

Page web STRI—

En Amarillo – nota para OIT

En verde- Documentos para subir a la plataforma

Las pestañas que llevará el menú principal deben llamarse de la siguiente manera: HOME, JOIN OUR LAB, PEOPLE, PUBLICATIONS, NEWS & OUTREACH. Las cuales preferimos si pueden aparecer como menú fijo (que no se tenga que desplegar para encontrarse). Abajo aparecen los subtítulos y contenido que llevará cada pestaña.

Estructura:

1. Homepage: STRI LAB (Laboratory for Animal Behavior)
 - a. Join STRI-LAB (*this page will include the Statement under Fellowships, internships, and training, the "Tips for a successful proposal" and links to the three research groups*)
 - b. Research Equipment (*statement and list*)
 - c. Research groups
 - i. Link to Bat lab (PI: Rachel)
 - ii. Link to Evolution, Behavior and Neurobiology lab (PI: Wcislo)
 - iii. Link to Tropical Behavioral Ecology Lab (PI: Sabrina Amador)
 1. Welcome to the Tropical Behavioral Ecology Lab - HOME
 2. Join TBE lab - JOIN OUR LAB
 3. Past & present members - PEOPLE
 4. TBE lab Publications - PUBLICATIONS
 5. Our lab in the media - NEWS
 6. Outreach (scientific material for general public) - OUTREACH

Welcome to the Tropical Behavioral Ecology Lab

Research projects in our lab combine behavioral, ecological, morphological and evolutionary approaches to understand animal behavior. Our research focuses mainly on the obligate mutualisms of acacia ants with the swollen-thorn acacias, and we aim to learn how the evolution of the association with the plant involves behavioral (individual or social) or morphological modifications. We are therefore also interested in learning about the organisms that can live with the defending acacia ants. Although we are fascinated by ants living on plants, we encourage people to pursue their own research question and we welcome studies in any kind of arthropods.

Deben aparecer en la página de HOME, abajo del párrafo, como links, que lleven a las siguientes secciones.

- [Join TBE lab](#)
- [Past & present members](#)
- [TBE lab Publications](#)
- [Our lab in the media](#)
- [Outreach \(scientific material for general public\)](#)

Join TBE lab

Want to join our lab? Please read this information [{{Link to STRI-Lab Join our lab}}](#)

Or please email amadors@si.edu

Past & present members

Permanent Staff

Sabrina Amador Vargas [{{Link to SA STRI profile}}](#)

ORCID: <https://orcid.org/0000-0001-8738-4876>

ResearchGate: <https://www.researchgate.net/profile/Sabrina-Amador-Vargas>

Email: amadors at si [dot] edu



Yorlenis Y. González

Research Technician

ORCID: <https://orcid.org/0000-0002-7622-0056>

Email: gonzalezzy [at] si.edu

Yorlenis has a Bachelor's Degree in Biology, with a specialty in Botany at the University of Panama. She has been working in the lab since 2019, where she assists in the organization, design, coordination and execution of research projects on the behavior of Neotropical arthropods. She conducts field and laboratory observations and watches over equipment, materials, and everything related to laboratory logistics. She is interested in biodiversity, ecological associations and in learning new ways of doing science every day, in a practical way and that others can easily understand.



Current fellows

Fernando Soley– Postdoctoral Fellow

ORCID: <https://orcid.org/0000-0001-9849-6910>

Email: fgsoley [at] gmail.com

He is interested in the behavioral adaptations of arthropods and in how behavior affects evolution. He has explored these adaptations mainly through predator-prey interactions and foraging behavior. He has a general interest in insects and spiders, and his past research has focused on spider-eating assassin bugs. He is currently doing a comparative analysis of the behavior of assassin bugs in Costa Rica and Australia. Finally, he is also interested in the cognitive and sensory capacities of invertebrates and in how these relate to their ecological challenges.



