

Rubén González Miguélez

Evolutionary Systems Virology Group (Lab 2.01)

Institute of Integrative Systems Biology

St/ Catedràtic Agustín Escardino Benlloch, 9.

Paterna, Spain. 46980

ruben.gonzalez@csic.es

Curriculum vitae

Updated: February 2021

EDUCATION

Ph.D. Biotechnology

04/2017 – ongoing.

Polytechnic University of Valencia (Valencia, Spain)

Research Advisor: Santiago F. Elena

> Short-term visit

01/2021 – 04/2021.

Institut de Biologie de l'École Normale Supérieure (Paris, France).

Research Advisor: Prof. Santiago F. Elena

M.S. Plant Molecular and Cellular Biotechnology

09/2015 – 01/2017.

Polytechnic University of Valencia (Valencia, Spain)

Research Advisor: Marie-Anne Félix

B.S. Biology

09/2011 – 07/2015.

University of Vigo (Vigo, Spain)

> Erasmus +

09/2014 – 01/2015.

University of Coimbra (Coimbra, Portugal)

EXPERIENCE

Predoctoral researcher

Institute for Integrative Systems Biology (Paterna, Spain) 09/2018 - present

Institute for Plant Molecular and Cell Biology (Valencia, Spain) 04/2017 - 09/2018

-Supervisor: Prof. Santiago F. Elena.

Research Internship

05/2016 - 12/2016

Biopolis S.L. (Valencia, Spain)

-Supervisor: Prof. Daniel Ramón.

Department research assistant

01/2015 - 07/2015

University of Vigo (Vigo, Spain)

-Supervisor: Dr. Josefina Garrido.

Volunteer Research Assistant

06/2013 - 07/2013

University of Vigo (Vigo, Spain)

- Supervisor: Prof. Emilio Rolán.

FUNDING AND AWARDS

2020 Best Student paper published in Genome Biology and Evolution 2019 Awards.
Honourable mention (500€) .

2020-21 AAAS/Science Program for Excellence in Science. Full membership in AAAS for one year.

2020 EMBO Short-Term Fellowship (4450€).

2020 Fisabio-Valencia University Chair for financing research stays in Europe (4.000€).

2017-21 Research Personnel Training (FPI) grant (BES-2016-077078). MINECO-FEDER (92.750€).

2015 Department collaboration grant (BOE-A-2015-700). MINECO-FEDER (2.000€).

2014 Xunta de Galicia's ERASMUS+ Complement (1.100€).

2014 European Commission's ERASMUS+ Fellowship (1.700€).

PUBLICATIONS

Preprints

1. Butković, A.; **González, R.**; Rivarez, M.P.S.; Elena, S.F.# (2020)

Arabidopsis thaliana genes contributing to differences in the outcome of infection with generalist and specialist strains of Turnip mosaic virus identified by genome-wide association studies. bioRxiv.

Refereed Journals

1. **González, R.**; Butković, A.; Escaray, F.; Martínez-Latorre, J.; Melero, I.; Pérez-Parets, E.; Gómez-Cadenas, A.; Carrasco, P.; Elena, S.F.# (2021)

Plant virus evolution under strong drought conditions results in a transition from parasitism to mutualism.

Proceedings of the National Academy of Sciences of the United States of America. 118, e2020990118. <https://doi.org/10.1073/pnas.2020990118>

2. Butkovic, A.; **González, R.**; Elena, S.F#. (2021)

Revisiting *Orthospovirus* phylogeny using full-genome data and testing the contribution of selection, recombination and segments reassortment in the origin of new species.

Archives of Virology. 166, 491–499. <https://doi.org/10.1007/s00705-020-04902-1>

3. **González, R.#**; Butković, A.; Selda Rivarez, M.P.; Elena, S.F. (2020)

Natural variation in *Arabidopsis thaliana* rosette area unveils new genes involved in plant development

Scientific Reports, 10,17600. <https://doi.org/10.1038/s41598-020-74723-4>

4. Butkovic, A.; **González, R.**; Cobo, I.; Elena, S.F.# (2020)
Adaptation of turnip mosaic potyvirus to a specific niche reduces its genetic and environmental robustness
Virus Evolution, 6: veaa041 <https://doi.org/10.1093/ve/veaa041>

5. **González, R.**; Butković, A.; Elena, S.F. # (2019)
Role of host genetic diversity for susceptibility-to-infection in the evolution of virulence of a plant virus”
Virus Evolution, 5: vez024. <https://doi.org/10.1093/ve/vez024>

6. **González, R.***; Wu, B.*; Li, X.*; Martínez, F.#; Elena, S.F.# (2019)
Mutagenesis scanning uncovers evolutionary constraints on tobacco etch potyvirus membrane-associated 6K2 protein
Genome Biology and Evolution, 11: 1207–1222. <https://doi.org/10.1093/gbe/evz069>

