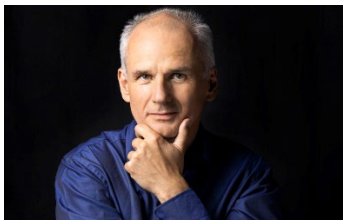
CV, Nikolaus Rajewsky, PhD



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Research Summary

Nikolaus Rajewsky is a globally recognized leader in Systems Biology, renowned for groundbreaking work on the role of RNA in regulating gene expression in health and disease. His research blends cutting-edge experimental biology, biochemistry, and data science, including machine learning. He has pioneered single-cell and spatial biology approaches, applying them to human tissues and advanced model systems to better understand, predict, and intercept disease trajectories.

In 2008 he founded and since then chaired/directs the "Berlin Institute for Medical Systems Biology" (MDC-BIMSB) as a strategic expansion of the MDC. He chaired the international recruitment of ~30 group leaders at BIMSB. MDC-BIMSB scientists use a combination of innovative experimental and computational approaches to understand and integrate different levels of gene regulation, ranging from DNA 3D conformation to cell-cell communication. Rajewsky and colleagues have built an interdisciplinary environment where these multi-scale insights are frequently translated into new diagnostic and therapeutic strategies, often in collaboration with the Charité Hospital.

His work has earned him global recognition, and a h-index of 92 with over 80,000 citations ("Highly cited researcher", Clarivate). He delivered hundreds of invited lectures, including 19 keynotes in the past five years. He is an elected member of EMBO, the German National Academy of Sciences (Leopoldina), and the Berlin–Brandenburg Academy of Sciences. He has received the most prestigious German Research award, the "Gottfried Wilhelm Leibniz Award".

Academic Career

2019 - 2023	Vice Director, MDC (interim), Berlin, Germany
2010 - present	Elected Member of the Faculty of Natural Sciences, Humboldt University, Berlin
2008 - present	**Scientific & Founding Director of the MDC "Berlin Institute for Medical Systems Biology"**
2006 - present	**Full Professor for Systems Biology at the MDC and Charité, Berlin, Germany**
2003 - 2006	Assistant Professor of Biology & Mathematics, New York University (tenure track)
2002 - 2003	Research Professor, Rockefeller University, New York, USA
1999 - 2002	PostDoc, Rockefeller University, New York, USA
1998 - 1999	PostDoc, Rutgers University, New Jersey, USA
1995 - 1997	PhD in Theoretical Physics, University of Cologne, Germany

Awards and Honors

2025	FEBS National Lecture award, presented at the PTBioch BIO2025, Poznan, Poland
2025	Visiting Professor, La Sapienza University of Rome
2023	Friedrich-Sasse Medal in Gold from the Medical Society Berlin
2022	Elected member, Berlin–Brandenburg Academy of Sciences and Humanities, Berlin
2021	Scout for the Henriette–Hertz–Program of the Alexander von Humboldt Foundation
2019	Elected member, "Leopoldina" (German National Academy of Sciences)
2017	Visiting Professor, La Sapienza University of Rome
2016	Visiting Professor, La Sapienza University of Rome
2014	Honorary PhD in Human Biology and Medical Genetics, La Sapienza University of Rome
2012	Gottfried Wilhelm Leibniz Prize, German Research Foundation (DFG)
2010	Elected EMBO Member
2009	"Berlin Science Award", Governing Mayor of Berlin
2008 - 2012	Global Distinguished Professor of Biology at New York University
2008	First prize from the "Deutsche Gesellschaft für Gentherapie" for the best paper
2008	Anniversary Price of the German Society for Biochemistry, awarded by FEBS (Federation of European Biochemical Societies)
2008	IUBMB (International Union of Biochemistry and Molecular Biology) – Medal for outstanding contributions.

Professional activities

Lectures: ~150 invited talks at international meetings over the past 10 years.

