

Iago Sanmartín-Villar

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Summary of CV

Iago Sanmartín Villar (Santiago de Compostela; 07/10/1986) holds a degree in Biology from the University of Santiago de Compostela (2004-2009), a Master's degree in Ethology from the University of Cordoba (2011-2012) and an international PhD from the University of Vigo (2012-2017) in the Biodiversity and Ecosystems PhD programme. He has completed an undergraduate internship at the Wildlife Recovery Centre of Cotorredondo (Pontevedra; 2010) with the aim of increasing his experience in the maintenance and management of animals.

He has obtained two grants from the Spanish Ministry in the predoctoral phase (BES-2012-052005, EEBB-I-15-09382) and two in the postdoctoral phase, one from the Xunta de Galicia (ED481B 2017/034) and another from the "Union Internationale pour l'Étude des Insectes Sociaux" (UIEIS). He has been contracted by the University of Vigo and by the "Coordinadora para o Estudo dos Mamíferos Mariños" (CEMMA). He has participated in two research projects of the Spanish Ministry of Education (CGL2011-22629 and PGC2018-096656-B-100) as a researcher. He is currently leading as PI a project (2021/43/P/NZ8/03306) co-funded by the Polish National Science Centre and the European Union Framework Programme for Research and Innovation Innovation Horizon 2020 under the Marie Skłodowska-Curie grant agreement (945339). He has taught theoretical and practical classes at undergraduate (2 subjects), master's degree and in the University Programme for Seniors (Universidade de Vigo). He has co-directed three bachelor theses (Spain), three master theses (Belgium and France), and evaluated master theses. He is currently co-directing a PhD student (Poland). He has reviewed five articles for Q1 journals and has been topic editor of a special issue. He has given recreational presentations at a school and a day centre for the elderly (Iglemen). He is fluent in four languages (English, Spanish, French and Galician).

His research focuses on the underlying mechanisms that determine behaviour and the effects they have on population dynamics and evolutionary processes. He has analysed reproductive strategies, genetic inheritance, developmental changes, personality traits, transgenerational and climate change effects; modelled population densities and trends; resolved taxonomic doubts and described a new species. He has studied a total of 18 solitary (mainly odonates) and social (ants) species. He has carried out meta-analyses and scientific commentaries. His results have been published in 24 articles in JCR-indexed journals, in three book chapters (two published, one accepted), in 15 national (5) and international (10) congresses, and have been broadcast in three popular magazines and one radio station. His works have been cited 194 times (H index = 8). His research output stands out for its collaborative and international character, having collaborated with 38 researchers from different countries and made international stays for three and a half years in research centres in Belgium (KU Leuven), Ecuador (Universidad San Francisco de Quito), China (Chinese Academy of Sciences), France (CNRS) and Poland (PAS).

He is currently studying the mechanisms governing problem solving in social insects by comparing behavioural and neurological variability at the inter- and intra-individual level. His future research objectives will focus on unravelling the divergence of invasive species in isolated populations and how major environmental changes expected in the near future (interspecific virus transmission

and temperature fluctuations) might modify the dispersal and adaptation of invasive species. He intends to increase the multidisciplinary of his studies by learning methods related to genetics, neuroanatomy and virology. Its future results will be extrapolated to different species and could be used in other fields (sociobiology, mathematical modelling, cell biology) as well as being applied in the management, conservation and control of species.

Two three-year periods recognised by the University of Vigo (31/12/2020). Co-directing a doctoral thesis. Total citations: 194. Average number of citations/year during the last 5 years (not including the current year): 14. Co-authors: 38. Publications: 24 scientific articles + 3 book chapters (two published, one accepted), of which 12 in Q1. H-index: 8. Review for Q1 journals: 5. Q1 journal editor: 6: Web of Science, Scopus, Scimago and personal information.

Current professional situation

Postdoc. Museum and Institute of Zoology, Polish Academy of Sciences. Mentor: Magdalena Witek.

