

Susy Echeverría-Londoño, PhD

Environmental and Public Health

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Susy Echeverría-Londoño

PROFESSIONAL EXPERIENCE

2023–present **Full-time parenting.**

2021–2022 **Public Health Research Consultant**, *Vaccine Impact Modelling Consortium (VIMC)*, Department of Infectious Disease Epidemiology, Imperial College London, UK.

PI: Prof. Neil M. Ferguson. Line manager: Dr Katy Gaythorpe.

Explored the subnational heterogeneity of the impact of routine vaccination in Africa, and estimated the vaccine impact across twelve vaccine-preventable diseases in 112 countries.

2019–2021 **Public Health Research Associate**, *Vaccine Impact Modelling Consortium (VIMC)*, Department of Infectious Disease Epidemiology, Imperial College London, UK.

PI: Prof. Neil M. Ferguson. Line manager: Dr Katy Gaythorpe.

Generated disease burden and vaccine impact estimates across twelve vaccine-preventable diseases in 112 countries.

2018–2019 **Biodiversity Visiting Scholar**, *University of Pittsburgh, Biological Sciences*, USA.

PI: Dr. Justin Kitzes.

Predicted extinction risks of 300 plant species by exploring and analyzing their time-series spatial point patterns.

2017–2019 **NSF Biodiversity Postdoctoral Associate**, *Kenyon College, Biology*, USA.

PI: Prof. Andrew Kerkhoff and Prof. Brian J. Enquist.

Studied the effects of habitat stability on current patterns of plant diversity using the distribution and phylogenetic relations of approximately 24000 plant species.

2013–2017 **Lecturer & demonstrator**, *Natural History Museum & Imperial College London*, UK.

Lectured and demonstrated for several quantitative courses in the Taxonomy and Biodiversity MSc and Life Sciences BSc programmes.

EDUCATION

2013–2017 **PhD in Life Science**, *Imperial College London, Natural History Museum*, UK.

Thesis: Diversification patterns of *Solanum* L. (Solanaceae), plant macroecology and biodiversity responses to land-use change.

Supervisor: Prof. Andy Purvis. Co-supervisor Dr Sandra Knapp.

2012–2013 **MRes in Biodiversity, Informatics, Genomics** (distinction), *Imperial College London*, UK.

2004–2010 **BSc in Biology** (1st-class honors), *Universidad Industrial de Santander*, Colombia.

COMPUTER SKILLS

Programming **R** (advanced, 10-year experience)

Python (intermediate, 2-year)

C++, **shell**, **HPC cluster scripts** (basic, 1-year)

Data science **Cleaning, processing, visualisation, statistical analysis** (advanced, 10-year)

GIS in R, **ArcGIS** (intermediate, 4-year)

Version ctrl **Git** OS **Linux/Unix**, **OS X**, **Windows** Typography **LaTeX**, **Office**