7. Rolán-Alvarez#, E.; Carvajal-Rodríguez, A.; de Coo, A.; Cortés, B.; Estévez, D.; Ferreira, M.; **González, R.**; Briscoe, A.D. (2015)
The scale-of-choice effect and how estimates of assortative mating in the wild can be biased due to heterogeneous samples”
Evolution, 69: 1845–1857. <https://doi.org/10.1111/evo.12691>

Book Chapters

1. **González, R.*#**; Butković, A.*; Elena, S.F.# (2020)
From foes to friends: viral infections expand the limits of host phenotypic plasticity”.
Advances in Virus Research, 106: 85-121. <https://doi.org/10.1016/bs.aivir.2020.01.003>

* co-authorship # corresponding

Contributed Presentations

> Worm-Virus meeting (Virtual)

Setting up *C. elegans* as a host model system for experimental virus evolution, experimental epidemiology and systems virology

Elena, S.F.; **González, R.** (2020)

> Wellcome Genome Campus 3rd meeting on Evolutionary Systems Biology (Hixton, UK)

Mapping *Arabidopsis thaliana* genes involved in plant response to a turnip mosaic potyvirus (TuMV) infection.

Butković, A.; **González, R.**; Elena, S.F. (2020)

> Experimental Evolution Workshop (Biar, Spain)

Evolving towards mutualism: an experimental study on the virus-host interactions changes induced by the environment

González, R.; Butković, A.; Martínez-Latorre, J.; Melero, I.; Pérez-Parets, E.; de la Iglesia, F.; Elena, S.F. (2019)

> Conférences Jacques-Monod (Roscoff, France)

Environmental stress shapes the evolution of a potyvirus towards a mutualistic relationship with its host

González, R.; Butković, A.; Martínez-Latorre, J.; Melero, I.; de la Iglesia, F.; Elena, S.F. (2019)

> XXles Journées Francophones de Virologie (Lyon, France)

Evolution of virulence of an emerging RNA virus in homogeneous vs heterogenous plant populations

González, R.; de la Iglesia, F.; Butković, A.; Elena, S.F. (2019)

> International Plant Virus Epidemiology Symposium (Seul, South Korea)

Variability in resistance genes conditions the evolution of emerging plant RNA viruses

Elena, S.F.; Martínez, F.; Ambrós, S.; Butković, A.; Carrasco, J.L.; de la Iglesia, F.; **González, R.**; Navarro, R. (2019)

> XIII Reunión de Biología Vegetal (Puerto Varas, Chile)

Host variability in resistance genes conditions the evolution of emerging plant RNA virus

Elena, S.F.; Martínez, F.; Ambrós, S.; Butković, A.; Carrasco, J.L.; de la Iglesia, F.; **González, R.**; Navarro, R. (2018)

>24th European Meeting of PhD Students in Evolutionary Biology (Bubiión, España)
Evolution of RNA viruses in hosts with variable susceptibility

González, R.; Elena, S.F. (2018)

> VI Spanish Worm Meeting (Valencia, Spain)

Evaluation of *Caenorhabditis elegans* as experimental host for a thrip-transmitted plant RNA virus

González, R.; Martorell, P.; Ramón, D.; Elena, S.F.; Ambrós, S. (2017)

Poster presentation

> Wellcome Genome Campus 3rd meeting on Evolutionary Systems Biology (Hixton, UK)

Virus evolution in the pathosystem turnip mosaic potyvirus – *Arabidopsis thaliana* under drought conditions selects for viruses who enhance the host tolerance to water deficiency

González, R.; Butković, A.; Martínez-Latorre, J.; Melero, I.; Pérez-Parets, E.; de la Iglesia, F.; Elena, S.F. (2020)

> Wellcome Genome Campus 3rd meeting on Evolutionary Systems Biology (Hixton, UK)

Genome-wide association studies (GWAS) to identify genes involved in differential response of *Arabidopsis thaliana* to infection with generalist and specialist strains of a potyvirus.

Butković, A.; **González, R.**, Rivarez P.; de la Iglesia F.; Elena, S.F. (2020)

>10th Workshop in Virus Evolution (State College Pennsylvania, USA)

Evolving in drought conditions: consequences in the interaction between a potyvirus and *Arabidopsis thaliana*

González, R.; Butković, A.; Martínez, J.; Melero, I.; Elena, S.F. (2019)

> Iberian Congress of Entomology (Lisbon, Portugal)

Variación de las comunidades de insectos en el río Fragoso (Ourense, NO España) en relación con el impacto de las minicentrales: 2001-2015

Álvarez-Troncoso, R.; Fernández, F.; **González, R.**; Miguez, C.; Garrido, J. (2016)

Attendee

2020 Wellcome Genome Campus Single Cell Biology (Virtual conference)

Memberships

SEV	Spanish Society for Virology	since May 2018
SMBE	Society for Molecular Biology and Evolution	since July 2019
ESEB	European Society for Evolutionary Biology	since November 2019
AAAS	American Association for the Advancement of Science	since January 2020