Monica Garcia Solache, M.D., Ph.D.

Senior Scientist - Infectious Diseases

Passionate About Advancing Research to Combat Global Health Threats, with a Focus on Infectious Diseases and Antimicrobial Resistance (AMR)

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Professional Summary

Experienced researcher and project leader with over 10 years of expertise in infectious diseases, bacteriology and antibiotic resistance (AMR). Proven success in driving large-scale, multi-partner research projects, securing funding, and fostering collaborations to advance public health. Skilled in identifying and capitalizing on emerging trends in biomedical research, with a particular focus on discovery and development of potential drug targets for infectious diseases. Fluent in English and Spanish, and basic French.

Professional Experience

Distinguished Professor (Hybrid)   *2023 - Present*

Universidad Carlos III de Madrid - Department of Biomedicine

- Awarded the prestigious Maria Zambrano Talent Attraction Fellowship, recognizing excellence in scientific research and leadership (2023-2024)
- Leading innovative epidemiological studies on antimicrobial resistance (AMR), leveraging real-world data to inform global health interventions and policy strategies
- Identifying cutting-edge scientific developments and fostering collaborations with international stakeholders to advance infectious disease research, particularly in the context of AMR and infectious disease prevention

- Contributing to the development of public health strategies through data-driven insights and research on infectious disease prevention, vaccine efficacy, and novel therapeutic approaches
- ERA4TB (European Regimen Accelerator for Tuberculosis) (started April 2025). Consortium researcher. Experimental design of preclinical trials, both in vitro and in vivo, preclinical studies and dose escalation in humans. Informed predictions of expected drug behavior at clinical level. Specifically, providing advice on aspects related to dosage rationalization and efficacy prediction. Providing advice on the processes and methods for conducting R&D for new drugs. Providing expert advice regarding the therapeutic area of infectious diseases as a whole and the development of antibacterial agents in particular, with special attention to resistant microorganisms and tuberculosis

Assistant Professor of Medicine   *2017 - Present*

Brown University Alpert Medical School - Rhode Island Hospital

- Spearheaded interdisciplinary research initiatives focused on antimicrobial resistance (AMR) among gram-positive pathogens (e.g., enterococci, pneumococci), aligning with the need for new immune-based prophylactic and therapeutic approaches
- Secured funding through impactful grant proposals aimed at advancing research in infectious diseases
- Led cross-functional teams to design and implement large-scale research studies, contributing to actionable insights in the field of AMR
- Conduct preclinical studies and collaborate with international teams to develop new antibacterial candidates, focusing on resistance mechanisms and rationalizing dosing strategies for human trials
- Conduct in vitro and in vivo pharmacology studies
- Published six influential papers, contributing to the global understanding of antimicrobial resistance and advancing the development of new interventions in infectious disease treatment

Postdoctoral Research Fellow - Bacteriology   *2013 - 2017*

Brown University Alpert Medical School

- Developed and validated next-generation sequencing (NGS) assays to explore molecular mechanisms of AMR, in collaboration with epidemiologists and bioinformaticians
- Played a key role in the design and execution of studies that contributed to global efforts in combating AMR, with a strong focus on data-driven, translational science

Post Doctoral Research Fellow – Immunology/Mycology *2010 - 2012*

Albert Einstein College of Medicine

- Led pioneering research on fungal pathogens, integrating immunology and microbiology, to develop new insights into host-pathogen interactions
- Collaborated with interdisciplinary teams to inform therapeutic targets, with an emphasis on translational research

Education

Doctor of Philosophy in Genetics

Darwin College, University of Cambridge, UK

Advisor: Michel Akam FRS

Medical Doctor

School of Medicine, Universidad Nacional Autónoma de México

Grade: 8.96/10 (A)

Enrolled in the High-Performance Program | General Practitioner, Mexican Board Registration: 3568393 | Spanish Board Certification: 0741180/2009/H17124