LANGUAGES

Spanish Native

English Full professional

French, Italian Intermediate, B1

PUBLICATIONS

- 2023 Hartner, A. M., Li, X., **Echeverría-Londoño, S.**, Roth, J., Abbas, K., Auzenberg, M., ... & Gaythorpe, K. COVID-19 Related Immunisation Disruptions from 2020-2030: Projecting Health Impact and Mitigation Strategies for 14 Pathogens Across 112 Low- and Middle-Income Countries. Available at SSRN: <https://ssrn.com/abstract=4492698> or <http://dx.doi.org/10.2139/ssrn.4492698>
- 2022 Ali, H.A., Hartner, AM., **Echeverría-Londoño, S.**, & et al. Vaccine equity in low and middle-income countries: a systematic review and meta-analysis. *Int J Equity Health* 21, 82. <https://doi.org/10.1186/s12939-022-01678-5>
- 2022 **Echeverría-Londoño, S.**, Hartner, A. M., Li, X., Roth, J., Portnoy, A., Sbarra, A. N., ... & Gaythorpe, K. A. Exploring the subnational inequality and heterogeneity of the impact of routine measles immunisation in Africa. *Vaccine*, 40(47), 6806-6817. <https://doi.org/10.1016/j.vaccine.2022.09.049>
- 2022 Toor, J., Li, X., Jit, M., Trotter, C. L., **Echeverría-Londoño, S.**, Hartner, A. M., ... & Gaythorpe, K. A. COVID-19 impact on routine immunisations for vaccine-preventable diseases: Projecting the effect of different routes to recovery. *Vaccine*, 40(31), 4142-4149. <https://doi.org/10.1016/j.vaccine.2022.05.074>
- 2022 Ali, H.A., Hartner, AM., **Echeverría-Londoño, S.**, et al. Vaccine equity in low and middle-income countries: a systematic review and meta-analysis. *Int J Equity Health* 21, 82. <https://doi.org/10.1186/s12939-022-01678-5>
- 2021 **Echeverría-Londoño, S.**, Li, X., Toor, J., de-Villiers, M., Nayagam, S., Hallett, T.B., Abbas, K., Jit, M., Klepac, P., Jean, K. & Garske, T. How can the public health impact of vaccination be estimated? *BMC Public Health*, 21, 2049 (2021). <https://doi.org/10.1186/s12889-021-12040-9>
- 2021 Toor, J., **Echeverría-Londoño, S.**, Li, X., Abbas, K., Carter, E. D., Clapham, H. E., ... & Gaythorpe, K. A. Lives saved with vaccination for 10 pathogens across 112 countries in a pre-COVID-19 world, *eLife* 10, e67635. <https://doi.org/10.7554/eLife.67635>
- 2021 Gaythorpe, K. A., Toor, J., **Echeverría-Londoño, S.**, Li, X., & Ferguson, N. M. Vaccines can save children with non-preventable diseases Authors' reply. Estimating the health impact of vaccination against ten pathogens in 98 low-income and middle-income countries from 2000 to 2030: a modelling study, *The Lancet* 397(10291), 2251. [https://doi.org/10.1016/S0140-6736\(21\)01015-1](https://doi.org/10.1016/S0140-6736(21)01015-1)
- 2021 Li, X., Mukandavire, C., Cucunubá, Z. M., **Echeverría-Londoño, S.**, Abbas, K., Clapham, H. E., ... & et al. Estimating the health impact of vaccination against ten pathogens in 98 low-income and middle-income countries from 2000 to 2030: a modelling study, *The Lancet*, 397(10272), 398-408. [https://doi.org/10.1016/S0140-6736\(20\)32657-X](https://doi.org/10.1016/S0140-6736(20)32657-X)
- 2021 Gaythorpe K, Abbas K, Huber J, Karachaliou A, Thakkar N, Woodruff K, Li X, **Echeverría-Londoño, S.**, Ferrari M, Jackson ML, McCarthy K. Impact of COVID-19-related disruptions to measles, meningococcal A, and yellow fever vaccination in 10 countries, *eLife*, 2021;10:e67023. <https://doi.org/10.7554/elife.67023>
- 2021 Neves, D.M., Kerkhoff, A.J., **Echeverría-Londoño, S.**, Merow, C., Morueta-Holme, N., Peet, R.K., Sandel, B., Svenning, J.C., Wiser, S.K. and Enquist, B.J. The adaptive challenge of extreme conditions shapes evolutionary diversity of plant assemblages at continental scales, *Proceedings of the National Academy of Sciences* 118(37). <https://doi.org/10.1073/pnas.202113211>
- 2020 Laiton-Donato, K., Villabona-Arenas, CJ., Usme-Ciro, J., Franco-Muñoz., C, Álvarez-Díaz, D., Villabona-Arenas, LS., **Echeverría-Londoño, S.**, et al., Genomic epidemiology of severe acute respiratory syndrome coronavirus 2, Colombia, *Emerging infectious diseases*, 26, no. 12: 2854. <https://doi.org/10.3201/eid2612.202969>
- 2020 **Echeverría-Londoño, S.**, Särkinen, T., Fenton, I. S., Knapp, S. and Purvis, A. Dynamism and context dependency in the diversification of the megadiverse plant genus *Solanum* L. (Solanaceae), *Journal of Systematics and Evolution*, 58(6), 767-782. <https://doi.org/10.1111/jse.12638>

