Curriculum Vitae: Maria Gloria Dominguez Bello

Current Position:
Distinguished Professor, Henry Rutgers Professor of Microbiome and Health
Department of Biochemistry and Microbiology; Department of Anthropology
Rutgers, The State University of New Jersey
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Education

Year	Degree	Field	Institution
1990	PhD	Microbiology	University of Aberdeen, Scotland
1986	MSc	Animal Nutrition	University of Aberdeen, Scotland
1984	BSc	Biology	University Simón Bolívar, Venezuela

Postdoctoral Training

1997-19988 Ramon y Cajal Postdoctoral Fellow, Centro de Biología Molecular Severo Ochoa, University Autonoma of Madrid, Spain.
1993-1994 Post-Doctoral fellow, EU Marie Curie Scholarship, Institute National de la Recherche Agronomique, France, and Rowett Research Institute, Scotland.

Employment

2018-present Henry Rutgers Professor of Microbiome and Health; Professor, Department of Biochemistry and Microbiology; Professor, Department of Anthropology, Rutgers University, New Brunswick, NJ.
2018-2023 Director, New Jersey Institute for Food Nutrition and Health (IFNH), Rutgers University.
2015-2021 Visiting Professor, Gulbenkian Institute, Portugal
2012-2014 Professor, Department of Biology, University of Puerto Rico, Rio Piedras (leave of absence, Aug 2012-July 2014)
2012-2017 Associate Professor, New York University School of Medicine, New York, NY.
2003-2012 Associate Professor, Department of Biology, University of Puerto Rico, Rio Piedras.
2000-2003 Professor Researcher, IVIC, Caracas, Venezuela.
1997-1998 Ramon y Cajal Postdoctoral Fellow, Centro de Biología Molecular Severo Ochoa, Autonomic University of Madrid, Spain (Advisor: Miguel de Pedro)
1993-2000 Associate Professor Researcher, IVIC, Caracas, Venezuela.
1993-1994 Post-Doctoral fellow, EU Marie Curie Scholarship, Institute National de la Recherche Agronomique, France, and Rowett Research Institute, Scotland. (Advisor: Harry Flint and Jean Pierre Jouany)
1990-1993 Resident Researcher, Venezuelan Institute of Scientific Research (IVIC), Caracas, Venezuela.

Other Professional Positions and Visiting Appointments

2020-present Core Faculty Member, Rutgers Global Health Institute.
2019-2021 CIFAR Advisor of Global Scholars.
2019-present Faculty member, Rutgers Cancer Institute of New Jersey.
2018-present President, The Microbiota Vault, Inc.

2018-present	Executive Board Member, Center for Human Evolutionary Studies (CHES), Rutgers University, NJ
2017	Visiting Professor, Rutgers University, New Brunswik.
2016-2019	Visiting Researcher, Department of Anthropology, New York University.
2013-2014	Visiting Researcher, Venezuelan Institute Scientific Research (IVIC), Caracas, Venezuela.
2009	Visiting Professor, University of Cagliari, Sardinia, Italy.
2007-2012, 2023	Adjunct Researcher,Venezuelan Amazonas Center for the Investigation and Control of Tropical Diseases (CAICET)
2002-2012	Adjunct Researcher,Venezuelan Institute of Scientific Research (IVIC)
2000-2001	Visiting Scientist, Duke Marine Laboratory, Duke University, Beaufort NC.
1996	Visiting Scientist, Bailey Hortorium, Cornell University, Ithaca NY.
1991	Visiting Scientist, Department of Animal Sciences, Purdue University,West Lafayette IN.
1990	Visiting Scientist, Institut National de la Recherche Agronomique, Clermont-Ferrand, Theix, France.

