Ricardo E. Dolmetsch

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Education

1997-2003	Post-doctoral Fellow, Department of Neurobiology, Harvard Medical School
1991-1997	Ph.D. Neuroscience Stanford University, Stanford, CA
1986-90	Bachelor of Science (Honors) Brown University, Providence, RI
1974-86	High School and Bachillerato Colegio Bolivar, Cali, Colombia

Awards and Honors

2008	National Institutes of Health Pioneer Award
2007	Society for Neuroscience Young Investigator Award
2007	Axelrod Lecturer Society for Neuroscience
2006	Terman Fellow
2005	Stanford University Faculty Fellow
2004-2007	McKnight Scholar
2004-2007	Searle Scholar
2004-2009	NIH RO1 NS048564 “Calcium Signaling in Neurons”
2001-2006	Burroughs Wellcome Career Award in Biomedical Sciences
1999-2001	McKnight Technological Innovations in Neuroscience Award
1998-2001	Helen Hay Whitney Postdoctoral Fellow
1993-95	American Heart Association Predoctoral Fellow
1990	Pew Charitable Trust Award

Positions and Employment

2005-present	**Assistant Professor** Department of Neurobiology Stanford University School of Medicine, Stanford CA
2003-2005	**Assistant Professor** Department of Molecular Pharmacology Stanford University School of Medicine, Stanford CA
1997-2002	**Postdoctoral Fellow** Harvard Medical School, Boston MA Advisor: Dr. Michael E. Greenberg

1991-96 **Graduate Student**
Department of Molecular and Cellular Physiology, Stanford University
Advisor: Dr. Richard S. Lewis

1992, 1993 **Teaching Assistant**
"Imaging Structure and Function in the Nervous System"
Cold Spring Harbor Laboratory with Richard Lewis and Larry Katz

1991-92 **Teaching Assistant**
Neurobiology
Stanford University Medical School

1990-91 **Graduate Student**
Advisor: Dr. Dennis Choi
Department of Neurology, Stanford University Medical School

1990-91 **Lecturer**
Department of Computer Science, Universidad del Valle, Cali, Colombia

1989-90 **Research Assistant**
Supervisor: Dr. Constance Bowe
Department of Clinical Neurology, Brown University

1989 **Research Assistant**
Supervisor: Dr. Vladimir Zaninovic
Foundation for the Study of Retrovirus Related Myelopathies
Hospital Universitario del Valle, Cali, Colombia

1988 **Computer Programmer**
Tropical Disease Research
World Health Organization, Geneva, Switzerland

Current Research Support (external only/per year)

National Institutes of Health Pioneer Award $ 500,000
This project focuses on the use of induced pluripotent stem cells to study autism spectrum disorders

NIH RO1 NS48564-01 “Calcium Signaling In Neurons” $ 225,000
This study investigates ion channel signaling to biochemical pathways that activate transcriptional and promote neuronal survival.

Fidelity Foundation $142,000
The goal of this study is to investigate the mechanisms by which voltage gated calcium channels regulate neuronal survival and cell death.

Simons Foundation $ 60,000
This project focuses on the characterization of a mouse model of timothy Syndrome

Terman Scholar $ 75,000
The project investigates new methods for studying ion channel trafficking and for developing ion channel blockers

McKnight Scholar $ 75,000

This project will investigate calcium channel activation of transcriptional pathways.

Searle Scholar $ 75,000
This project will focus on characterizing the calcium channel proteome using mass spectrometry and total internal reflection microscopy.

