

## CURRICULUM VITAE

Richard Lewis Haganir, Ph.D.  
Department of Neuroscience  
The Johns Hopkins University School of Medicine  
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### Education

1971-1975	Vassar College, A.B. Biochemistry
1977-1982	Cornell University, Ph.D. Program in Biochemistry, Molecular and Cell Biology (Thesis Advisor – Dr. Efraim Racker)

### Positions Held

2015 – present	Director, The Kavli Neuroscience Discovery Institute at Johns Hopkins
2014 – present	Professor and Director, Department of Neuroscience; Professor, Department of Biological Chemistry and Pharmacology and Molecular Sciences; The Johns Hopkins University School of Medicine
2008-present	Co-Director, Johns Hopkins Brain Science Institute
2006 - 2014	Professor and Director, Department of Neuroscience; Professor, Department of Biological Chemistry and Pharmacology and Molecular Sciences; The Johns Hopkins University School of Medicine; Investigator, Howard Hughes Medical Institute
7/93 - 2/2006	Professor, Department of Neuroscience and Department of Biological Chemistry; The Johns Hopkins University School of Medicine; Investigator, Howard Hughes Medical Institute
1/88 - 6/93	Associate Professor, Department of Neuroscience and Department of Biological Chemistry; The Johns Hopkins University School of Medicine; Associate Investigator, Howard Hughes Medical Institute
7/84 - 12/87	Assistant Professor, Laboratory of Molecular and Cellular Neuroscience, The Rockefeller University

- 7/83 - 7/84 Postdoctoral Fellow, Laboratory of Molecular and Cellular Neuroscience, The Rockefeller University (Advisor - Dr. Paul Greengard)
- 2/82-6/83 Postdoctoral Fellow, Department of Pharmacology, Yale University School of Medicine (Advisor - Dr. Paul Greengard)

### Honors and Fellowships

- |   |      |
|---|------|
| Society for Neuroscience Young Investigator Award                         | 1991 |
| Racker Symposium Lecturer, Cornell University                             | 1992 |
| Stephen Schuetze Memorial Lecturer, Columbia University                   | 1996 |
| DeCamp Symposium Lecturer, Rockefeller University                         | 1997 |
| NARSAD Distinguished Investigator Award                                   | 1999 |
| Elected to the American Academy of Arts and Sciences                      | 2001 |
| Santiago Grisolia Award   | 2004 |
| Elected to the National Academy of Sciences                               | 2004 |
| Elected to the rank of AAAS Fellow  | 2004 |
| Society for Neuroscience Julius Axelrod Award                             | 2007 |
| Elected to the Institute of Medicine                                      | 2011 |
| Prosser Lecture, University of Illinois                                   | 2013 |
| Goldman-Rakic Prize for Outstanding Achievement in Cognitive Neuroscience | 2014 |

### Teaching Experience

- |  |   |
|--|---|
| Yale University<br>School of Medicine          | Pharmacology Seminar  |
| Rockefeller University                         | Advanced Biochemistry<br>Molecular Neurobiology   |
| Marine Biological<br>Laboratory                | Neurobiology Course (Section Head)  |
| Johns Hopkins University<br>School of Medicine | Molecular Neurobiology<br>Molecular Biophysics of Membrane Ion Channels<br>Neurochemistry and Neuroendocrinology<br>Graduate Biochemistry & Cell Biology<br>Neuropharmacology<br>Introduction to Molecular & Cellular Neuroscience<br>Molecular Mechanisms in Synaptic Transmission<br>Neuroscience and Cognition |

## **Administrative Experience**

### **National**

Chair, NINDS Board of Scientific Counselors, 2003- 2006  
NINDS Board of Scientific Counselors, 2001 - 2006  
Treasurer, Society for Neuroscience, 2003-2004  
Chair, Program Committee, Society for Neuroscience, 2001  
Program Committee, Society for Neuroscience, 1999-2002  
Society for Neuroscience 2000 Nominating Committee, 1999-2000  
Chair, Gordon Conference on Excitatory Amino Acids and Brain Function, 2003  
Co-Founding Organizer, Cold Spring Harbor Meeting, "Synapses: From Molecules to Circuits and Behavior", 2004 – 2010  
National Academy of Sciences, Temporary Nominating Committee– 2012 - present