Awards and Honors

2024-present	Fellow, American Association for the Advancement of Science (AAAS)
2024	Honoree, Bellevue Literary Press.
2023	American Society for Microbiology (ASM) Outstanding Service Award
2021	Research Excellence Award, Rutgers School of Environmental and Biological Sciences and New Jersey Agricultural Experiment Station.
2019	Fellow, CIFAR program in Humans & the Microbiome
2019	Fellow, Academy of Sciences of Latin America (ACAL)
2015	Arturo Carrion Award, Puerto Rico Society of Microbiology
2013	Fellow, American Academy of Microbiology (AAM).
2008-2011	American Society for Microbiology (ASM) Ambassador for the Central American and Caribbean region.
2008	Fellow, Infectious Diseases Society of America (FIDSA).
2002	Medal of Merit, Venezuelan Institute of Scientific Research, Venezuela.
1997-1998	Spanish Ministry of Education and Science, CSIC postdoctoral fellowship. Center of Molecular Biology Severo Ochoa, University Autonoma of Madrid, Spain.
1993	International Foundation for Science Roi Baudouin Award, Sweden.
1993	EU Marie Curie Fellowship, Rowett Institute-Scotland, INRA Theix, France.
1990-2004	CONICIT Program for Research Promotion, Venezuela.
1990-1991	CONICIT Resident Researcher Fellowship, Venezuela.
1986-1989	Foreign & Commonwealth Office Graduate fellowship. Univ. Aberdeen, Scotland.
1985-1986	British Council Graduate fellowship, Univ. Aberdeen, Scotland.
1985	Gran Mariscal de Ayacucho Foundation Graduate fellowship, Univ Central VZ

Major Research Interests

The human microbiome and impact of urbanization; microbiome development and evolution; microbial ecology.

Research Statement

My research is centered on the development of the microbiome, impact of early life perturbations - practices that reduce microbial transmission, colonization or that disrupt the microbiota- on host phenotypes, and strategies for restoration. Out work also comprises characterizing changes in

lifestyles with urbanization and modern practices that may be stressors of the microbiome. We explore complex biological interactions with an interdisciplinary approach integrating the fields of immunology, pediatrics, nutrition, anthropology, environmental engineering and architecture/urban studies, into microbial ecology, to understand associations between microbes and diseases that have roots in early development.

Personal Statement

I have worked for the last 15 years using evolutionary, trans-geographic, and trans-cultural approaches to the human microbiome. My early research focused on convergent evolution and geographical functional variation of foregut fermentation in animals, from which I started studying the human microbiome from the early days when it was dominated by clinical questions. I focused on studies of the human microbiome across cultures and the effect of medical stressors in early life. My work studying Venezuelan Amerindians also showed evidence of the microbial diversity that is lost in association with urbanization**.** With my Venezuelan colleagues, we were the first to use molecular methods to identify the microbiome alterations in babies born by C-section in a study performed in the Venezuelan Amazon. The results of that seminal study and the growing evidence of the association between developmental stressors and later diseases opened the way to get approval for restoration of C-section-born neonates by vaginal seeding, which led to the ongoing large randomized clinical trials - in the US and in Sweden- aiming to determine health effects. We are currently studying restoration after antibiotics with autologous fecal transplants in babies. I started the Microbiota Vault Initiative in 2018 and is now in its pilot phase, materializing efforts to preserve microbial diversity important to humankind, educating and fostering collaborative research with the global South rich in biodiversity. My research on the human microbiome and urbanization, the effects of perinatal stressors, and infant microbiome restoration has been impactful and potentially paradigm-shifting. My work has contributed toward evidence-based microbial restoration and normalization of the interactions between the developing infant and the microbes that have modulated human physiology for more than 10,000 generations.