2025 - present	**Co-Spokesperson, new DFG Excellence Cluster** "ImmunoPreCept: Exploring the Health-Disease Bifurcation for Cell-based Molecular Prevention and Interceptive Medicine"
2024 - present	Member, Scientific Strategy Committee, cancer science Foundation ARC, Paris
2024 - present	Member, International Advisory Team, Institute of Bioorganic Chemistry, Polish Academy of Sciences
2023 - present	Co-Spokesperson, Einstein Center for early Disease Interception
2022 - 2023	Rapporteur, Evaluation Max Planck Research Institutes in the Life Sciences
2022 - 2025	SAB member, IFOM (Instituto Fondazione di Oncologia Molecolare), Milano
2022	Co–Organizer, Keystone Symposium "Single Cell Biology: Pushing New Frontiers", Florence
2021 - present	Member NIMSB Supervisory Board (Nova Institute for Medical Systems Biology, Lisbon)
2021 - present	Co-Director of Research, NCT (National Center for Tumor Diseases), Berlin
2021 - present	Principal Investigator, DZKJ (Deutsches Zentrum für Kinder– und Jugendgesundheit)
2021 - present	Principal Investigator, DKTK (German Cancer Consortium)
2021	Speaker of the innovation cluster Virchow 2.0
2021 - present	Member of the Advisory Board of the Berlin–Brandenburg Cluster HealthCapital
2021 - 2022	Member of the selection committee of the BMBF "Disruptive Innovation Agency" Sprin–D challenge
2021 - 2023	Member of the Board of Editing Reviewers for "Science"
2020 - 2024	Member of the Board of DeCOI (Deutsche COVID–19 OMICS Initiative)
2020 - present	Founder and Chair, "Single Cell Approaches for Personalized Medicine" (joint initiative of MDC/BIMSB, Berlin Institute for Health and Charité)
2020 - present	Member of the Scientific Advisory Board at INGM (Instituto Nazionale Genetica Molecolare), Milano
2020 - present	Principal Investigator at La Sapienza PhD program "Network Oncology and Precision Medicine", Rome
2019 - present	Founder and organizer of the "Breaking Boundaries" event series

2019 - present	Member, NeuroCure Cluster of Excellence in the Neurosciences, Charité -
2018 - 2023	Co-Coordinator of the pan–European consortium “LifeTime”
2018 - 2023	Founding and steering committee member of “Single Cell Omics Germany (SCOG)”
2017	Co–Organiser, HCA workshop “Model Systems, Organoids & the Human Cell Atlas”
2017 - present	Member, Organizing Committee “Human Cell Atlas (HCA)”
2015 - 2016	Member, Scientific Committee, ICSB (International Conference on Systems Biology), Barcelona
2015 - 2016	Co–Organizer, EMBO/EMBL Meeting “From Functional Genomics to Systems Biology”, Heidelberg
2015	Co–Organizer, 40th FEBS (Federation of European Biochemical Societies) Congress “The Biochemical Basis of Life”, Berlin
2014	Co–organizer, international “Berlin C. elegans Meeting”
2014 - present	Member, Advisory Editorial Board of the Journal “Molecular Systems Biology”
2014	Chairman for the evaluation of “Medical RNAomics”, LOEWE program, Hessen
2014	Referee for the “Zukunftsreport Wissenschaft”, Leopoldina
2013 - 2017	Member, Scientific Advisory Board of the EC funded consortium “ncRNA Pain”
2013	Founding Member, Integrative Research Institute for the Life Sciences (IRI), Humboldt University, MDC, and Charité
2012	Program committee member of RECOMB (Research in Computational Molecular Biology) Regulatory Systems Genomics conference
2012 -	Member of the Editorial Board of the Journal “Quantitative Biology”
2011 - 2017	Member of the Scientific Advisory Board of the “Wissenschaftskolleg zu Berlin”
2012 - present	Principal Investigator, DZHK (Deutsche Zentrum für Herz–Kreislauf–Forschung)
2012	Co–organizer, EMBO–EVONET Workshop “Genomic Approaches to Evolution and Development”, Heidelberg
2011 - present	Principal Investigator, Berlin School of Integrative Oncology (BSIO)
2011	Principal evaluator of the Bioinformatics Program at Tel Aviv University
2011- present	Co–founder of the new lecture series “Ringvorlesung” (MDC/BIMSB, HU, FU, Charité)
2011 - 2012	Member of the Helmholtz “Think Tank”
2010	Member of the International Advisory Committee for SISSA (Scuola Internazionale Superiore di Studi Avanzati), Trieste
2010 - 2022	Member of the Scientific Advisory Board of the MRC London Institute of Medical Sciences, London
2009 - 2013	Member of the Editorial Board of the new international, pub–med indexed journal “Silence”
2009	Member of the Review Panel UAG (Unit of Animal Genomics), University of Liège
2009	Member of the Review Panel of the EMBL, Hinxton
2009 - present	Organizer and Chairman of the new “MDC–NYU PhD exchange program”
2009	Organizer of the workshop “Lessons from deep sequencing”, Keystone Conference “The Biology of RNA Silencing”, Vancouver, Canada
2008 - present	Initiator and Organizer of the annual international conference “Berlin Summer Meeting: Computational and Experimental Molecular Biology Meet”
2007 - 2010	Member of the Editorial Board “Bioinformatics”
2007 - 2011	Editor of “Developmental Biology”
2007 - present	MDC Coordinator “Systems Biology”
2007 - 2011	Chairman of the MDC Fellowship program
2007 - present	Member of various European Commission Study Sections
2006	Member, Program Committee “Systems Biology” of ISMB (International Society for Computational Biology)
2006 - 2011	Member of the Editorial Board of the journal “BMC Systems Biology”
2005	ad–hoc member NIH GCAT study section (National Institutes of Health Genomics, Computational Biology and Technology)
2003	ad–hoc member NIH GCAT study section (National Institutes of Health Genomics, Computational Biology and Technology)