Recent Publications:

Soley, F.G., 2021. Still no evidence for transgenerational inheritance or absence of epigenetic reprogramming in the honey bee. *Proceedings of the National Academy of Sciences*, 118(28). DOI: [10.1073/pnas.2108608118](https://doi.org/10.1073/pnas.2108608118)

Soley, F.G., & Perfecto, I. 2021. A way forward for biodiversity conservation: high-quality landscapes. *Trends in Ecology & Evolution*. DOI: [10.1016/j.tree.2021.04.012](https://doi.org/10.1016/j.tree.2021.04.012)

Soley, F.G., Rodríguez, R. L., Höbel, G., & Eberhard, W. G. 2021. Insightful behaviour in arthropods?. *Behaviour*, 1(aop), 1-13. DOI: [10.1163/1568539X-bja10077](https://doi.org/10.1163/1568539X-bja10077)

Chacón, I. S., & **Soley, F.G.** 2020. Research for decision-making in marine protected areas such as Isla del Coco, Costa Rica. *Revista de Biología Tropical*, 68, 1-17.
DOI: [10.15517/rbt.v68is1.41126](https://doi.org/10.15517/rbt.v68is1.41126)

Soley, F.G. 2019. A possible role of decorations in spiderwebs as protection devices that distract predators. *Revista de Biología Tropical*, 67(2), 164-173.
DOI: [10.15517/rbt.v67i2supl.37227](https://doi.org/10.15517/rbt.v67i2supl.37227)

[More Publications from our lab members](#) **{{Link to EBA lab Publications}}**

Rosannette Quesada– Postdoctoral fellow

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Research Gate: <https://www.researchgate.net/profile/Rosannette-Quesada-Hidalgo>

Email: quesadar [at] si.edu, rquesada [at] alumni.usp.br

Rosannette did her undergrad and master studies at the University of Costa Rica, working with behavioral plasticity in orb weaver spiderlings. Then, she did her PhD on behavioral ecology at the Instituto de Biociências of the Universidade de São Paulo, researching sexual selection and parental care using Opiliones. She is now a short-term postdoctoral Fellowship with a deep interest in animal behavior and science communication. She is currently working in our lab on a review paper that aims to investigate what proportion of ant studies have been about behavior of Neotropical ants in the past five years? She is also developing some outreach/educational material regarding the behavior of Neotropical ants and in the past years she has developed an

outreach project regarding daddy-long legs. You can find more about that project at:
https://www.instagram.com/opilio_tracker/?hl=es



Recent Publications:

Quesada-Hidalgo, R., Eberhard, W. G., & Barrantes, G. 2021. Complex behavioral plasticity is not reduced in spiderlings with miniature brains. *Plos one*, 16 (6), e0251919.
DOI: [10.1371/journal.pone.0251919](https://doi.org/10.1371/journal.pone.0251919)

Quesada-Hidalgo, R., Solano-Brenes, D., Requena, G. S., & Machado, G. 2019. The good fathers: efficiency of male care and the protective role of foster parents in a Neotropical arachnid. *Animal Behaviour*, 150, 147-155.
DOI: [10.1016/j.anbehav.2019.02.007](https://doi.org/10.1016/j.anbehav.2019.02.007)

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Dumas Gálvez– Postdoctoral fellow

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Email: galvezd [at] si.edu, galvezd [at] gmail.com

Dumas Gálvez is a postdoctoral fellow at the Smithsonian Tropical Research Institute. He graduated from a Master in Ecology and Evolution from the University of Groningen (The Netherlands) in 2009. Later, he obtained a PhD focused in Ecology and Evolution in 2014 from the University of Lausanne in Switzerland, where he worked on pathogen

– ant interactions. He is currently working on a project aimed at discovering the effects of forest perturbation on the immune competence of the neotropical ant *Ectatomma ruidum*. Other lines of interest carried out by he and the students under his supervision include conservation, predator - prey interactions, ecology and evolution of arachnids, covering aspects of foraging strategies, defense against predators and pathogens, competition, among others. Moreover, they work with other arthropod groups, mostly aimed at experimental biology and hypothesis testing. He is also interested in the coloration of invertebrates in general, functionality and mechanism of color production. Besides, a current group member works on predator-prey interactions, using agoutis and ocelots as a system. Finally, his previous research experiences also covered subjects in ornithology, herpetology and animal-plant interactions.



