

Tomás Revilla

Curriculum Vitae

University of South Bohemia
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Personal information

Full Name Tomás Augusto Revilla Rimbach
Place and date of birth September 16, 1973, Essen, Germany
Citizenship Venezuelan

Education

1997 **Licenciate in Biology**, *Central University of Venezuela*, Caracas, Venezuela
2000 **M.S. in Ecology**, *Central University of Venezuela*, Caracas, Venezuela
2010 **Ph.D. in Mathematics and Natural Sciences**, *University of Groningen*, Groningen, The Netherlands

Awards

2004 Doctoral grant from the European Union Programme of High Level Scholarships for Latin America (AlBan). Doctoral Programme. Declined
2004 Doctoral tuition sponsored by the Computational Life Sciences Programme of the Netherlands Organization for Scientific Research (NWO)

Work experience

1993–1999 **Teaching Assistant in Chemical Physics, Biostatistics, Evolution, and Population Ecology**, *School of Biology, Faculty of Science, Universidad Central de Venezuela*, Caracas, Venezuela
1998–1999 **Lecturer in Biostatistics, and Chemical Physics**, *School of Biology, Faculty of Science, Universidad Central de Venezuela*, Caracas, Venezuela
2000–2001 **Research Assistant, Project *Dynamics of Infectious Diseases in Heterogeneous Environments***, directed by Dr. Diego Rodríguez, *Institute of Tropical Zoology, Faculty of Science, Universidad Central de Venezuela*, Caracas, Venezuela
2001 **Statistical Consultant**, *Organon Venezolana S.A.*, Caracas, Venezuela
2005–2009 **Research Assistant, Project *The emergence of biocomplexity: a steady state between physical and biotic evolution?***, directed by Dr. Franz J. Weissing, *Theoretical Biology Group, Faculty of Mathematics and Natural Sciences, University of Groningen*, Groningen, The Netherlands
2009–2010 **Research Assistant, Project *Testing the metabolic theory of ecology with the help of temperature controlled phytoplankton experiments***, directed by Dr. Franz J. Weissing, *Theoretical Biology Group, Faculty of Mathematics and Natural Sciences, University of Groningen*, Groningen, The Netherlands
2010–2011 **Researcher and Lecturer**, *Instituto de Zoología y Ecología Tropical (IZET)*, *Faculty of Science, Universidad Central de Venezuela*, Caracas, Venezuela

- 2011–2015 **Post-doctoral fellow**, *Station D'Ecologie Experimentale du CNRS à Moulis*, Moulis, France
- 2015–present **Researcher**, *Laboratory of Theoretical Ecology, Institute of Entomology, Academy of Sciences of the Czech Republic*, České Budějovice, Czech Republic
- 2018–present **Lecturer**, *Faculty of Natural Sciences, University of South Bohemia*, České Budějovice, Czech Republic

Teaching at University of South Bohemia

- UMB/564I **Calculus I**
- UMB/565I **Calculus II**
- UAI/501 **Mathematics for Artificial Intelligence and Data Science**
- UMB/016 **Mathematical Modelling for Life Sciences**

Publications in peer reviewed journals

- T. A. Revilla. Resource Competition in Stage-structured Populations. *Journal of Theoretical Biology*, 204(2):289–298, 2000.
- T. A. Revilla. Effects of Intraguild Predation on Resource Competition. *Journal of Theoretical Biology*, 214(1):49–62, 2002.
- T. A. Revilla and G. Garcia-Ramos. Fighting a virus with a virus: a dynamic model for HIV-1 therapy. *Mathematical Biosciences*, 185(2):191–203, 2003.
- L. F. Chaves, M. J. Hernandez, T. A. Revilla, D. J. Rodriguez, and J. E. Rabinovich. Mortality profiles of *Rhodnius prolixus* (Heteroptera: Reduviidae), vector of Chagas disease. *Acta Tropica*, 92(2):119–125, 2004.
- T. A. Revilla and F. J. Weissing. Nonequilibrium coexistence in a competition model with nutrient storage. *Ecology*, 89(3):865–877, 2008.
- F. Encinas-Viso, T. A. Revilla, and R. S. Etienne. Phenology drives mutualistic network structure and diversity. *Ecology Letters*, 15(3):198–208, 2012.
- T. A. Revilla, G. F. Veen, M. B. M. B. Eppinga, and F. J. Weissing. Plant-soil feedbacks and the coexistence of competing plants. *Theoretical Ecology*, 6(2):99–113, 2012.
- F. Encinas-Viso, T. A. Revilla, and R. S. Etienne. Shifts in pollinator population structure may jeopardize pollination service. *Journal of Theoretical Biology*, 352:24–30, 2014.
- F. Encinas-Viso, T. A. Revilla, E. van Velzen, and R. S. Etienne. Frugivores and cheap fruits make fruiting fruitful. *Journal of Evolutionary Biology*, 27(2):313–324, 2014.
- T. A. Revilla, F. Encinas-Viso, and M. Loreau. (A bit) Earlier or later is always better: Phenological shifts in consumer-resource interactions. *Theoretical Ecology*, 7(2):149–162, 2014.
- T. A. Revilla. Numerical responses in resource-based mutualisms: a time scale approach. *Journal of Theoretical Biology*, 378:39–46, 2015.
- T. A. Revilla and F. Encinas-Viso. Dynamical transitions in a pollination–herbivory interaction: a conflict between mutualism and antagonism. *PLoS ONE*, 10(2):e0117964, 2015.
- T. A. Revilla, F. Encinas-Viso, and M. Loreau. Robustness of mutualistic networks under phenological change and habitat destruction. *Oikos*, 124(1):22–32, 2015.