Master in Biological Sciences - Immunology

School of Sciences, Universidad Nacional Autónoma de México

Grade: 9.56/10 (A+) - Summa cum laude

Core Competencies

Research & Laboratory

Bacteriology & Immunology

Infectious Disease Research

Antibacterial Drug Research

Microbial Resistance Studies

Drug Interaction Studies

Translational Science

Leadership & Management

Research Leadership & Project Management

Cross-Functional Collaboration

Grant & Portfolio Management

Regulatory Compliance & Best Practice Application

Data & Analysis	**Strategic & Communication**

Data & Analysis

Data Analysis & Bioinformatics

R Programming

Python

SPSS

Epi Info

Strategic & Communication

Public Health Strategy & Translational Science

Scientific Communication & Thought Leadership

Global Health Strategy

Entrepreneurial & Strategic Mindset

Key Achievements

- Co-lead a retrospective study on antibiotic-resistant infections, providing actionable insights for public health interventions that will **inform the development of new antibacterial therapies**

- Managed an observational study assessing **vaccine perceptions** across diverse socio-cultural groups, informing healthcare equity initiatives

- Published 15 peer-reviewed articles in **top-tier scientific journals**, with over 1,000 citations (h-index 13), demonstrating thought leadership in **infectious disease research**

- Represented research initiatives at international conferences, serving as a **scientific advisor** to global health agencies and funding bodies

Publications and Affiliations

- 15 Peer-Reviewed Publications, One Book Chapter, One Review Article, and Published Works Cited over 1,000 times (h-index of 13)

- American Society for Microbiology (2010-Current)

- Society for Molecular Biology and Evolution (2012-Current)

Awards & Honors

Maria Zambrano Fellowship
Ministerio de Universidades/UC3M, Spain (2023-2024)

National Researchers System (SNI), National Researcher Level I
National Council for Science and Technology, Mexico (2016-2021)

National Researchers System (SNI) Candidate National Researcher
National Council for Science and Technology, Mexico (2012-2014)

International Postdoctoral Fellowship
National Council for Science and Technology, Mexico (2010-2012)

Relevant Project Experience

- **Retrospective Study on AMR**: Leading a large-scale epidemiological study on antibiotic resistance trends, developing targeted population cohorts and advancing the scientific understanding of AMR dynamics to **inform the development of new antibacterial therapies**
- Experience in in vitro **pharmacodynamic models** using humanized dosing simulations
- **Observational Study on Vaccine Perceptions**: Managed the design and statistical analysis of a study assessing vaccine perceptions across different socio-cultural groups, informing healthcare equity initiatives

Additional Experience

- **Volunteer Physician**, Infectious Disease Ward, Hospital General de Mexico (2017-Current)
- **Editor**, American Microbiology Society Spectrum (2021-Current)
- **Editor**, Frontiers in Microbiology (2023-Current)
- **Reviewer**, United Kingdom Research Initiative UKRI (2024)
- **Reviewer**, National Institutes Health (PCMB Study Section, 2021, SBIR/SBTT Study Section 2023)
- **Reviewer**, Consejo Nacional de Ciencia y Tecnología CONACYT (2020, 2023)
- **Member**, Brown University Committee on Faculty Equity and Diversity CFED (2021-2022)
- **International Course on Antibiotics and Resistance (ICARe)**, Institut Pasteur (Oct 06-14, 2018, Les Pensières, Annecy, France)

Teaching Experience

- 2005-2007. Evolution and Behaviour. 5 hours per year
- 2008-2009. Bacteriology. 6 hours per year
- 2009. Histopathology. 6 hours per year
- 2005-2009. Biology of Cells IA. 40 hours per year

Mentorship:
- Scientific Mentor, serving as a mentor to two postdoctoral scientists. Brown University Medical School. 2019-2024, 2024-Present
- Mentor to one medical student, Summer Research Program. Brown University Medical School. 2019
- Mentor to one undergraduate student, Summer Research Program. Brown University Medical School. 2019
- Undergraduate Research Project Supervisor, end of grade project for an undergraduate student. Universidad Autónoma de Morelos, Mex. 2004

Languages

- **Spanish:** Native
- **English:** Fluent
- **French:** Basic