Recent Publications:

Gálvez, D. 2021. Three-year monitoring of roadkill trend in a road adjacent to a national park in Panama Biotropica. DOI: [10.1111/btp.12995](https://doi.org/10.1111/btp.12995)

Gálvez D, Nieto C & Samaniego, P. 2020. Test of the prey-attraction hypothesis for the scorpion fluorescence. Neotropical Biodiversity 6:1, 172-177.
DOI: [10.1080/23766808.2020.1844991](https://doi.org/10.1080/23766808.2020.1844991)

Gálvez D, Añino Y, Vega C, Bonilla E. 2020. Immune priming against bacteria in spiders and scorpions? PeerJ 8:e9285. DOI: [10.7717/peerj.9285](https://doi.org/10.7717/peerj.9285)

Vega-Hildago, A, Añino, Y., Krichilsky, E., Smith, A.R., Santos-Murgas, A & **D. Gálvez**. 2020. Decline of native bees (Apidae: Euglossa) in a tropical forest of Panama. *Apidologie* doi.org/10.1007/s13592-020-00781-2. DOI: [10.1007/s13592-020-00781-2](https://doi.org/10.1007/s13592-020-00781-2)

Gálvez, D., Garrido, M., Gil, F. & Fernández-Marín, H. 2020. Benefits of living underground: the case of parasite release in the antlion (*Myrmeleon timidus*). *Entomologia Experimentalis et Applicata* 168: 280-285. DOI: [10.1111/eea.12895](https://doi.org/10.1111/eea.12895)

Bonadies, E., Wcislo, W.T., **Gálvez, D.**, Hughes, W.H.O., Fernández-Marín, H. 2019. Hygiene Defense Behaviors Used by a Fungus-Growing Ant Depend on the Fungal Pathogen Stages. *Insects* 2019, 10(5), 130. DOI: [10.3390/insects10050130](https://doi.org/10.3390/insects10050130)

Añino, Y., Parra-H, A and **Gálvez, D.** Sociobiology. 2019. Are Orchid Bees (Apidae: Euglossini) Good Indicators of the State of Conservation of Neotropical Forests? *Sociobiology* 66(1): 194-197. DOI: [10.13102/sociobiology.v66i1.3679](https://doi.org/10.13102/sociobiology.v66i1.3679)

Gálvez, D. 2019. Predation of a Rock pigeon by a Yellow-headed caracara in a suburban area in Panama. *Journal of Raptor Research*. 1: 109-110. DOI: [10.3356/JRR-18-11](https://doi.org/10.3356/JRR-18-11)

[More Publications from our lab members](#) **{{Link to EBA lab Publications}}**

Current Interns

Katherine Porras – Universidad Nacional de Costa Rica. Intern March - November 2021

Eleodoro Bonilla – Universidad de Panamá. Intern February 2019 - March 2022

Brenda Virola – Universidad de Panamá. Intern May 2021 - May 2022

Carlos Vega – Universidad de Panamá. Intern September 2021 – February 2022

Vivian Orribarra – Universidad Autónoma de Chiriquí. STRI Intern February - April 2019 & August - October 2021

Former lab members

Jorge de la O Castro – Universidad Nacional de Costa Rica. Intern April 2021.

Finote Gijsman – University of Northwestern, Evanston, Illinois. Intern September - November 2019.

Maikol Guevara – Universidad de Panamá. Intern August - December 2019

Aaron de Veres – University of Edinburgh. Short-term fellow. June - August 2019

Paula Palacios – Universidad Del Valle (Colombia). Intern April - June 2019

EBA lab Publications

Below a list of our publications organized by topic. Quisiéramos que a cada sección se le pudiera dar click y que despliegue las publicaciones abajo...

I. Acacia-ant interaction

- a. Acacia ants behavior
- b. Ant-plant interaction
- c. Other organisms associated with acacia ants

II. Plant responses (behavior?) & Ecology

III. Arthropod behavior

IV. Scientific endeavour

V. Vertebrate behavioral & Ecology

VI. Genetic in Arthropod

I. Acacia-ant interaction

a. Acacia ants behavior:

Amador-Vargas, S. 2012b. Behavioral responses of acacia ants correlate with age and location on the host plant. *Insectes Sociaux*. 59: 341- 350.

DOI: [10.1007/s00040-012-0226-x](https://doi.org/10.1007/s00040-012-0226-x)

Amador-Vargas, S. 2019. Plant killing by Neotropical acacia ants: ecology, decision-making and head morphology. *Biotropica* 51: 692–699.

DOI: [10.1111/btp.12695](https://doi.org/10.1111/btp.12695)

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. DOI: [10.1007/s00265-016-2262-4](https://doi.org/10.1007/s00265-016-2262-4)

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.

DOI: [10.1098/rspb.2014.2502](https://doi.org/10.1098/rspb.2014.2502)

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.