- 2018 **Echeverría-Londoño, S.**, Enquist, B. J., Neves, D. M., Violle, C. and Kerkhoff, A. J. Plant functional diversity and the biogeography of biomes in North and South America. *Frontiers in Ecology and Evolution*, 6(DEC), 219. <https://doi.org/10.3389/fevo.2018.00219>
- 2017 Isaacs, P., **Echeverría-Londoño, S.**, Urbina, N. and Purvis, A. Species composition and changes in land use: considerations under climatic change scenarios. Moreno, L. A., Andrade, G. I. and Ruíz-Contreras, L. F. (Editors). In *Biodiversity 2016. Status and Trends of Colombian Continental Biodiversity*, Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 106 p. <http://reporte.humboldt.org.co/biodiversity/2016/cap2/203/index.html>
- 2017 Hudson, L. N., Newbold, T., Contu, S., Hill, S. L., Lysenko, I., De Palma, A., Diaz, S., **Echeverría-Londoño, S.**, ... and Purvis, A. The database of the PREDICTS (Projecting Responses of Ecological Diversity in Changing Terrestrial Systems) project, *Ecology and Evolution*, 7(1), 145–188. <https://doi.org/10.1002/ece3.2579>
- 2016 **Echeverría-Londoño, S.**, Newbold, T., Hudson, L. N., Hill, S. L., Contu, S., Lysenko, I., ... and Purvis, A. Modelling and projecting the response of Colombian biodiversity to land-use change, *Diversity and Distributions*, 22, 1099–1111. <https://doi.org/10.1111/ddi.12478>
- 2015 Newbold, T., Hudson, L. N., Hill, S. L., Contu, S., Lysenko, I., Senior, R. A., Bennet D. J., Choimes A., Collen, B., Day, J., De Palma, A., Diaz, S., **Echeverría-Londoño, S.**, ... and Purvis, A. Global effects of land use on local terrestrial biodiversity, *Nature*, 520(7545), 45–50. <https://doi.org/10.1038/nature14324>
- 2014 Newbold, T., Hudson, L. N., Contu, S., Hill, S. L., Lysenko, I., De Palma, A., Phillips, H., Senior, R. A., Bennet D. J., Booth, H., Choimes, A., Correia, D. L. P., Day, J., **Echeverría-Londoño, S.**, ... and Purvis, A. The PREDICTS database: a global database of how local terrestrial biodiversity responds to human impacts, *Ecology and Evolution*, 4(24), 4701–4735. <https://doi.org/10.1002/ece3.1303>
- 2011 **Echeverría-Londoño, S.** and Miranda-Esquivel, D. R. MartiTracks: A geometrical approach for identifying geographical patterns of distribution, *PLoS ONE*, 6(4), e18460. <https://doi.org/10.1371/journal.pone.0018460>
- 2010 Miranda-Esquivel, D. R., Morales-Guerrero, A. M. and **Echeverría-Londoño, S.** ¿Cuántos somos? y ¿Cómo nos cuantificamos? In *Evolución “Historia de la Vida”*. Asociación Colombiana para el avance de la Ciencia ACAC. ISBN: 978-958-9457-67-2

PRESENTATIONS AND POSTERS

- 2021 **Poster.** Echeverría-Londoño, S., et al. Exploring the effect of spatial heterogeneity of immunisation in vaccine impact in Sub-Saharan Africa. *EPIDEMICS, 8th International Conference on Infectious Diseases Dynamics*, Online Live and On-Demand
- 2018 **Presentation.** Echeverría-Londoño, S., et al. Explosive diversification of *Solanum* L (Solanaceae) in the old world, *Three Rivers Evolution meeting*, Pittsburgh, USA.
- 2018 **Poster.** Echeverría-Londoño, S., et al. Plant functional diversity and the biogeography of biomes in North and South America, *Three Rivers Evolution meeting*, Pittsburgh, USA.
- 2018 **Poster.** Echeverría-Londoño, S., et al. Plant functional diversity and the biogeography of biomes in North and South America, *Botany 2018*, Rochester (MN), USA
- 2016 **VVIP presentation.** Echeverría-Londoño, S., et al. Modelling and projecting the response of Colombian biodiversity to land-use change, *State visit by the President of Colombia, Juan Manuel Santos, to the UK and the Prince of Wales*, Natural History Museum, London, UK
- 2016 **Presentation.** Echeverría-Londoño, S., et al. Modelling and projecting the response of Colombian biodiversity to land-use change, *First symposium of Colombian research in the UK*, Imperial College London, UK.
- 2016 **Presentation.** Echeverría-Londoño, S., Knapp, S. and Purvis, A. Explosive diversification of *Solanum* L (Solanaceae) in the old world, *BES macroecology meeting 2016*, University of Oxford, UK.