Bibliography

Original Reports

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2. Grajal A, Strahl SD, Parra R, Dominguez MG, Neher A. Foregut fermentation in the Hoatzin, a neotropical leaf-eating bird. ***Science,*** **1989.** 245:1236-1238. PMID: 17747887; doi.org/10.1126/science.245.4923.1236
3. Dominguez-Bello MG, Stewart CS. Degradation of 3-(OH)-4(1)H pyridone from the rumen of sheep in Venezuela. ***FEMS Microbial Ecology*****, 1990.** 73:283-290; doi.org/ 10.1111/j.1574-6968.1990.tb03951.x
4. Dominguez-Bello MG, Stewart CS. Effects of feeding *Canavalia ensiformis* on the rumen flora of sheep, and of the toxic amino acid canavanine on rumen bacteria. ***Systematic and Applied Microbiology*****, 1990.** 13:388-393; doi.org/10.1016/S0723-2020(11)80238-9
5. Dominguez-Bello MG, Stewart CS. Characteristics of a rumen Clostridium capable of degrading mimosine, 3 hydroxy 4(1H)pyridine and 2,3 dihydroxypyridone. ***Systematic and Applied Microbiology*****, 1991.** 14:67-71; doi.org/10.1016/S0723-2020(11)80363-2
6. Dominguez-Bello MG, Robinson MD. A comparative study of nutritional adaptations in two Cricetid rodents. ***Physiological Zoology*****, 1991.** 64:1542-1551.
7. Sevcik C, Brito JC, D'Suze G, Mijares AJ, Dominguez MG. Estudio sobre toxinología del Síndrome Parapléjico de los bovinos. ***Acta Científica Venezolana*****, 1993**. 44:131-142. PMID: 8085407

8. Sevcik C, Brito JC, D'Suze G, Domínguez-Bello MG, Lovera M, Mijares AJ, Bónoli S. Toxicology of a bovine paraplegic syndrome. ***Toxicon***, **1993** Dec;31(12):1581-94. PMID: 8146871; doi.org/10.1016/0041-0101(93)90342-g.
9. Dominguez-Bello MG, Lovera M, Suárez P, Michelangeli F. Microbial digestive symbionts of the crop of the hoatzin (*Opisthocomus hoazin*): the only foregut fermenter avian. **Physiological Zoology, 1993.** 66:374-383; www.jstor.org/stable/30163698
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clinical microbiology, 2005: 43(6):2635-2641. PMID: 15956377; doi.org/10.1128/JCM.43.6.2635-2641

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Leters, Editorials, Perspectives

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Invited Chapters

1. Dominguez-Bello MG, Pacheco A. Host-Microbe interactions in the GI tract: influence of indigenous bacteria on the physiology of herbivores. **Proceedings VI International Symposium on the Nutrition of Herbivores**. Editors: L. Mannetje, L. Rámirez-Avilés, C. Sandoval-Castro y J. C. Ku-Vera. pp91-97. ISBN: 970-698-043-1. ISSN:1159-554X, **2003**.
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Citations= 36,9403; **h-index**=58

Current Clinical Trials

- Restoration of Antibiotics-Related Infant Microbiota Perturbations by Autologous Fecal Transplant (NCT06609980; Interventional, non-randomized)
- Vaginal Microbiome Seeding and Health Outcomes in Cesarean-delivered Neonates (NCT03298334; Interventional, Randomized)
- NIH New Jersey ECHO study (Observational)
- New Jersey Kids Study (Observational)

Ongoing Research Support

ACTIVE

NIH/ODNIH 1UG3OD035527-01 (Emily Barrett; MPI: Barrett, Blaser, Horton, Dominguez Bello, Jimenez)
09/01/2023 - 05/31/2030. 1.2 summer
"New Jersey ECHO". $ 11,846,988.00
We will recruit 500 pregnant people and their resulting offspring from Middlesex County, NJ, one of the most diverse counties in the US, into the national ECHO cohort. Our proposed scientific focus is on the early life microbiome and exposure to microbiome-perturbing exposures (cesarean section, infant formula, and medication use) in relation to upper and lower airway health.