DOI: [10.1007/s00040-008-1000-y](https://doi.org/10.1007/s00040-008-1000-y)

b. Ant-plant interaction

Gijsman, F., González, Y., Guevara, M., & **Amador-Vargas, S.** 2021. Short-term plasticity and variation in acacia ant-rewards under different conditions of ant occupancy and herbivory. *The Science of Nature*, 108(4), 1-12. DOI: [10.1007/s00114-021-01738-w](https://doi.org/10.1007/s00114-021-01738-w)

Amador-Vargas, S., Dyer, J., Arnold, N., Cavanaugh, L., & Sánchez-Brenes, E. 2020. Acacia trees with parasitic ants have fewer and less spacious spines than trees with mutualistic ants. *The Science of Nature*, 107(1), 1-5. DOI: [10.1007/s00114-019-1647-4](https://doi.org/10.1007/s00114-019-1647-4)

Amador-Vargas, S. 2012a. Plant killing by mutualistic ants increases the density of host species seedlings in the dry forest of Costa Rica. *Psyche. Special Issue: Advances in Neotropical Myrmecology* 2012: 1-6. DOI: [10.1155/2012/491592](https://doi.org/10.1155/2012/491592)

c. Other organisms associated with acacia ants

Amador-Vargas, S., Orribarra, S.V., Portugal-Loayza, A. & Fernández-Marín, H. 2021. Association patterns of acacia plants with three ant species and related organisms in a dry forest of Panama. *Biotropica* 53 (2): 560-566. DOI: [10.1111/btp.12899](https://doi.org/10.1111/btp.12899)

Coronado, J., Solís del Valle, M., **Amador-Vargas, S.** 2020. True bugs living on ant-defended acacias: evasion strategies and ant species preferences, in Costa Rica and Panama. *Revista de Biología Tropical* 68: 415-425.

DOI: [10.15517/rbt.v68i2.38505](https://doi.org/10.15517/rbt.v68i2.38505)

Barrantes, G, Valverde-Hernández, JC., Vargas-Rodríguez, A, **Amador-Vargas, S.** 2018. Another one breaking through an ant plant mutualism. *Boletín de la Sociedad Zoológica del Uruguay* 27: 11-13. DOI: [10.26462/27.1.4](https://doi.org/10.26462/27.1.4)

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.

DOI: [10.1111/j.1365-3032.2012.00844.x](https://doi.org/10.1111/j.1365-3032.2012.00844.x)

II. Plant responses (behavior?) & Ecology

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.

DOI: [10.1007/s11258-014-0401-4](https://doi.org/10.1007/s11258-014-0401-4)

Farji-Brener, A. G., Chinchilla, F. A, Magrach, A., Romero, V., Ríos, M., Velilla, M., Serrano, J.M. & **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.

DOI: [10.1017/s0266467409005999](https://doi.org/10.1017/s0266467409005999)

III. Arthropod behavior & Ecology

Farji-Brener, A.G. & **Amador-Vargas, S.** 2020. Plasticity in extended phenotypes: how the antlion *Myrmeleon crudelis* adjusts the pit traps depending on biotic and abiotic conditions. *Israel Journal of Ecology and Evolution* 66: 41–47.

DOI: [10.1163/22244662-20191055](https://doi.org/10.1163/22244662-20191055)

Farji-Brener, A.G., Elizalde, L., Fernández-Marín, H. & **Amador-Vargas, S.** 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.

DOI: [10.1098/rspb.2016.0625](https://doi.org/10.1098/rspb.2016.0625)

Farji-Brener, A., Chinchilla, F., Umaña, M.N. Ocasio-Torres, M., Chauta-Mellizo, A., Acosta-Rojas, D., Marinaro, S., de Torres Curth, M. & **Amador-Vargas, S.** 2014. Branching angles reflect a trade-off between reducing trail maintenance costs or travel distances in leaf-cutting ants. *Ecology* 96: 510-517. DOI: [10.1890/14-0220.1](https://doi.org/10.1890/14-0220.1)

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. DOI: [10.1016/j.anbehav.2009.11.009](https://doi.org/10.1016/j.anbehav.2009.11.009)

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. DOI: [10.1111/j.1365-2311.2011.01311.x](https://doi.org/10.1111/j.1365-2311.2011.01311.x)

Quesada-Hidalgo, R., Eberhard, W. G., & Barrantes, G. 2021. Complex behavioral plasticity is not reduced in spiderlings with miniature brains. *Plos one*, 16 (6), e0251919. DOI: [10.1371/journal.pone.0251919](https://doi.org/10.1371/journal.pone.0251919)

