

**RAFAEL YUSTE, M.D., Ph.D.**

DOB: April 25th, 1963, in Madrid, Spain

Nationality: Spanish and US

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Education

1981-1987 M.D, Universidad Autónoma, Madrid, Spain

Medical License, Spain and European Union,

Medical Examination US FMGEMS. 1987-1992

Ph.D., Rockefeller University Thesis title: "Optical studies of calcium dynamics in developing neocortical neurons."

Advisors: Drs. Lawrence Katz and Torsten Wiesel

Training and Professional Appointments

1982-83: Intern, Departamento de Bioquímica. Universidad Autónoma de Madrid. Advisor: Dr. Alberto Sols.

1984-1985 Intern, Centro de Biología Molecular. Universidad Autónoma de Madrid. Advisor: Dr. Alberto Ferrús.

1985-1986 Intern, MRC Laboratory of Molecular Biology Cambridge, England. Advisor: Dr. Sydney Brenner.

1992-1996 Postdoctoral Research Associate Biological Computation Research. Department AT&T Bell Laboratories, Murray Hill, NJ. Advisor: Dr. David Tank.

1996-1997 Course Director, "Anatomical and Functional Imaging in the Nervous System "Cold Spring Harbor Laboratory, NY.

1996-2001 Assistant Professor. Department of Biological Sciences Columbia University, NY.



1998-present Visiting Professor, Javier De Felipe's laboratory Cajal Institute, UPM, Madrid.

2001-2002 Associate Professor. Department of Biological Sciences. Columbia University, NY.

2002-2006 Tenured Associate Professor. Department of Biological Sciences. Columbia University, NY.

2004-present Co-Director. Kavli Institute for Brain Science. Columbia University, NY.

2005 Visiting Professor. EPFL, Lausanne. 2005-2013 Investigator. Howard Hughes Medical Institute.

2005-2013 Member Center for Neurobiology and Behavior, College of Physicians and Surgeons. Columbia University Medical Center, NY.

2006-present Full Professor. Department of Biological Sciences, Columbia University and Department of Neuroscience, College of Physicians and Surgeons, Columbia University Medical Center, NY.

2012-present Affiliated Faculty Institute for Data Science and Engineering Columbia University.

2012-2014 Visiting Scientist Allen Institute of Brain Science, Seattle.

2014-present Director NeuroTechnology Center Columbia University.

2014 Visiting Researcher Ecole Normale Supérieure, Paris.

Awards and Honors

1982-1987 Honors in Physiology, Pharmacology, Pathology, Internal Medicine, Dermatology, Gynecology and Obstetrics

Universidad Autónoma, Madrid, Spain.

1985-1987 Young Researcher Award, National Research Council Cajal Institute, Madrid, Spain.

1988 Stetten Award, Neurobiology Course, MBL Marine Biological Laboratories (MBL), Woods Hole, MA.

1996-1999 Sloan Foundation Fellow.

1996-1999 Klingenstein Foundation Young Investigator Award.

1997-1999 Basil O'Connor Young Investigator Award.

1997-2000 EJLB Foundation Young Investigator Award.

1997 Epilepsy Foundation of America Young Investigator Award.

1997-1998 Beckman Foundation Young Investigator.

2000 Killam Lecture, McGill University, Montreal.

2000 Grass Travelling Lecture, New Orleans Chapter Society for Neuroscience.

2001-2004 John Merck Scholars Award.

2002 Mayor's Young Investigator Award for Excellence in Science and Technology, New York City.

2002 Keynote speaker, Neuroscience Symposium Center for Neuroscience Rutgers, The State University of New Jersey.



2002 Rodolfo Rivas Memorial Lecture University of Maryland, College Park.

2002 Young Investigator Award, Society for Neuroscience.

2004 NIH Directors' Seminar National Institutes of Health (NIH), Bethesda, MD.

2005 Pfizer Lecture Maryland Psychiatric Research Center, Baltimore, MD.

2005 Grass Travelling Lecture, Neuroscience Day Speaker New Mexico Chapter, Society for Neuroscience.

2006 Keynote Speaker, Molecular & Behavioral Neuroscience Institute (MBNI) 50th Anniversary Symposium University of Michigan, Ann Arbor, MI.

