES

English:
C1 British certification
TOEFL IBT: 110/120

Spanish:
Native

JOURNAL REFEREE

Behavioral Ecology and Sociobiology
American Naturalist
Insectes Sociaux
Physiological Entomology
Journal of Insect Behavior
Oecologia
Biotropica