Quesada-Hidalgo, R., Solano-Brenes, D., Requena, G. S., & Machado, G. 2019. The good fathers: efficiency of male care and the protective role of foster parents in a Neotropical arachnid. *Animal Behaviour*, 150, 147-155. DOI: [10.1016/j.anbehav.2019.02.007](https://doi.org/10.1016/j.anbehav.2019.02.007)

Gálvez D, Nieto C & Samaniego, P. 2020. Test of the prey-attraction hypothesis for the scorpion fluorescence. *Neotropical Biodiversity* 6:1, 172-177. DOI: [10.1080/23766808.2020.1844991](https://doi.org/10.1080/23766808.2020.1844991)

Gálvez D, Añino Y, Vega C, Bonilla E. 2020. Immune priming against bacteria in spiders and scorpions? *PeerJ* 8:e9285. DOI: [10.7717/peerj.9285](https://doi.org/10.7717/peerj.9285)

Vega-Hildago, A, Añino, Y., Krichilsky, E., Smith, A.R., Santos-Murgas, A & **D. Gálvez**. 2020. Decline of native bees (Apidae: Euglossa) in a tropical forest of Panama. *Apidologie* doi.org/10.1007/s13592-020-00781-2. DOI: [10.1007/s13592-020-00781-2](https://doi.org/10.1007/s13592-020-00781-2)

Gálvez, D., Garrido, M., Gil, F. & Fernández-Marín, H. 2020. Benefits of living underground: the case of parasite release in the antlion (*Myrmeleon timidus*). *Entomologia Experimentalis et Applicata* 168: 280-285. DOI: [10.1111/eea.12895](https://doi.org/10.1111/eea.12895)

Bonadies, E., Wcislo, W.T., **Gálvez, D.**, Hughes, W.H.O., Fernández-Marín, H. 2019. Hygiene Defense Behaviors Used by a Fungus-Growing Ant Depend on the Fungal Pathogen Stages. *Insects* 2019, 10(5), 130. DOI: [10.3390/insects10050130](https://doi.org/10.3390/insects10050130)

Añino, Y., Parra-H, A and **Gálvez, D.** Sociobiology. 2019. Are Orchid Bees (Apidae: Euglossini) Good Indicators of the State of Conservation of Neotropical Forests? *Sociobiology* 66(1): 194-197. DOI: [10.13102/sociobiology.v66i1.3679](https://doi.org/10.13102/sociobiology.v66i1.3679)

Soley, F.G., Rodríguez, R. L., Höbel, G., & Eberhard, W. G. 2021. Insightful behaviour in arthropods?. *Behaviour*, 1(aop), 1-13. DOI: [10.1163/1568539X-bja10077](https://doi.org/10.1163/1568539X-bja10077)

Soley, F.G. 2019. A possible role of decorations in spiderwebs as protection devices that distract predators. *Revista de Biología Tropical*, 67(2), 164-173. DOI: [10.15517/rbt.v67i2supl.37227](https://doi.org/10.15517/rbt.v67i2supl.37227)

IV. Scientific endeavour

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.
https://books.google.com.pa/books?hl=es&lr=&id=FQFbDwAAQBAJ&oi=fnd&pg=PA19&dq=+Hierarchy+of+hypotheses+or+hierarchy+of+predictions%3F+Clarifying+key+concepts+in+ecological+research&ots=8-YwTdU0qK&sig=2x3CSoMXSSktjCQs70qVzNV7i1M&redir_esc=y#v=onepage&q=Hierarchy%20of%20hypotheses%20or%20hierarchy%20of%20predictions%3F%20Clarifying%20key%20concepts%20in%20ecological%20research&f=false

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.
DOI: [10.3389/fevo.2015.00051](https://doi.org/10.3389/fevo.2015.00051)

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.
DOI: [10.1007/s13280-014-0549-0](https://doi.org/10.1007/s13280-014-0549-0)

Soley, F.G., & Perfecto, I. 2021. A way forward for biodiversity conservation: high-quality landscapes. *Trends in Ecology & Evolution*. DOI: [10.1016/j.tree.2021.04.012](https://doi.org/10.1016/j.tree.2021.04.012)

Chacón, I. S., & **Soley, F.G.** 2020. Research for decision-making in marine protected areas such as Isla del Coco, Costa Rica. *Revista de Biología Tropical*, 68, 1-17.
DOI: [10.15517/rbt.v68is1.41126](https://doi.org/10.15517/rbt.v68is1.41126)