Teaching

Spring	2007-	NBIO 222	Principles of Biological Microscopy
Winter	2006-	NBIO 206	Neurobiology (From 2008- director of the course)
Autumn	2006-08	NBIO 207	Stanford Intensive Neurosciences Course (Boot-camp for grad students)
Autumn	2005-08	NBIO200	Neurosciences Professional Development and Journal Club
Autumn	2003, 2004	MPH 270	Molecular Pharmacology Seminar Series
Winter	2004, 2005	MPH 210	Mechanisms of Cell Signaling

National Service

2008-10	Chair FASEB meeting on calcium signaling
2008	Member of External Review Committee National Institute of Child Health and Development
2004-6	Member AHA Cell Function and Metabolism Study Section
2004	Member Study Section National Heart Lung and Blood Institute
2004	Ad-hoc Member National Center for Scientific Review Syn Study Section

Departmental and University Service

Stanford Online Medical Education Committee
Admissions Committee, Neurosciences Program
Stanford Masters in Medicine Steering Committee
Stanford Cardiovascular Institute Steering Committee
Stanford Autism Focus Group
Calcium Club Deity
Faculty Senate 2003-04
Member: BioX, Neuroscience Institute and Cardiovascular Institute
Member of Neurosciences, Molecular Pharmacology and Chemical Biology training programs

Professional Associations

Society of General Physiologists
Society for Neuroscience
Biophysical Society

Publications

1. J.F. Krey, R. Rasmusen and R.E. Dolmetsch. An autism-associated mutation in $Ca_V1.2$ causes dendrite retraction by ectopic activation of RhoA ***In Revision***
2. N.Gomez-Ospina, G. Panagiotakos, A. Budzillo, A. Narichania and R. Dolmetsch. An independent promoter and transcriptional start site in the *CaV1.2* gene generates CCAT ***In Preparation***
3. C.Y. Park, P.J. Hoover, F. Mullins, P. Bachhawat, E.D. Covington S. Raunser,T. Walz, C.K. Garcia, R.E. Dolmetsch and R.S. Lewis (Co-corresponding authors) STIM1 Clusters and Activates CRAC channels via Direct Binding of a Cytosolic Domain to Orai1 ***Cell, In Press***
4. F. Tsuruta, E.M. Green, M. Rouset and R.E. Dolmetsch. PIKfyve regulates CaV1.2 degradation and prevents excitotoxic cell death ***In Review***
5. O. Barreto-Chang and R. Dolmetsch, A voltage-dependent conformational change in the L-type calcium channel is required to activate CREB and promote neuronal survival. ***In Preparation***
6. C. Eroglu, M.W. Susman, N.J. Allen, C. Chakrabort, A.D. Huberman, E.M. Green, D. Annis, Z.D. Luo, A. Rosenthal, J.T. Lawle, R.E. Dolmetsch, D.F. Mosher and B.A. Barres. Neuronal Thrombospondin Receptor Responsible for Synaptogenesis is the Gabapentin Receptor L-type Calcium Channel Subunit $\alpha 2\delta 1$ ***In Revision Cell***
7. E. Green and R.E. Dolmetsch. **Nature Chemical Biology** 3:369-70 (2007), Calcium channels light up
8. E. Green, C. Barret G. Bultynck, S.M. Shamah and R.E. Dolmetsch. **Neuron** 55:615-22 (2007)**,** The tumor suppressor eIF3e mediates calcium-dependent internalization of the L-type calcium channel CaV1.2
9. J.F. Krey and R.E. Dolmetsch. **Current Opinion in Neurobiology**. 17:1-8 (2007) Molecular mechanisms of autism: a possible role for Ca^{2+} signaling.
10. J. Brenner and R.E. Dolmetsch. **Plos One.** 2:e802 (2007) TrpC3 Specifically Regulates Hypertrophy-Associated Gene Expression without Affecting Myocyte Contraction or Cell Size.
11. N. Gomez-Ospina, F. Tsuruta, O. Barreto-Chang, L. Hu and R.E. Dolmetsch. **Cell** 127:591-606 (2006) The C terminus of the L-type voltage-gated calcium channel $Ca_V1.2$ encodes a transcription factor
12. J. Brenner, N Gomez-Ospina and R.E. Dolmetsch. Temporal and spatial regulation of calcium-dependent transcription. In: ***Calcium a matter of life and death.*** J. Krebs ed. Elsevier (2006)
13. C.Y. Park and R.E. Dolmetsch. **Science.** 314:64-5 (2006) Cell signaling. The double life of a transcription factor takes it outside the nucleus. .
14. R.E. Dolmetsch, N. Gomez, E. M. Green and E. A. Nigh. Imaging gene expression in living cell and tissues. In: ***Imaging Living Cells: A Laboratory Manual***. A. Konnerth, and R. Yuste, eds. Cold Spring Harbor Laboratory Press (2004).
15. R. E. Dolmetsch **Science STKE** January 15*,* (2003) Excitation transcription coupling: Signaling from ion channels to the nucleus.
16. J.M. Spotts*, R.E. Dolmetsch* and M.E. Greenberg. **Proceedings of the National Academy of Science** 99:15142-7(2002*)* Time-lapse imaging of a Dynamic Phosphorylation-Dependent Protein-Protein Interaction in Mammalian Cells (*Both of these authors contributed equally to this work)
17. J.M. Kornhauser, C.W. Cowan, A.J. Shaywitz, R.E. Dolmetsch, E.C. Griffith, L.S. Hu, C. Haddad, Z. Xia, M.E. Greenberg. **Neuron**. 34:221-33 (2002) CREB transcriptional activity in neurons is regulated by multiple, calcium-specific phosphorylation events.