2007 Keynote Speaker, Symposium "From Molecules to Circuits" MRC Laboratory of Molecular Biology Cambridge University, UK.

2007 Keynote Speaker, Annual Neuroscience Symposium, University of North Carolina, Chapel Hill.

2011 Severo Ochoa Lecture Centro de Biología Molecular (CBM) Madrid, Spain.

2011 Keynote Speaker Elio García-Ausst Memorial Lecture Spanish Neuroscience Society Salamanca, Spain.

2011 Keynote Speaker Duke University Neuroscience Program Retreat.

2011 Directors' Seminar National Institutes of Health (NIH), Bethesda, MD.

2012 Keynote Speaker European Federation of Physiological Societies Meeting Santiago, Spain.

2012 Named one of "Five to Watch in 2013".

2012 Year-End Issue *Nature* Journal.

2012 NARSAD Distinguished Investigator.

2013 Keynote Speaker LSF Japan Tokyo, Kyoto and Osaka.

2013 Inaugural Speaker TEDMED Washington, DC.

2013 Keynote Speaker RIAO/OPTILA Porto, Portugal.

2013 Keynote Speaker Organization for Computational Neuroscience Paris, France.

2013 IBENS Lecture Ecole Normale Supérieure Paris, France.

2013 100 Españoles (100 Spaniards) List.

2013 NIH Director's Pioneer Award.

2014 Keynote Speaker 150th Anniversary Hospital Auxilio Español Universidad de Puerto Rico.

2014 Keynote Lecture NIH Biomedical Technology Research Center Meeting Bethesda, MD.

2014 BSI Keynote Lecture RIKEN Tokyo, Japan.

2014 Keynote Lecture NIMH Conte Center, Harvard University Cambridge, MA.

2014 Lenfest Faculty Award Columbia University.

2015 Keynote Address Optogenetics and Optical Control of Cells BiOS, Photonics West 2015.



2015 Keynote Speaker, Molecular & Behavioral Neuroscience Institute (MBNI) Symposium University of Michigan, Ann Arbor, MI.

2015 XVI Lecture "Eladio Viñuela" Centro de Biología Molecular Madrid, Spain.

2015 Jiménez Díaz Award Fundación Conchita Rábago de Jiménez Díaz Madrid, Spain.

2015 Corresponding Member Real Academia de Ciencias Exactas Físicas y Naturales de España (RACEFN; Spanish Royal Academy of Science) Madrid, Spain.

2015 Keynote Speaker European Light Microscopy Initiative (ELMI). Sitges, Spain.

2015 Keynote Speaker Center for Neuroengineering Annual Meeting Houston, Texas.

2015 President Research Seminar, Sloan-Kettering-Cornell University, New York.

2015 Honorary Member Real Academia de Nacional de Medicina de España (RANM; Spanish Royal Academy of Medicine) Madrid, Spain.

2015 Honorary Member Nano Canadian Society Ottawa, Canada.

2015 Keynote Speaker, Cajal Celebration NIH/Spanish Embassy/Society for Neuroscience, Washington DC.

2015 Keynote Speaker IEEE BRAIN Initiative Workshop New York, NY.

2015 Keynote Speaker Christmas Neuroscience Meeting Instituto de Neurociencias Alicante, Spain.

2016 Congreso del Futuro Senate of Chile. Santiago, Chile.

2016 Plenary Lecture Neural Computation and Engineering Connection University of Washington Seattle, WA.

2016 Five Spanish Scientists One Should Know Principia Magazine.

2016 Magisterial Lecture Diálogos con la Cultura Universidad Autónoma de Madrid.

2016 Keynote Speaker "Passion for Knowledge" Donostia International Physics Center San Sebastian, Spain.

2016 Keynote Speaker Asociacion para el Progreso de la Direccion Madrid, Spain.

2016 Keynote Speaker Annual Winter School Quantum and Nano Computing Center Dayalbagh, Agra, India.

2016 Honorary Member, IdiPAZ Institute, Madrid.

2017 Congreso del Futuro Senate of Chile Santiago, Chile.

2017 Keynote Address BIOS, Photonics West 2015.

Editorial and Advisory Boards

1998-present: Associate Editor, *Cerebral Cortex*.