V. Vertebrate behavioral ecology

Gálvez, D. 2021. Three-year monitoring of roadkill trend in a road adjacent to a national park in Panama Biotropica. DOI: [10.1111/btp.12995](https://doi.org/10.1111/btp.12995)

Gálvez, D. 2019. Predation of a Rock pigeon by a Yellow-headed caracara in a suburban area in Panama. *Journal of Raptor Research*. 1: 109-110.
DOI: [10.3356/JRR-18-11](https://doi.org/10.3356/JRR-18-11)

VI. Genetics in Arthropod

Soley, F.G., 2021. Still no evidence for transgenerational inheritance or absence of epigenetic reprogramming in the honey bee. *Proceedings of the National Academy of Sciences*, 118(28). DOI: [10.1073/pnas.2108608118](https://doi.org/10.1073/pnas.2108608118)

NEWS FROM OUR LAB

Quisiéramos que a cada sección se le pudiera dar click y que despliegue las publicaciones abajo...

Newspaper articles and & TV Programs

¿Cómo las carreteras afectan a la vida silvestre?

Coverage in the local media; for instance, TVN and Metrolibre about my paper on roadkills trend published in *Biotropica*.

Featuring: Dumas Gálvez

Language: Spanish

https://www.tvn-2.com/contenido_exclusivo/Estudio-muestra-impacto-carreteras-vida-silvestre-panamena_0_5922157726.html

<https://www.metrolibre.com/nacionales/209661-¿c>

[ómo-las-carreteras-afectan-la-vida-silvestre-el-stri-responde-%C2%A0.html](https://www.metrolibre.com/nacionales/209661-¿cómo-las-carreteras-afectan-la-vida-silvestre-el-stri-responde-%C2%A0.html)

“Araña de seda de oro”

Coverage in the local TVN about natural history of the spider *Triconephila clavipes*.

Language: Spanish

Featuring: Dumas Gálvez

https://www.tvn-2.com/videos/noticias/Mundo-Verde-Arana-Seda-Oro-video_2_5925927399.html

“Ant Queens Boost Their Immune System With Sex”

Coverage in National Geographic about my research on immune priming in ant queen during PhD.

Language: English

Featuring: Dumas Gálvez

<https://www.nationalgeographic.com/magazine/article/explore-basic-instincts-black-ant-queen-sex>

“Científico panameño se lleva las hormigas a su casa por el COVID-19”

Coverage in local and international media about my research with ants at the beginning of the pandemic. Some examples include the panamanian TV channel Telemetro, Swiss journal 20 minutes, AFP in spanish, Infobae, among many others.

Language: Spanish & French

Featuring: Dumas Gálvez

<https://www.telemetro.com/ciencia/2020/05/16/cientifico-panameno-se-lleva-las-hormigas-a-su-casa-por-el-covid-19/2865480.html>

<https://www.20min.ch/fr/story/un-chercheur-panameen-confine-avec-ses-fourmis-622584705580>

<https://www.youtube.com/watch?v=Gh1hbCa9VOY>

<https://www.infobae.com/america/agencias/2020/05/16/cientifico-panameno-se-lleva-las-hormigas-a-su-casa-por-la-covid-19-2/>

“Scientists get creative to carry on research during pandemic”

Recent coverage in Phys.org, Yahoo News about my research with ants during the pandemics.

Language: English

Featuring: Dumas Gálvez

<https://news.yahoo.com/scientists-creative-carry-research-during-142054109.html>

<https://phys.org/news/2021-04-scientists-creative-pandemic.html>

“Ants, acacias and shameless bribery”.

Coverage of our paper entitled “Short-term plasticity and variation in acacia ant-rewards under different conditions of ant occupancy and herbivory”, was highlighted in The Economist.

Language: English

Featuring: Finote Gijsman, Maikol Guevara, Yorlenis González and Sabrina Amador

<https://www.economist.com/science-and-technology/2021/07/07/ants-acacias-and-shameless-bribery>

“La danta que trató de cruzar la Interamericana norte” (The tapir that tried to cross the road”).

Opinion piece for the Costa Rican newspaper La Nación and CRHoy to raise awareness towards wildlife. Specifically, these articles comment on the need to have wildlife-friendly road design.