18. R.E. Dolmetsch, U. Pajvani, K. Fife, J. Spotts and M.E. Greenberg. **Science (Research Article)** 294:333-339 (2001). Signaling to the Nucleus by an L-type Calcium Channel-Calmodulin Complex via the MAP kinase pathway.
19. S. Feske, J. Giltnane, R. E. Dolmetsch, L.M. Staudt and A. Rao. **Nature Immunology** 2:316-24. (2001) Gene regulation mediated by calcium signals in T lymphocytes.
20. A. E. West, W.G. Chen, M.B. Dalva, R. E. Dolmetsch, J.M. Kornhauser, A.J. Shaywitz, M.A. Takasu, X. Tao, and M. E. Greenberg. **Proceedings of the National Academy of Sciences USA** 98:11024–11031 (2001) Calcium regulation of neuronal gene expression.
21. R.E. Dolmetsch and P. Negelescu. Controlling cytoplasmic calcium and measuring calcium-dependent gene expression in intact cells. In: ***Calcium Signaling: A Practical Approach***, Alexei Tepikin ed. Oxford University Press (2001)
22. R.E. Dolmetsch and R.S. Lewis. Generation of controlled calcium oscillations in non-excitable cells. In: ***Imaging Living Cells: A Laboratory Manual***. A. Konnerth, F.Lanni, and R. Yuste, eds. Cold Spring Harbor Laboratory Press (1999).
23. J.I. Healy, R.E. Dolmetsch, R.S. Lewis, C.C. Goodnow, **Novartis Foundation Symposium** 215:137-145 (1998). Quantitative and qualitative control of antigen receptor signaling in tolerant B cells.
24. R.E. Dolmetsch, K. Xu, and R.S. Lewis. **Nature** 392:933-36 (1998). Calcium oscillations increase the efficiency and specificity of gene expression.
25. S. Bergling, R.E. Dolmetsch, R.S. Lewis, and J. Keizer. **Cell Calcium** 23:251-59 (1998). A fluorometric method for estimating the calcium content of internal stores.
26. R.E. Dolmetsch, R.S. Lewis, C.C. Goodnow, and J.I. Healy. **Nature** 386:855-58 (1997). Differential activation of transcription factors by calcium response amplitude and duration.
27. J.I. Healy, R.E. Dolmetsch, L.A. Timmerman, J.G. Cyster, M.L. Thomas, G.R. Crabtree, R.S. Lewis, and C.C. Goodnow. **Immunity** 6:419-28 (1997). Different nuclear signals are activated by the B cell receptor during positive versus negative signaling.
28. C.M. Fanger, A. Zweifach, R.E. Dolmetsch, M. Hoth, and R.S. Lewis. **Cellular Physiology and Biochemistry** 7:203-18 (1997). Function follows form: The role of store-operated calcium channels in T cell activation.
29. R.S. Lewis, R.E. Dolmetsch, and A. Zweifach. Positive and negative regulation of depletion-activated calcium channels by calcium. In: ***Organellar Ion Channels and Transporters***, Society of General Physiologists Series, v. 51. D.E. Clapham and B.E. Erlich, eds. Rockefeller University (1996).
30. R.E. Dolmetsch and R.S. Lewis. **Journal of General Physiology** 103:365-88. (1994). Signaling between intracellular calcium stores and depletion-activated calcium channels generates calcium oscillations in T lymphocytes.