2000-2011: Advisory Editor, *Nature Reviews Neuroscience*.

2001-2004: Consulting Editor, *Journal of Clinical Investigations*.

2002-2004: Associate Editor, *European Journal of Physiology*.

2002-2006: Scientific Advisory Board, Neuropharma S.A.

2002-2010: Editorial Board, *Journal of Neurobiology*.

2004-present: Advisory Editor, *Anatomy and Embryology*.

2006-present: Publication Board, Columbia University Press.

2006-present: Editorial Board, Cold Spring Harbor Protocols.

2006-2008: Advisory Board, Consolider Program, Spain.

2006-present: Editor-in-chief, Neuro-Humanities Series, Columbia University Press.

2006-present: Editorial Board, *Brain Structure and Function*.

2007-2013: Chief Editor, *Frontiers in Neural Circuits*.

2007-2016: Advisory Board, Andalusian Centre for Developmental Biology (CABD).

2008: Advisory Board, National Research Council (CSIC), Spain.

2008-2011: Advisory Board, Neuron Registry Task Force.

2009: Advisory Board, Neuroscience Institute (INA), Alicante, Spain.

2009: Scientific Advisory Board, Solaris Therapeutics, Inc.

2009-present: Advisory Board, BIOFISIKA, Biophysics Institute (CSIC), Bilbao, Spain.

2011-2013: Founding Member, Brain Activity Map Project (BAM).

2012-present: Advisory Board, NIMH Silvio Conte Center, Harvard University.

2013- 2016: Scientific Advisory Council, National Eye Institute.

2013- present: East Coast US Advisory Board, Leica Microsystems.

2013- present: Director's Council, Center for Brain Activity Mapping, UCSD.

2013-present: Keystone Symposia's Scientific Advisory Board.

2013-present: UCLA Nanocenter Scientific Advisory Board.

2014- Present: BRAIN Multi-Council Working Group, NIH.

2024-16: Executive Committee, Graduate School of Arts and Sciences, Columbia University.

2014- Present: BRAIN Scientific Advisory Board, State of California.

2014- Present: Editorial Board, Neural Computation.

2014: Director Search Committee, Edmond and Lily Safra Center for Brain Sciences, Israel.

2015- Present: Chair, Cell Types and Connections Advisory Council, Allen Institute of Brain Science, Seattle.

2015-Present: Neuromerit Track Chair, SPIE-BIOS Photonics West Meeting.

2015-Present: External Advisory Board, Center for Biomedical Technology (CTB), Universidad Politécnica de Madrid.



2015- Present: Advisory Board, WORMGUIDES Center, Yale University.

2015- Present: Neuroethics workgroup, BRAIN Multi-Council Working Group, NIH.

2016- Present: New York Center for Mindfulness, Baruch College, CUNY.

2016- Present: External Advisory Board, EPFL.

2016- Present: Scientific Advisory Board, Querer Foundation.

Professional Organization and Societies

1987 – present Licensed Physician, Medical Board of Madrid.

1988 – present Member, Society for Neuroscience.

2016 – present Member, International Society for Neuroethics.

Entrepreneurship

2015 – present Founder, RubiTech LLC.

Grant Awards (current)

7/13-8/18 “Functional connectomics of the neocortical microcircuit,” NIH Director Pioneer Award DP1 EY024503, R. Yuste, PI.

1/98-8/17 “Imaging functional connectivity in visual cortex,” NIH RO1 EY11787, R. Yuste, PI.

7/13-8/18 “Two-photon optical control of astrocytic function,” NIH R01 MH101218, R. Yuste, PI.

10/12-9/18 “Imaging How a Neuron Computes”, ARO MURI W911NF-12-1-0594, DoD, R. Yuste, PI.

7/13-6/18 “Functional consequences of GABAergic inhibition on dendritic spines at puberty ”, NIDA R01MH100561, S. Smith and R. Yuste, co-PIs.

1/1/15-1/1/2018 “Deciphering the cortex: Circuit inference from large-scale brain activity data”, DARPA-BAA-14-59. Paninski, PI.

11/1/16-10/31/2020 Breaking the code: engineering neural controllers and behavior in *Hydra vulgaris*, DARPA-BAA-16-17. R. Yuste, PI.