- T. A. Revilla and F. Encinas-Viso. Ecología y Evolución de la Endozoocoria. *Acta Biologica Venezuelica*, 35(2):187–215, 2016.
- T. A. Revilla and V. Křivan. Pollinator foraging adaptation and the coexistence of competing plants. *PLoS ONE*, 11(8):e0160076, 2016.
- T. A. Revilla and V. Křivan. Competition, trait-mediated facilitation, and the structure of plant-pollinator communities. *Journal of Theoretical Biology*, 440:42–57, 2018.
- V. Křivan and T. A. Revilla. Plant coexistence mediated by adaptive foraging preferences of exploiters or mutualists. *Journal of Theoretical Biology*, 480:112–128, 2019.
- T. A. Revilla, T. Marcou, and V. Křivan. Plant competition under simultaneous adaptation by herbivores and pollinators. *Ecological Modelling*, 455:109634, 2021.
- N. A. Pardikes, T. A. Revilla, C-H. Lue, M. Thierry, D. Souto-Vilarós, and J. Hrček. Effects of phenological mismatch under warming are modified by community context. *Global Change Biology*, 28(13):4013–4026, 2022.
- T. A. Revilla and V. Křivan. Prey–predator dynamics with adaptive protection mutualism. *Applied Mathematics and Computation*, 433:127368, 2022.
- T. E. Galanthay, V. Křivan, R. Cressman, and T. A. Revilla. Evolution of aggression in consumer-resource models. *Dynamic Games and Applications*, 13:1049–1065, 2023.
- T. Marcou, T. A. Revilla, and V. Křivan. Evolutionary emergence of plant and pollinator polymorphisms in consumer-resource mutualisms. *Journal of Theoretical Biology*, 594:111911, 2024.
- D. Romero-Mujalli, L.I.R. Fuchs, M. Haase, J.-P. Hildebrandt, F.J. Weissing, and T.A. Revilla. Emergence of phenotypic plasticity through epigenetic mechanisms. *Evolution Letters*, 8(4):561–574, 2024.

Other publications

- 📄 T.A. Revilla. "Multispecies Resource Competition", *PhD Thesis*, University of Groningen. 2010.
- 📄 T.A. Revilla. "Changement climatique: synchronisation des espèces et modélisation", In *Ariège, terre de science, Collection Petit Illustré*. (19), pp. 16. La Dépêche du Midi / CNRS, 2013.
- 📄 T.A. Revilla and Encinas-Viso, F. "Ecología y Evolución de la Endozoocoria", In *Modelos y Simulaciones Biológicas: Ecología y Evolución*. Cipriani, R. & de Vltadar, H. (ed.). Amazon Createspace. 2015.
- 📄 Arnoldi J.-F., Haegeman B., Revilla T. y Loreau M. "Particularity of 'Universal resilience patterns in complex networks'". bioRxiv, 2016

Talks and Posters

- 1999 **Talk:** *Competition for resources in stage-structured populations*, III Venezuelan Congress of Ecology, Puerto Ordaz, Venezuela
- 2000 **Talk:** *Conditions for coexistence in food webs with omnivory: a three species model*, L Annual Convention of the Venezuelan Association for the Advancement of Science, Caracas, Venezuela
- 2001 **Talk:** *Fighting virus with virus: a dynamical model*, V Venezuelan Congress of Ecology, Merida, Venezuela