Academic storyline

- 2022-2024. Postdoctoral research. MiZ. PAN. Poland.
- 2019-2022. Postdoctoral research. ECOEVO Lab. University of Vigo. Spain.
- 2017-2019. Postdoctoral research. CRCA. CNRS. France.
- 2012-2017. PhD researcher. ECOEVO Lab. University of Vigo. Spain.
Thesis: Eco/Ethology of colour polymorphic damselflies.
- 2011-2012. Research assistant. ECOEVO Lab. University of Vigo. Spain.
- 2010-2011. MSc in Ethology. University of Córdoba. Spain.
- 2010. Zoologist. CEMMA (Coordination for the Study of Marine Mammals). Spain.
- 2010. BSc practices: Protection Center of Wild Animals of Cotorredondo. Spain.
- 2004-2009*. BSc in Biology. University of Santiago de Compostela. Spain.
*The degree in the Spanish system at that time consisted of five years.

Publications

- [Sanmartín-Villar, I.](#); Cruz da Silva, E.; Chiara, V.; Cordero-Rivera, A.; Lorenzo-Carballa, M.O. (2022). Genetic divergence and aggressiveness within a supercolony of the invasive ant *Linepithema humile*. *NeoBiota*, 77, 125-153.
- [Sanmartín-Villar, I.](#); Cordero-Rivera, A. Odonata survival: insights from mark-recapture experiments. In *Dragonflies and Damselflies: Model Organisms for Ecological and Evolutionary Research*. Oxford University Press. ISBN: 9780192898623.
- Lorenzo-Carballa, M. O.; [Sanmartín-Villar, I.](#); Cordero-Rivera, A. (2022). Molecular and morphological analyses support different taxonomic units for Asian and Australo-Pacific forms of *Ischnura aurora* (Odonata, Coenagrionidae). *Diversity*, 14(8), 606.
- [Sanmartín-Villar, I.](#); Yu, X.; Cordero-Rivera, A. (2022). Direct and cross-generational effects of reproduction on fitness and behavioural variability in male-biased environments. *Current Zoology*, zoac045.
- [Sanmartín-Villar, I.](#) Social buffer or avoidance depends on the similarity of stress between queen ants. (2022). *Current Zoology*, zoac031.
- [Sanmartín-Villar, I.](#); Lorenzo-Carballa, M. O.; Zhang, H.; Cordero-Rivera, A. (2022). *Ischnura praematura* sp. nov. (Odonata: Zygoptera: Coenagrionidae): a species from Yunnan (China) whose females mate in the teneral state. *Zootaxa*, 5087(1), 59-74.