Written by: Sabrina Amador

Language: Spanish

<https://bit.ly/2Wfei3d>

<http://bit.ly/3aWHTHw>

Podcast

“La madriguera” podcast episode “*Tan chiquitito pero tan enorme*” (“So little, yet so big”).

Production: Hernán Jiménez.

I was invited by this renowned Costa Rica filmmaker based in Miami, to participate in a podcast series he created for people to listen during the quarantine period, along with Dr. Franklin Chang. This episode was about perspective, so I discussed how it is to be an acacia ant.

Language: Spanish

Featuring: Sabrina Amador

This episode is on Youtube.

<https://www.youtube.com/watch?v=w37wl0arl70>, and it is also available at Spotify https://open.spotify.com/episode/1s7p0Oe7Qa7A1KNa5Orxgc?si=2HuhLEFcRbuN_Sx7EgXoyQ.

Outreach (scientific material for general public)

In this section, we share interesting material about animal behavior, nature and ecology.

Fieldguides

“*Field guide to the swollen-thorn acacias and the acacia ants.*”

Links to download a pdf below, or scanning the **QR codes**.

Language: English and Spanish (IN THE SAME DOCUMENT)

Costa Rica: <https://tinyurl.com/r9bm77ra>

Panama: <https://tinyurl.com/y7yzuf3k>

Descubrimientos de las hormigas del cachito en Bosque Seco Coronado y Parque Natural Metropolitano.

Summary of the main findings in the article entitled “Short-term plasticity and variation in acacia ant-rewards under different conditions of ant occupancy and herbivory”, for Coronado and Parque Natural Metropolitano. Written for the general public.

Language: Spanish. **Subir PDF.**

Posters & Infographics

“*The mysterious friend*”, (original: *El amigo misterioso*).

Poster inspired in the work that *Atta* ants carry out to cultivate the fungus that feeds them.

Language: Spanish. [Subir PDF.](#)

“Aquí el que no corre, vuela: chinches de las acacias ajustan la técnica de evasión según la especie de hormiga”.

Poster about the behavior of an herbivore bug (*Piezogaster reclusus*) on ant defended acacia trees (*Vachellia collinsii*).

Language: Spanish. [Subir PDF.](#)

What are these insects that came out with the rain? (original: *¿Qué son estos insectos que salieron con la lluvia?*).

Infographic about leafcutter ant queens and males.

Language: Spanish. [Documento en jpg.](#)

Videos

“A bridge for birds” (original: *“Un puente para las aves”*).

Created to raise attention and awareness about the raptor migration that crosses Panama during September to November, and it is visible from almost every corner of Panama City.

Language: Spanish

<https://www.youtube.com/watch?v=7AxPkaHYev0&t=12s>

“When things turn difficult” (original: *“Cuando las cosas se ponen color de hormiga”*).

Inspired by old comics and silent movies, this video shows the difficulties of leaf-cutter ants to carry the leaves when a heavy tropical rain starts. We collaborated with Lithuanian accordionist Martynas Levickis, who kindly donated an interpretation of the Hungarian Dance No.5.

Language: Spanish (very few words...)

<https://www.youtube.com/watch?v=RI8hguKeui0&t=4s>

“Plant mutualistic ants require weaker mandible force?” (original: *¿Hormigas mutualistas de plantas requieren menos fuerza mandibular?*

Video about a short project regarding the mandible force in *Pseudomyrmex* ants.

Language: Spanish

<https://youtu.be/gHKl0oEJqRc>

Magazine articles

“Digging Up Knowledge from Tropical Forest Floors”.

Smithsonian Magazine, by Dumas Gálvez.

A story about what it means to collect a particular ant in the Neotropics, which I dare to call “Neotropical Blackish Ant” since it does not have an official common name.

Language: English

<https://www.smithsonianmag.com/blogs/smithsonian-institution-office-fellowships-and-int/2020/08/20/digging-knowledge-tropical-forest-floors/>

“Argiope y el arte de sus decoraciones”

In this article, I describe for amateur entomologists aspects of the natural history of *Argiope* spiders and particularly the potential function of the web decorations.

Author: Dumas Gálvez

Language: Spanish

http://mundoartropodo.com/pdf/Revista_Mundo_Artropodo_n-04.pdf

Educational webpages

Web page about the association of ants (*Pseudomyrmex*) with acacias (google site).

Language: Spanish

<https://sites.google.com/site/pseudomyrmexant/home?authuser=0>

Necesitamos subir los docs en pdf, que muestren una vista previa, y al hacer click que se descarguen.