F30HD107912 (Lessing) 01/01/2023 – 06/30/2026 2.40 calendar
NIH/NICHD $147,892
Caesarean delivery's effect on the early life microbiome and neurodevelopment
The major goal of this project is to characterize the effect of being born sterile (by C-section) on neurodevelopment and late life phenotypes

Canadian Institute for Advanced Research (Dominguez Bello and Naama Geva-Zatorsky)
CIFAR Research Catalyst Funds- Manulife 11/8/2024-07/30/2026 0.50 calendar
$39,526
Gut microbiome biodiversity and functional plasticity in isolated Amerindians

following medical exposure
This project studies the functional plasticity of the gut microbiome in isolated Amerindians

PAST (last 2 years)

Rutgers Global Institute Dominguez-Bello (PI)
International Collaborative Research grants. 03/01/2024 - 03/1/2025
Wellness through Wisdom: Indigenous Women's Cervical Health Test Training
$8,000
The purpose of this project is to improve access to clinical screening of HPV for indigenous women in Venezuela, who suffer twice the already high national cervical cancer mortality of 47 cases per 100.000 women. This project will educate and prepare facilitators for surveillance in remote villages, building a local health network of female indigenous agents and cultural awareness, supporting HPV vaccination in the region.

New Jersey State Government MG. Dominguez-Bello (Co-PI)
01/1/2021-12/31/2024 0.50 calendar
Title: New Jersey Kids Study-years 1-2 $3,500,000
This project is to follow pregnancy and child development until age 3, taking multiple samples and metadata.

Seerave Foundation (Dominguez Bello) 01/14/2021 – 09/13/2024 0.50 calendar
Microbiota Vault Initiative – Swiss pilot project. $150,000
The major goal of this project is to initiate the first phase of the Microbiota Vault launch in collaboration with Pascale Vonaesh, in Switzerland.

Gebert Rüf Foundation (Dominguez Bello) 02/13/2021 – 09/12/2024 1.00 calendar
Microbiota Vault Initiative. $150,000
The major goal of this project is to initiate the first phase of the Microbiota Vault launch in collaboration with Pascale Vonaesh, Adrian Egli, and Nicholas Bokulish, in Switzerland.

Rockefeller Foundation (Dominguez Bello, MPI) 11/01/2021 - 11/01/2024
$200,000
The Microbiota Vault development of a comprehensive catalog of the world's microbiomes, including from fermented foods, in coordination with the Periodic Table of Food Initiative.
The purpose of this project is to coordinate with the Periodic Table of Food Initiative developing a catalog of fermented foods microbiome; in collaboration with Pascale Vonaesh, Adrian Egli, and Nicholas Bokulish, in Switzerland.

C&D Fund (Dominguez Bello) 05/01/2018 – 04/30/2024 1.00 calendar
The ancestral and the early microbiome. $525,000
The major goals of this project are to determine microbiome-related mechanisms leading to increased risks of immune and metabolic diseases with urban practices, and microbial restoration alternatives.

Emch Fund for Microbiome (Dominguez Bello) 1/1/2019 – 1/1/2024 0.50 calendar
The microbiome of traditional peoples $151,571
The major goals of this project are to determine the functions of the high diversity microbiota, and the lost functions as diversity is reduced with urban practices.

Canadian Institute for Advanced Research (Dominguez Bello)
CIFAR Fellowship Program CAUT20AFP 04/01/2023 – 03/31/2024 0.5.00 calendar
$22,000
Microbiome, development, and effect of urbanization

This project supports studies that address implications of maternal-infant microbiome perturbation on infant development and microbiome alterations associated with urban practices.

Canadian Institute for Advanced Research (Dominguez Bello)
CIFAR Research Catalyst Funds- Manulife 02/1/2022-12/31/2023 0.50 calendar
$39,526
The human breastmilk mycobiome viewed across geography
This project studies the fungal composition of human breast milk samples across the world, in collaboration with CIFAR Humans & the Microbiome program members.

R21AG067400 (Vega) 04/01/2020 – 03/31/2023 2.40 calendar
NIH/NIA $150,000
Brain microbial proteome in normal aging and Alzheimer's disease
The major goal of this project is to uncover the presence of specific bacterial species in normal aging and AD brain and to enhance the mechanistic understanding between dysbiosis and neurodegeneration.