- Galicia-Mendoza, D. I.; [Sanmartín-Villar, I.](#); García-Miranda, O.; Cordero-Rivera, A. (2021). Territorial damselflies are larger and show negative allometry in their genitalia. *Biological Journal of the Linnean Society*, 134(3), 697-706.
- [Sanmartín-Villar, I.](#); Jeanson, R. (2021). Early social context does not influence behavioral variation at adulthood in ants. *Current Zoology*, 68(3), 335-344.
- [Sanmartín-Villar, I.](#); Csata, E.; Jeanson, R. (2021). Variability in activity differs between castes in the ant *Linepithema humile*. *Ecological Entomology*, 46, 1373–1378
- Cordero-Rivera, A.; Roucourt Cezário, R.; Guillermo-Ferreira, R.; Marques Lopez, V.; [Sanmartín-Villar, I.](#) (2021). Can scientific laws be discussed on philosophical grounds? A reply to naïve arguments on “predators” by Bramble (2020). *Animal Biodiversity and Conservation*, 44(2), 205-211.
- Sánchez-Guillén, R. A.; Ceccarelli, S. F.; Villalobos, F.; Neupane, S.; Rivas-Torres, A.; [Sanmartín-Villar, I.](#); Wellenreuther, M.; Bybee, S. B.; Velásquez-Vélez, M. I.; Realpe, E.; Chávez-Ríos, J. R.; Dumont, H. J.; Cordero-Rivera, A. (2020). The evolutionary history of colour polymorphism in *Ischnura* damselflies (Odonata: Coenagrionidae). *Odonatologica*, 49(3/4), 333-370.
- Vilela, D. S.; [Sanmartín-Villar, I.](#) (2019). Reproductive behavior and Sexual Selection. In *Aquatic Insects* (pp. 263-293). Springer, Cham. ISBN: 978-3-030-16327-3.
- Cordero-Rivera, A.; [Sanmartín-Villar, I.](#); Herrera, M. S.; Rivas-Torres, A.; & Encalada, A. C. (2019). Survival and longevity in neotropical damselflies (Odonata, Polythoridae). *Animal Biodiversity and Conservation*, 42(2), 293-300.
- Gabela-Flores, M. V.; [Sanmartín-Villar, I.](#); Rivas-Torres, A.; Encalada, A. C.; Cordero-Rivera, A. (2019). Demography and territorial behaviour of three species of the genus *Hetaerina* along three tropical stream ecosystems (Odonata: Calopterygidae). *Odonatologica*, 48(1/2), 79-100.
- [Sanmartín-Villar, I.](#); Rivas-Torres, A.; Gabela-Flores, M. V.; Encalada, A. C.; Cordero-Rivera, A. (2017). Female polymorphism and colour variability in *Argia oculata* (Coenagrionidae: Zygoptera). *Neotropical Biodiversity*, 3(1), 203-211.
- Rivas-Torres, A.; [Sanmartín-Villar, I.](#); Gabela-Flores, M. V.; Cordero-Rivera, A. (2017). Demographics and behaviour of *Heteragrion cooki*, a forest damselfly endemic to Ecuador (Odonata). *International Journal of Odonatology*, 20(2), 123-135.
- Galicia-Mendoza, I.; [Sanmartín-Villar, I.](#); Espinosa-Soto, C.; Cordero-Rivera, A. (2017). Male biased sex ratio reduces the fecundity of one of three female morphs in a polymorphic damselfly. *Behavioral Ecology*, 8(4), 1183–1194.
- [Sanmartín-Villar, I.](#); Zhang, H.; Cordero-Rivera, A. (2017). Ontogenetic colour changes and male polymorphism in *Mnais andersoni* (Odonata: Calopterygidae). *International Journal of Odonatology*, 20(2), 53-61.
- Arambourou, H.; [Sanmartín-Villar, I.](#); Stoks, R. (2017). Wing shape-mediated carry-over effects of a heat wave during the larval stage on post-metamorphic locomotor ability. *Oecologia*, 184(1), 279-291.
- Narváez, A.; [Sanmartín-Villar, I.](#) (2017) *Leposoma parietale* (common root lizard). Mating. *Herpetological review*. 47 - 4, pp. 671 - 671.
- Lorenzo-Carballa, M. O.; Hassall, C.; Encalada, A. C.; [Sanmartín-Villar, I.](#); Torres-Cambas, Y.; Cordero-Rivera, A. (2017). Parthenogenesis did not consistently evolve in insular populations of *Ischnura hastata* (Odonata, Coenagrionidae). *Ecological Entomology*, 42(1), 67-76.
- [Sanmartín-Villar, I.](#); Cordero-Rivera, A. (2016). The inheritance of female colour polymorphism in *Ischnura genei* (Zygoptera: Coenagrionidae), with observations on melanism under laboratory conditions. *PeerJ*, 4, e2380.
- [Sanmartín-Villar, I.](#); Cordero-Rivera, A. (2016). Female colour polymorphism and unique reproductive behaviour in *Polythore* damselflies (Zygoptera: Polythoridae). *Neotropical entomology*, 45(6), 658-664.

- Debecker, S.; Sanmartín-Villar, I.; de Guinea-Luengo, M.; Cordero-Rivera, A.; Stoks, R. (2016). Integrating the pace-of-life syndrome across species, sexes and individuals: covariation of life history and personality under pesticide exposure. *Journal of Animal Ecology*, 85(3), 726-738.
- Sanmartín-Villar, I.; Zhang, H-M.; Cordero-Rivera, A. (2016). Colour polymorphism and ontogenetic colour changes in *Ischnura rufostigma* (Odonata: Coenagrionidae). *Odonatologica*, 45(1-2), 77-86.
- Velo-Antón, G.; Santos, X.; Sanmartín-Villar, I.; Cordero-Rivera, A.; Buckley, D. (2015). Intraspecific variation in clutch size and maternal investment in pueriparous and larviparous *Salamandra salamandra* females. *Evolutionary ecology*, 29(1), 185-204.