Grant Awards (past)

9/16 “Coordinating Global Brain Project,” NSF DBI 1644405, R. Yuste and C. Bargmann, PI.

6/14-5/15 “Breaking the neural code”, DARPA W91NF-14-1-0269, R. Yuste and L. Paninski, co-PIs.

3/13-2/15 “Novel caged Dopamine compounds”, NIMH R21MH100646, R. Yuste, PI.

2/13-1/15 “Astrocytic regulation of neuronal synchronization ”, NIDA R21DA034195 , R. Yuste, PI.

1/12-12/14 “Watching the Brain Work: Imaging Neuronal Activity with Diamond Nanoprobes,” Keck Foundation, R. Yuste, co-PI.

10/12-9/14 “A novel 3D microscope for imaging and photostimulation”, NIMH R41MH100895, S. King and R.

Yuste, Co-PIs.

1/13-12/14 "Novel caged GABA compounds", NINDS R21NS081393, R. Yuste, PI

3/13-3/14 "Role of chandelier cells in controlling cortical activity", NARSAD Distinguished Investigator Grant, R. Yuste, PI.

7/09-8/11 "Optical reconstruction of cortical connectivity," NSF 08-514, L. Paninsky and R. Yuste, PI's.

4/07-4/10 "Neural circuits and plasticity Gordon Research Conference," NIH R13 EY018258, R. Yuste, PI.

2/07-1/08 "Novel Optics Methods for Imaging Membrane Potential in Neuronal Circuits", Gatsby Initiative in Brain Circuitry, R. Yuste, PI.

1/01-12/06 "Spine motility and visual plasticity," NIH RO1 EY13237, R. Yuste, PI.

4/03-3/06 "Fast two-photon imaging of cortical activity and connectivity," Human Frontiers Science Project Grant, J. Eilers, PI.

9/05-7/06 "Philosophy and Neuroscience Discussions," Templeton Foundation, R. Yuste, PI.

10/00-9/05 "Imaging epileptiform events in juvenile neocortex," NIH RO1 NS40726, R. Yuste, PI.

7/01-7/05 New York STAR Center for High Resolution Imaging of Functional Neural Circuits, T. Jessell, PI.

10/04-9/08 Second Harmonic And Two-Photon Imaging Of Membrane Potential And Cellular Biochemistry United States-Israel Binational Science Foundation (BSF) Aaron Lewis PI.

10/01-9/03 "Two-photon subpial transections to prevent the initiation and spread of neocortical epilepsy," NIH R21 MH01944 R. Yuste, co-PI.

1/01-12/01 "DNA microarray classification of neurons involved in epileptiform events," NIH NS40726 NINDS Supplement, R. Yuste, PI.

1/97-12/00 "Role of Inhibitory Connections in Regulatory Patterned Intrinsic Neuronal Activity During Development," Human Frontiers Science Project Grant, A. Konnerth, PI.

1/92-12/96 "Optical imaging of cortical circuits," Office of Naval Research Grant, R. Yuste and D. Tank, PIs.

Publications

- Ayzenshtat, I., Karnani, M.M., Jackson, J. and Yuste, R. (2016). Control of spatial resolution in visual cortex by VIP+ interneurons. *J. Neurosci.* (in press).
- Barth, A. et al (2016). Comment on "Principles of connectivity among morphologically defined cell types in adult neocortex". *Science* 353:1108.
- Goering, S. and Yuste, R. (2016). On the Necessity of Ethical Guidelines for Novel Neurotechnologies. *Cell* (in press).
- Jayant, K., Hirtz, J.J., Plante, I. J-L, Tsai, D., De Boer, W., Semonche, A., Peterka, D.S., Owen, J.S., Sahin, O., Shepard, K.L. and Yuste, R. (2016). Targeted intracellular voltage recordings from dendritic spines using quantum-dot coated nano-pipettes. *Nature Nano.* (in press).
- Batir, S., Yuste, R., Goering, S. and Sullivan, L.S. (2016). The 2016 Kavli Futures Symposium: Ethical foundations of Novel Neurotechnologies: Identity, Agency and Normality. *Neuroethics Blog* (in press).

Más de 200 publicaciones.