- 2006 **Talk: *Multispecies resource competition: The variable storage model***, Annual meeting of the Dutch Society of Theoretical Ecology, Schorl, The Netherlands
- 2006 **Poster: *Integrating Resource and Metabolism Based Approaches to Ecology: A Simple Food Chain Model***, Gordon Research Conference on "The metabolic basis of ecology", Lewiston ME, United States of America
- 2006 **Talk: *Multispecies competition models with resource storage***, CEES Symposium on "Experimental and Theoretical Approaches to Biodiversity", Groningen, The Netherlands
- 2007 **Talk: *Stability properties of competition models: a comparison***, Annual Verweij Meeting, Lunteren, The Netherlands
- 2007 **Poster: *Non-equilibrium dynamics of a resource competition model with nutrient storage***, EPSRC/BICS Workshop "Mathematical Models and Experimental Microbial Systems: Tools for Studying Evolution", Bath, United Kingdom
- 2007 **Talk**, CEES Symposium on "Integrative Ecology at Different Organization Levels", Groningen, The Netherlands
- 2008 **Poster: *Non-equilibrium dynamics of a resource competition model with nutrient storage***, NERN Annual Meeting 2008, Lunteren, The Netherlands
- 2009 **Talk: *Integrating metabolic and resource competition theories: simple modelling approaches***, Mathematical Models in Ecology and Evolution 2009, University of Bristol, Bristol, United Kingdom
- 2009 **Poster: *Plant-soil feedbacks and competition dynamics***, 94th Annual Meeting of the Ecological Society of America, Albuquerque NM, United States of America
- 2011 **Talk: *Evolutionary ecology of seed dispersal by frugivores: From exploitation to mutualism***, 96th Annual Meeting of the Ecological Society of America, Austin TX, United States of America
- 2014 **Talk: *Robustness of mutualistic networks under phenological change and habitat destruction***, 99th Annual Meeting of the Ecological Society of America, Sacramento CA, United States of America
- 2014 **Talk: *Dynamical transitions in a pollination-herbivory interaction: a conflict between mutualism and antagonism***, Joint Annual Meeting Société Française d'Écologie and British Ecological Society, Lille, France
- 2015 **Talk: *The Evolutionary Ecology of Endozoochory***, BIOMATH 2015: International Conference on Mathematical Methods and Models in Biosciences, Blagoevgrad, Bulgaria
- 2015 **Poster: *Pollinator foraging flexibility and the coexistence of competing plants***, Mathematical Models in Ecology and Evolution 2015, Paris, France
- 2015 **Talk: *Pollinator foraging flexibility and the coexistence of competing plants***, 5th conference of the Czech Society for Ecology, České Budějovice, Czech Republic
- 2016 **Talk: *Pollinator foraging flexibility and the coexistence of competing plants***, Conflict, Competition, Cooperation & Complexity: Using Evolutionary Game Theory to model realistic populations, Plön, Germany
- 2016 **Talk: *Pollinator foraging adaptation and the coexistence of competing plants***, Conflict, Competition, Cooperation & Complexity: Using Evolutionary Game Theory to model realistic populations, Prague, Czech Republic
- 2018 **Talk: *Plant coexistence under adaptive exploitation and mutualism***, Conflict, Competition, Cooperation & Complexity: Using Evolutionary Game Theory to model realistic populations, Torino, Italy
- 2024 **Talk: *A model for plant-pollinator interaction with separation of pollen and nectar dynamics***, Mathematical Models in Ecology and Evolution 2024, Vienna, Austria

Other activities

Peer reviewer *The American Naturalist, Journal of Theoretical Biology, Theoretical Ecology, Theoretical Population Biology, Oikos, Journal of Biological Dynamics, Marine Ecology Progress Series, Journal of Mathematical Biology, Ecological Modelling, Applied Mathematical Modelling, Mathematical Biosciences, Biosystems, New Phytologist* and *Axios Review*.

Skills

Languages Spanish (native), English (advanced)
Computing GNU/Linux, Unix. Matlab, Octave, R. \LaTeX /LyX & HTML
Other Mathematical modelling, numerical analysis, statistics, teaching

Personal references

Dr. Franz J. **Professor**, *University of Groningen*, Groningen, The Netherlands
Wessing <https://www.rug.nl/staff/f.j.weissing>

Dr. Rampal S. **Professor**, *University of Groningen*, Groningen, The Netherlands
Etienne <https://www.rug.nl/staff/r.s.etienne>

Dr. Michel Loreau **Professor**, *Station d'Ecologie Expérimentale du CNRS*, Moulis, France
<https://sete-moulis-cnrs.fr/fr/recherches/ctmb/equipe/item/179-loreau-michel>

Dr. Vlastimil **Professor**, *Czech Academy of Sciences*, České Budějovice, Czech Republic
Křivan <http://mathbio.prf.jcu.cz/en/krivan/>