Congresses

- 2023. XII European Congress of Entomology. Greece.
- 2022. European Conference on Behavioural Biology. The Netherlands.
- 2021. Taxomara. Spain
- 2021. V Jornadas sobre Biodiversidade e Património Natural da SGHN. Spain
- 2021. Insetos Sociais em Rede. V Workshop online IUSSI. Brazil.
- 2019. 19eme Colloque de Biologie de l'Insecte. Albi, France.
- 2019. 1st Meeting of the Iberian Ecological Society & XIV AEET Meeting. Barcelona, Spain.
- 2018. International Congress of the Spanish Society of Ethology and Evolutionary Ecology. Mieres, Spain.
- 2018. 18th international congress of the IUSSI 2018. Guarujá, Brazil.
- 2017. 2nd CRCA PhD Student Symposium. Toulouse, France.
- 2016. Eco-etología 2016 (2 contributions). Granada, Spain.
- 2014. XV Congreso nacional y XII iberoamericano de Etología. Barcelona, Spain.
- 2014. 3th European Congress of Odonatology. Montpellier, France.
- 2013. International Congress of Odonatology. Freising, Germany.
- 2012. XIV Congreso nacional y XI iberoamericano de Etología (2 contributions). Sevilla, Spain.
- 2012. XVI Congress of the Iberian association of Limnology. Guimaraes, Portugal.

International stays

- 2022-2024. Laboratory of Social and Myrmecophilous Insects. Museum and Institute of Zoology. Supervisor: Magdalena Witek. Polish Academy of Sciences. Warsaw, Poland. Duration: since 01/09/2022.
- 2017-2019. Interindividual Variability and Emergent Plasticity Team. Centre des Recherches sur la Cognition Animale. CNRS. Supervisor: Raphaël Jeanson. University Paul Sabatier. Toulouse, France. Duration: 24 months.
- 2016. Laboratorio de Ecología Acuática. Supervisor: Andrea C. Encalada. University of San Francisco de Quito. Quito, Ecuador. Duration: 1 month.
- 2015. Fieldwork. State Key Laboratory of Freshwater Ecology and Biotechnology. Supervisor: Quinghua Cai. Chinese Academy of Sciences. Wuhan, China. Duration: 3 months.
- 2014. Laboratorio de Ecología Acuática. Supervisor: Andrea C. Encalada. University of San Francisco de Quito. Quito, Ecuador. Duration: 2 months.
- 2013-2014. Laboratory of Aquatic Ecology, Evolution and Conservation. Supervisor: Robby Stoks. University of Leuven. Leuven, Belgium. Duration: 6 months.

Fellowships

- 2017-2020. *Axudas de apoio á etapa postdoutoral. Xunta de Galicia*. Ref: ED481B 2017/034. Duration: 3 years and 6 months. Spain.
- 2018. Mobility grant for Congress Assistance. *Union Internationale pour l'Étude des Insectes Sociaux*. Duration: 5 days. France.
- 2015 - *Axudas a la movilidad predoctoral para la realización de estancias breves en centros de I+D españoles y extranjeros 2014*. Ministry of Spain. Ref: EEBB-I-15-09382. Duration: 3 months. Spain.
- 2013 / 2016 - *Formación de Personal Investigador (FPI 2012)*. Ministry of Spain. Ref: BES-2012-052005. Duration: 4 years. Spain.

Projects

- 2022-2024. Alien rule: Unveiling the mechanisms used by invasive ants to adapt to current and future environmental conditions. Ref: 2021/43/P/NZ8/03306. PI. National Science Centre and European Union Framework Programme for Research and Innovation Horizon 2020 under the Marie Skłodowska-Curie grant agreement (945339).
- 2019-2022. Functional and ethological diversity in mainland and island communities (ETODIVERSIDAD). Ref: PGC2018-096656-B-100. Researcher. Ministry of Spain.
- 2012-2015. Old responses to new challenges: Ecology and Evolution of odonates. (ODOEVO2011). Ref: CGL2011-22629. Researcher. Ministry of Spain.

Teaching accreditations

- Galaxie. French Agency for Quality Assessment and Accreditation. *Maître de conférences*. Accreditation for "Population biology and ecology" and "Biology of organisms". 19/04/2021.
- ACSUGA. Agency for Quality Assurance in the Galician University System. *Profesor Ayudante Doutor*. 17/12/2020.
- ANECA. Spanish Agency for Quality Assessment and Accreditation. *Profesor Ayudante Doctor*. 14/10/2019.

Teaching

- 2021-2022. Introduction to evolutionary ecology. University Programme for Seniors. University of Vigo.
- 2019-2021. Conservation biology. Master of Terrestrial biodiversity. University of Vigo, University of Santiago de Compostela, University of Coruña. Spain.
- 2014-2020. Management of protected areas and biodiversity. Bachelor (4th year) in Forestry Engineering. University of Vigo. Spain.
- 2014-2020. Forestry ecology. Bachelor (2th year) in Forestry Engineering. University of Vigo. Spain.