Patents

U.S. Patent 10357521. METHODS FOR RESTORING MICROBIOTA OF NEWBORNS, 2019. July 23rd, 2019. (**Filed:** May 16, 2016. **Assignees:** University of Puerto Rico, New York University. **Inventor:** Maria Gloria Dominguez-Bello**. Abstract:** The invention relates to methods and compositions for restoring normal microbiota in pre-term newborns or newborns delivered by Cesarean section and methods for preventing or ameliorating diseases associated with delivery by Cesarean section or pre-term birth comprising administering to said newborns at the time of birth or shortly thereafter an effective amount of a vaginal microbiota inoculum obtained from the newborn's mother or a donor or an effective amount of a probiotic composition.

U.S. Patent 11,564,667 DEVICE AND METHOD OF RESTORING MICROBIOTA OF NEWBORNS. January 31st, 2023. **Assignees:** New York University. **Inventor:** Maria Gloria Dominguez-Bello**. Abstract:** The invention relates to methods and compositions for restoring normal microbiota in pre-term newborns or newborns delivered by Cesarean section and methods for preventing or ameliorating diseases associated with delivery by Cesarean section or pre-term birth comprising administering to said newborns at the time of birth or shortly thereafter an effective amount of a vaginal microbiota inoculum obtained from the newborn's mother or a donor or an effective amount of a probiotic composition. The invention also relates to a device for collecting maternal vaginal microbiota from the vaginal canal of a patient. The device can have a housing forming a cavity, an absorbent material removable disposed within the cavity, and a deployment element disposed in the housing and movable along a length of the housing. The movement of the deployment element can displace the absorbent material out of the cavity and in to the vaginal canal.

Application Data Sheet 37 CFR 1.76. BIOENGINEERED UREA-SUPPLEMENTED INFANT FORMULA FOR SUPPORT OF EARLY LIFE MICROBIOME. U.S. Provisional Application 63/776,594 on March 24, 2025

Synergistic activities

At Rutgers University

2025	RU Distinguished Professor Appointments and Promotions (A&P) Committee of the School of Environmental and Biological Sciences.
2024	RU Faculty Committee Faculty Compensation Program
2024	RU Faculty Recruitment Committee Dept. Biochemistry and Microbiology

2023- present	Faculty Mentoring Committee - Suchi Hourigan, NIH
2023- present	Faculty Mentoring Committee - Mariana Brewer, Cohen Children's Medical Center
2023- present	Membership and Nominations Committee, Graduate Program in Microbial Biology, Rutgers University.
2022- present	Faculty Mentoring Committee - Dr Shristi Rawal, Department of Clinical and Preventive Nutrition Sciences, School of Health Professions, Rutgers Newark
2021- present	Co-PIs (of three) leaders of the Rutgers University Microbiome Program Initiative (RUMP)
2019- 2025	Faculty Advisor, Baby Friendly Space (BFS) Student Club
2019	Member Promotion Committee School of Environmental and Biological Sciences