- 2016 **Presentation.** Echeverría-Londoño, S., Knapp, S. and Purvis, A. Diversification patterns of genus *Solanum*, *NHM students conference*, Natural History Museum, London, UK.
- 2015 **Poster.** Echeverría-Londoño, S., Knapp, S. and Purvis, A. Explosive diversification of *Solanum* L (Solanaceae) in the old world, *Systematics: The Science that Underpins Biology. The Systematic Association Biennial meeting*, University of Oxford, UK.
- 2015 **Presentation.** Echeverría-Londoño, S., Knapp, S. and Purvis, A. Explosive diversification of *Solanum* L (Solanaceae) in the old world, *EU Macroecology meeting*, Zoological museum of Copenhagen, Denmark.
- 2015 **Poster.** Echeverría-Londoño, S., Knapp, S. and Purvis, A. Diversification patterns of *Solanum*, *NHM students conference 2015*, Natural History Museum, London, UK.
- 2014 **Poster.** Echeverría-Londoño, S., Knapp, S. and Purvis, A. Diversification patterns of *Solanum*, *The London Evolutionary Research Network (LERN)*, Queen Mary University, London, UK.
- 2014 **Poster.** Echeverría-Londoño, S., Knapp, S. and Purvis, A. Patterns of lineage diversification in the genus *Solanum* L., *Plants Radiation meeting*, Institute of Systematic Botany, University of Zürich, Switzerland.
- 2013 **Presentation.** Echeverría-Londoño, S., et al. Modelling and projecting the responses of Colombian biodiversity to human impacts, *11th INTECOL conference*, London, UK.
- 2010 **Presentation.** Echeverría-Londoño, S. and Miranda-Esquivel, D. M. Panbiogeografía cuantitativa: un acercamiento geométrico, *III Congreso Colombiano de Zoología*, Medellín, Colombia.
- 2009 **Presentation.** Miranda-Esquivel, D. M., Echeverría-Londoño, S. and Morales-Guerrero, A. M. Todas las secuencias son iguales, pero unas son mas iguales que otras, *III Simposio red colombiana de Biología Evolutiva (Colevol)*, Cali, Colombia.

INVITED SEMINARS

- 2021 Laboratoire Modélisation, Épidémiologie et Surveillance du Risque Sanitaire (MESuRS) seminars, *Conservatoire National des Arts et Métiers , CNAM*
- 2021 School of Public Health seminars, *Imperial College London*, UK.
- 2018 Ecology and Evolution seminars, *University of Pittsburgh, Biological Sciences*, USA.
- 2017 Monthly seminars, *Department of Biology, Kenyon College*, Gambier, USA.
- 2017 Ecosystems and Tropical Forest group lab seminar, *School of Geography and the Environment, University of Oxford*, UK.
- 2015 Ecology and Evolution seminar, *Royal Botanic Garden*, Edinburgh, UK.

SCHOLARSHIPS, AWARDS AND RECOGNITIONS

- 2022 Journal of Systematics and Evolution Outstanding Paper by Young Investigators Award 2020.
- 2018 NSF grant fund, \$72,361, “RCN-UBE Incubator: The Biological and Environmental Data Education Network”, *NSF*.
- 2016 Selected to present research to the (Nobel Peace Prize winning) President of Colombia and His Royal Highness the Prince of Wales, *Natural History Museum*.
- 2013 Training and travel grant, £300, *British Ecology Society*.
- 2013 Bursary, £1,000, MRes in Biodiversity Informatics and Genomics, *Imperial College London*.
- 2012–2016 Postgraduate scholarship, £122,000, *Administrative Department of Science, Technology and Innovation of Colombia (Colciencias)*.
- 2004–2009 Academic stimuli, biology program (highest GPA in I, II, IV, IX semesters), *Universidad Industrial de Santander*.

REFERENCES

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