Thesis committee

- 2019-2020. MSc thesis committee member. Master of Terrestrial biodiversity. University of Vigo, University of Santiago de Compostela, University of Coruña. Spain.

Student supervision

- 2022-2026 - Srikrishna Narasimhan (PhD student; MilZ, PAS). Behavioural and neuroanatomical variability of individual and collective problem-solving in invasive and native ants. Museum and Institute of Zoology, Polish Academy of Sciences. Poland. Duration: 4 years.
- 2021-2022- Miguel Castro Cardoso (BSc; University of Vigo, Spain). Aliens in synergy: insect-plant interactions between three introduced species. University of Vigo. Spain. Duration: 6 months.
- 2020-2021. Blanca María Fraga Cimadevila (BSc; University of Vigo, Spain). Ethodiversity of the invasive ant *Linepithema humile*: behavioural comparison between island and mainland populations. University of Vigo. Spain. Duration: 6 months.
- 2019-2020. Everton Cruz da Silva (BSc; Federal University of Pará, Brazil). Within supercolony aggressiveness and seasonal variation of invasive potential in the ant *Linepithema humile*. University of Vigo. Spain. Duration: 4 months.
- 2018. Marine Poisay (MSc; University Paul Sabatier, France). Variabilité comportementale et développement larvaire chez *Lasius niger*. CRCA-CNRS. France. Duration: 3 months.
- 2016. María Virginia Gabela Flores (BSc; University of San Francisco de Quito, Ecuador). Demography and territorial behavior of three species of the genus *Hetaerina* (Odonata: Calopterygidae) along three tropical stream ecosystems. Jocotoco Biological Station. Ecuador. Duration: 1 month.
- 2014. Nina Bidoli (MSc; Lycée Pierre Paul Riquet, France). L'étude d'*Ischnura hastata*, une demoiselle pratiquant la parthénogénèse. University of Vigo. Spain. Duration: 3 months.
- 2013-2014. Miguel de Guinea Luengo (MSc; KU Leuven, Spain). Pace-of-life-syndromes in four species of *Ischnura* damselflies. KU Leuven. Belgium. Duration: 6 months.
- 2012. Ilaria Cardaio (BSc; University of Perugia, Italy). Tecnica di allevamento degli Odonati. University of Vigo. Spain. Duration: 3 months.

Teacher training

- 2021. The art of connecting. Effective communication and leadership. University of Vigo. Duration: 20 hours.
- 2021. Public speaking and communication for teachers. University of Vigo. Duration: 24 hours
- 2020. Virtual classrooms in Moodle for teaching use (Level 1-2). University of Vigo. Duration: 24 hours.
- 2020. Training course in statistics with R for researchers. University of Vigo. Duration: 35 hours.
- 2020. Creating and processing images and photographs with GIMP. University of Vigo. Duration: 20 hours.
- 2020. Introduction to flipped learning: learning design and basic tools. University of Vigo. Duration: 8 hours.

Languages

- English
- Spanish
- French
- Galician

Computer skills

- Office automation: Microsoft Office.
- Statistical software: R.
- References manager: Mendeley, Zotero.
- Image analysis and edition: ImageJ, GIMP.
- Tracking software: AnimalTA, SwisTrack, ToxTrac.
- Population modelling: Vortex.

Others

- Reviewer for *Aquatic Sciences*, *Biological Journal of the Linnean Society*, *Ecological Entomology*, *Insects*, and *Scientific Reports*.
- Topic Editor for *Insects*. Special Issue: *Behavioural Variability*.
- Translation: AnimalTA (tracking software) to Spanish and Galician.
- Scientific divulgation in *GCiencia*, *Faro de Vigo*, *La Vanguardia*, *Radio Valladares*.
- Scientific divulgation in school (Toulouse; France) and centre for the elderly (Padrón; Spain).
- Membership: APPEL (*Association de Parrainage pour l'Education et la liberté*), CEMMA (*Coordinadora para o Estudo dos Mamíferos Mariños*), Greempeace, SGHN (*Sociedade Galega de Historia Natural*), SEEE (*Sociedad Española de Etología y Ecología Evolutiva*).