Outside Rutgers University

2024-present	Member of the steering committee of the World Microbiome Partnership (WMP).
2023-present	Faculty Mentoring Committee - Dr Mariana R Brewer, Cohen Children's Medical Center-Northwell Health and Researcher at Feinstein Institutes for Medical Research
2022-present	Member of the External Advisory Committee US-Latin American-Caribbean HIV/HPV-Cancer Prevention (ULACNet CAMPO Consortium)
2022	Contributor to the New Jersey Breastfeeding Strategic Plan 2021-2026, New Jersey Department of Health
2021-present	Faculty Mentoring Committee -Dr Suchi Hourigan, NIH Clinical Microbiome Unit (CMU)
2021-present	Organizing Committee, Global Microbiota Network (GloMiNe) Symposia
2020	Dr. Suchitra Hourigan, Advisory committee, NIH K23 award, INOVA Health
2019-2023	Chair, External Advisory Committee for a Center for Biomedical Research Excellence (COBRE), University of Hawaii at Manoa, Hawaii
2019	Panelist, Museum of the Moving Image, Sloan Foundation funded science-Art film: To Dust, on the necrobiome
2018-2024	Member, Research Oversight Committee, Childhood Asthma and the Microbiome-Precision Health for Life: The Canadian Healthy Infant Longitudinal Development (CHILD) Study. University of British Columbia, Vancouver, Canada.
2018-2023	ASM Council on Microbial Sciences (COMS), Division Interdisciplinary Councilor
2018- present	Founder and President, The Microbiota Vault, Inc. (non-profit)
2017	Organizing Committee, National Academies of Sciences, Engineering, and Medicine, Forum on Microbial Threats workshop "Urbanization and Slums: New Pathways of Infectious Diseases in the Built Environment"
2016-2023	American Academy of Microbiology (AAM) Committee on Elections
2016-2018	American Anthropological Association (AAA)
2016-2018	Co-Founder and Scientific Advisory Board Member of CommenSe, Inc., Boston
2015-2017	Member, External Scientific Advisory Committee for NIH U19, U Washington
2014, 2015	National Science Foundation (NSF) Peer Review panel
2014	Scientific Advisory Board, The American Microbiome Institute.
2013-present	Collaborating Faculty, NYU School of Medicine International Health Program (research projects: Latin America)
2013-2018	Reviewer, Institute of Medicine Workshop Reports and Summaries.
2013-2014	Scientific Advisory Board, Human Microbiome Exhibition. EdenProject, Cornwall UK.
2013-present	Reviewer for the Institute of Medicine Workshop Reports and Summaries
2013-2016	AAM - EMD Millipore Alice C. Evans Award Nominations Committee
2013	Human Microbiome Exhibition Advisory Board. EdenProject, UK
2012-present	Collaborator, "American Gut Project", the world's largest open-source, community-driven effort to characterize the microbial diversity of humans
2011-present	International Society for Microbial Ecology (ISME)
2010- 2015	Member, Graduate Scientific Committee at the School of Biology and Biochemistry of Man and the Environment, University of Cagliari, Sardina, Italy

2009-2010	American Society for Microbiology, MicrobeWorld Podcasts, Spanish translation network,
2004-2015	NSF Peer Review panelist
2004-2008	Research Committee, Infectious Disease Society of America (IDSA).
2002	Member of the Jury for the "Francisco de Venanzi" Prize for outstanding research career, Central University (UCV), Venezuela
2000	Expert Referee, Alban Program, European Union.
1999-2002	Member of the Latin American Network for Research in Bioactive Natural Compounds, Argentina
1998-2009	Member, International Advisory Committee, International Symposium on the Nutrition of Herbivores.
1996-2000	Member of the Jury for the “Orinoquia” Research Prize, Venezuela.
1995-97, 99-2000	Member, Directive of the Association of Researchers, IVIC
1995-2000	Member of the Institutional Committee of Human Rights, IVIC
1994-present	Scientific Advisor for the International Foundation for Science (Sweden),
1994-1997	Vice-coordinator, Graduate Studies in Physiology and Biophysics, IVIC 1994-present Scientific Advisor, International Foundation for Science, Sweden.
1992-2003	Coordinator of the commercial production of the diagnostic urease test “Ureivic”

Professional Societies

2019-present	Member of the New Jersey Breastfeeding Coalition
2016-present	Member of the American Association for the Advancement of Science (AAAS)
2016-2018	Member of the American Anthropological Association (AAA)
2011-present	Member of the International Society for Microbial Ecology (ISME)
2004-present	Member of the American Society for Microbiology (ASM)
2004-2008	Fellow, Infectious Disease Society of America (IDSA).

Editorial Positions

2020-present	Editorial Board, *Cell Host & Microbe*
2015-2023	Associate Editor, *Scientific Reports*
2014-present	Associate Editor, *mBio*
2013-2015	Associate Editor, *Microbes and Infection*
2013-2015	Associate Editor, *Frontiers in Microbiology*
2011-2014	Associate Editor, *Microbial Ecology*
2007-2015	Associate Editor, *Livestock Science*