2004 - 2007 Editor of the “Journal of Statistical Mechanics: Theory and Experiment”
2003 - 2007 Associated Editor of the journal “Bioinformatics”
2003 - 2007 Moderator for the “Quantitative Biology Archive”

6 important original papers /preprint

Lisek K, Theurillat I, Pentimalli TM, Beier S, León-Periñán D, Antonatou A, Dubnov S, Müller M, Hubl F, Xhuri A, Romanowicz H, Smolarz B, Montaudon E, Raimundo S, Margineanu A, Schott M, Kunz S, Marangoni E, Karaiskos N, Nitzan M, Walter Birchmeier, **Rajewsky N**. “Spatiotemporal dynamics of tumor microenvironment remodeling.” bioRxiv 2025

Schott M, León-Periñán D, Splendiani E, Strenger L, Licha JR, Pentimalli TM, Schallenberg S, Alles J, Samut Tagliaferro S, Boltengagen A, Ehrig S, Abbiati S, Dommerich S, Pagani M, Ferretti E, Macino G, Karaiskos N, **Rajewsky N.** “Open-ST: High-resolution spatial transcriptomics in 3D.” Cell 2024

Rajewsky N*, Almouzni G*, Gorski SA*, Aerts S, Amit I, Bertero MG, Bock C, et al. 2020. “LifeTime and Improving European Healthcare through Cell–Based Interceptive Medicine.” Nature 2020 *contributed equally (>160 European Co-authors).

Nitzan M, Karaiskos N, Friedman N, **Rajewsky N**. “Gene Expression Cartography.” Nature 2019 (co-corresponding with N. Friedman)

Memczak S, Jens M, Elefsinioti A, Torti F, Krueger J, Rybak A, Maier L, Mackowiak SD, Gregersen SH, Munschauer M, Loewer A, Ziebold U, Landthaler M, Kocks C, le Noble F, **Rajewsky N**. “Circular RNAs Are a Large Class of Animal RNAs with Regulatory Potency.” Nature 2013

Krek A, Grün D, Poy MN, Wolf R, Rosenberg L, Epstein E, da Piedade I, McMenamin P, Gunsalus KC, Stoffel M, **Rajewsky N.** “Combinatorial microRNA target predictions.”, Nature Genet. 2005