Recent lectures and invited presentations

National Institutes of Mental Health	2008
University of Pittsburgh Center for Neuroscience Annual Retreat	2008
University of Iowa	2008
FASEB meeting on Calcium Signaling	2008
Genentech, South San Francisco CA	2008

Xenoport, Mountain View, CA 2008

University of California, Davis 2008

Society for Neuroscience Meeting Julius Axelrod Lecture 2007

Calcium binding proteins and disease, La Palma Spain 2007

Canaix Ioniques, Giens France 2007

Searle Scholar's Meeting, Chicago Ill 2007

University of California Berkeley 2007

2nd Muscle Contraction Meeting Basel Switzerland 2007

University of California San Francisco 2006

Carnegie Mellon University, Pittsburgh Pennsylvania 2006

16th Ibero American Conference on Cell signaling 2006
Madrid Spain

Society for Neuroscience Annual Meeting 2006
Symposium Presentation

Gordon Conference Muscle EC coupling 2006
Session Chair,

FASEB Meeting: Calcium Signaling, Snowmass CO 2006

University of Texas San Antonio Health Sciences Center 2006

Society for Biophysics Annual Meeting, Salt Lake City UT 2006

Calcium signaling workshop, Coorg India 2005

Dept. of Biological Sciences, Stanford University 2005

FASEB Meeting: Ion Channel Signaling 2005

FASEB Meeting: Calcium signaling, Snowmass, CO 2004
"Calcium channels as transcription factors"

Society for Neuroscience Annual Meeting, San Diego CA 2004
"Excitation transcription coupling: Calcium channel signaling to the nucleus"

Children's Hospital Division of Neurobiology Boston MA 2004
"Calcium channel signaling to the nucleus"

Annual Meeting for the Society for Neuroscience, New Orleans, LA 2003
Special symposium on genetically encoded biosensors for defining neuronal circuits and synaptic change.
"Dynamic Imaging of Protein-Protein Interaction Within Neurons and Neural Circuits"

Annual Meeting for the Society for Neuroscience, New Orleans, LA 2003
Burroughes Welcome Fund Special Symposium: “How to get an academic job.”

FASEB Meeting: Ion Channel Regulation, Tucson AZ 2003
“L-type channel activation of transcription”

Annual Meeting of the Molecular Biology Society of Japan, Yokohma, Japan 2002
“Methods for detecting protein-protein interactions in neuronal circuits”

Institute of Molecular and Cellular Biosciences, University of Tokyo 2002
Excitation-transcription coupling: L-type calcium channel signaling to the nucleus”

Gordon Conference, Ion Channels, Tilton NH, 2002
“An L-type calcium channel that mediates signaling to the nucleus”

FASEB Meeting,, Calcium Signaling, Salt Lake City UT 2002
“Detecting protein-protein interactions using b-lactamase complementation”

Washington University in St. Louis 2002
“Excitation-transcription coupling: L-type calcium channel signaling to the nucleus”

University of California San Francisco 2002
“Excitation-transcription coupling: L-type calcium channel signaling to the nucleus”

Harvard Medical School Department of Genetics 2002
“Investigating calcium-channel signaling to CREB using a pharmacological knock-in “

Gordon Conference, Calcium Signaling, Oxford, UK 2001
“Voltage-gated calcium channel signaling to the nucleus”