Rodrigo Dorantes-Gilardi

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Work Experience

Associate Research Scientist 2025–Present
Northeastern University

Part-time Lecturer 2021–Present
Northeastern University

Postdoctoral Fellow 2021–2025
Northeastern University

Postdoctoral Fellow 2020–2021
Colegio de México

Postdoctoral Fellow 2019–2020
Instituto Nacional de Medicina Genómica

Data Scientist 2018–2019
Telcel

Education

PhD Applied Mathematics 2014–2018
Complex Systems Institute, ENS-Lyon & Université de Grenoble, France
Thesis: "Bio-mathematical aspects of the plasticity of protein folding"

MS Applied Mathematics 2012–2014
Universidad Autónoma de San Luis Potosí, Mexico

BS Economics 2008–2012
Université de Toulouse 1 Capitole, France

Publications

Peer-Reviewed Articles

[1] Liu Y, **Dorantes-Gilardi R**, Han L, Barabási AL (2025). The effect of high-impact venues on career development. *Nature (In Review)*.

[2] Liu Y, Elekes A, Lu J, **Dorantes-Gilardi R**, Barabási AL (2025). Unequal Scientific Recognition in the Age of LLMs. *EMNLP 2025*.

[3] Aldana A, Sebek M, Ispirova G, **Dorantes-Gilardi R**, et al. (2025). NetMedPy: A Python package for Large-Scale Network Medicine Screening. *Bioinformatics*.

[4] **Dorantes-Gilardi R**, Ivey K, Costa L, Matty R, Cho K, Gaziano JM, Barabási AL (2025). Quantifying the impact of biobanks and cohort studies. *PNAS*.

[5] **Dorantes-Gilardi R**, Terrazas-Santamaría D, Ramirez-Álvarez A (2023). Is there a differentiated gender effect of collaboration with super-cited authors? Evidence from early-career economists. *Scientometrics*.

[6] **Dorantes-Gilardi R**, Terrazas-Santamaría D, Ramirez-Álvarez A (2022). The role of highly intercited papers on scientific impact: the Mexican case. *Applied Network Science*.

[7] Sotomayor-Vivas C, Hernández-Lemus E, **Dorantes-Gilardi R** (2022). Linking protein structural and functional change to mutation using amino acid networks. *PLOS One*.

[8] Ye W, **Dorantes-Gilardi R**, Xiang Z, Aron L (2021). COVID-19 Twitter Communication of Major Societal Stakeholders: Health Institutions, the Government, and the News Media. *International Journal of Communication*.

[9] Pacini L, **Dorantes-Gilardi R**, Vuillon L, Lesieur C (2021). Mapping Function from Dynamics: Future Challenges for Network-Based Models of Protein Structures. *Frontiers in Molecular Biosciences*.

[10] **Dorantes-Gilardi R**, García-Cortés D, Hernandez-Lemus E, Espinal-Enríquez J (2021). Genes in the k-core underpin functional features of breast cancer. *Scientific Reports*.

[11] **Dorantes-Gilardi R**, García-Cortés D, Hernández-Ramos H, Espinal-Enríquez J (2020). Eight years of homicide evolution in Monterrey, Mexico: a network approach. *Scientific Reports*.

[12] **Dorantes-Gilardi R**, García-Cortés D, Hernandez-Lemus E, Espinal-Enríquez J (2020). Multilayer approach reveals organizational principles disrupted in breast cancer co-expression networks. *Applied Network Science*.

[13] **Dorantes-Gilardi R**, Bourgeat L, Vuillon L, Lesieur C (2018). In proteins, the structural responses of a position to mutation rely on the Goldilocks principle: not too many links, not too few. *Phys. Chem. Chem. Phys.*.

[14] Achoch M, **Dorantes-Gilardi R**, Wymant C, Feverati G, Salamatian K, Vuillon L, Lesieur C (2016). Protein structural robustness to mutations: an in silico investigation. *Phys. Chem. Chem. Phys.*.

Conference Proceedings

Liu Y, Elekes A, Lu J, **Dorantes-Gilardi R**, Barabási AL (2025). Unequal Scientific Recognition in the Age of LLMs. *EMNLP 2025*.

Dorantes-Gilardi R, Vuillon L, Lesieur C (2017). Perturbation of amino acid networks: A statistical study of the defects introduced in proteins by mutations. *6th International Conference on Complex Networks and Their Applications*.

Book

Ortega RY, Nieto F, **Dorantes Gilardi R**, Sotomayor CI (2022). Strategic Polarization in Social Media. *El Colegio de Mexico AC*.

Teaching Experience

Northeastern University 2021–Present
- CNET5050: Fundamentals of Complex Networks (Graduate, Fall 2025)
- PHYS5116/NETS5116: Network Science 1 (Graduate/Undergraduate, Fall 2021–2025)

El Colegio de México 2020–2021
- Network Science (Graduate, Spring 2021)
- Mathematics 1 (Undergraduate, Fall 2020)

Contributed Research Grants

Inspirational Cohorts and the Science of Purpose 2025–2028
$1,818,030 — Templeton Foundation — Project #63562
PI: Albert-László Barabási — Role: Wrote grant and Project Lead

Evaluating the Impact of Biomedical Tools and Methods 2024–2028
$995,572 — NIH NIGMS — Project #1R01GM158813-01
PI: Albert-László Barabási — Role: Wrote grant and Project Lead

Awards & Honors

Sistema Nacional de Investigadores (Mexico) 2022–Present
Level 1 – Area 1: Interdisciplinary and Applied Mathematics

Sistema Nacional de Investigadores (Mexico) 2020–2022
Candidate – Area 1: Interdisciplinary and Applied Mathematics

Selected Talks & Presentations

NSW Health Statewide Biobank Seminar (Aug 2025) Camperdown, Australia (virtual)
Quantifying the Impact of Biobanks and Cohort Studies

ICSSI 2024 (Jul 2024) National Academy of Sciences, Washington DC
Evaluating the Impact of Biomedical Tools and Methods

NetSci-X 2023 (Feb 2023) Buenos Aires, Argentina
Quantifying biobank impact

Complex Networks 2022 (Nov 2022) Palermo, Italy
Quantifying biobank impact

ICSSI 2022 (Jun 2022) National Academy of Sciences, Washington DC
Quantifying biobank impact

Professional Service

Grant Reviewer & Panelist: NSF (Science of Science, Human Networks & Data Science) 2023–2025
Journal Reviewer: Nature Communications, PNAS, npj Systems Biology, Bioinformatics Advances, PLOS One 2019–2025

Skills

Programming	Python (Advanced), SQL (Advanced: Google BigQuery), R, Bash, HTML/CSS, Git
Software Contribution	NetMedPy, networkx, biographs, biopython
Languages	Spanish (Native), English (Fluent/C2), French (Fluent/C1)