### **Johns Hopkins University**

Chair, Molecular Biology and Genetics Chair Search Committee 2002  
Biochemistry, Cellular and Molecular Biology Policy Committee  
Rodent Advisory Committee, 2001-2003  
Director, Neuroscience Graduate Program, 1988-2001  
M.A.-Ph.D. Committee, 1992-1999  
Chair, Neuroscience Graduate Program Steering Committee  
Neuroscience Graduate Program Admissions Committee  
Medical School Council  
ADAMHA Small Instrumentation Program  
Institutional Research Progress Grants Committee, 1998-2002  
Security Committee  
Department of Neurology Search Committee  
Department of Oncology Search Committee  
Department of Anesthesiology and Critical Care Medicine Chair Search Committee  
Grievance Committee  
Institute for Basic Biomedical Sciences Directors Committee  
Advisory Board of Medical Faculty Committee  
Professorial Promotions Committee  
Co-Director, Johns Hopkins Brain Science Institute  
Agenda Committee  
Director, The Kavli Neuroscience Discovery Institute at Johns Hopkins

## **Editorial Boards**

Neuron – Associate Editor  
Journal of Biological Chemistry – Associate Editor (1995-2000)  
Journal of Neuroscience – Associate Editor (1997-2003)  
Molecular Neurobiology – Editorial Advisory Board  
NeuroSignals – Editorial Board (7/01-6/03)

Experimental Neurology – Editorial Board (1/03-12/05)

## **Advisory Boards**

### **Educational**

#### *Current*

Picower Institute, MIT, Boston, MA – Chair, Scientific Advisory Board

Stanley Center for Psychiatric Research, MIT, Boston, MA – Chair, Scientific Advisory Board

Gladstone Institute of Neurological Disease – Scientific Advisory Board

#### *Previous*

Max Planck Florida Institute - Scientific Advisory Board

Wellcome Trust, London, England - Peer Review College

National Institute of Biology, Beijing, China - Scientific Advisory Board

Institute of Neuroscience, Shanghai, China - Scientific Advisory Board (2007 – 2013)

### **Industrial**

#### *Current*

Pfizer, Inc. – Chair, Neuroscience Therapeutic Area Scientific Advisory Panel

#### *Previous*

Ruxton Pharmaceuticals, Inc. - Scientific Advisory Board

Wyeth Pharmaceuticals, Inc. - Chair, Scientific Advisory Board

Sention Pharmaceuticals, Inc. - Scientific Advisory Board

Saegis Pharmaceuticals, Inc. - Scientific Advisory Board

Intra-Cellular Therapeutics Inc. - Scientific Advisory Board

## **Consulting**

Merck - Scientific Program Reviewer

AGY Therapeutics Inc. – Consultant

EMD Millipore - Consultant

## **Professional Societies**

National Academy of Sciences

American Academy of Arts and Sciences

Institute of Medicine

Society for Neuroscience

American Society for Biochemistry and Molecular Biology

American Association for the Advancement of Science

The Biochemical Society

The Dana Alliance for Brain Initiatives

### **Past Grant Support**

The Council for Tobacco Research	1984-1987
National Institutes of Health	1987-1990
Muscular Dystrophy Association	1987-1990
National Institutes of Health	1990-1995
The Council for Tobacco Research	1990-1993
Howard Hughes Medical Institute	1991-1993
Muscular Dystrophy Association	1991-1994
Muscular Dystrophy Association	1994-1997
Howard Hughes Medical Institute	1993-1999
National Institutes of Health	1995-2000
NARSAD	1999-2000
Robert Packard Center for ALS Research at Johns Hopkins	2000-2004
Howard Hughes Medical Institute	1999-2005
National Institutes of Health	2001-2005
Howard Hughes Medical Institute	2005-2014
National Institutes of Health	2005-2013
Simons Foundation	2001-2014
National Institutes of Health	2011-2015

### **Current Grant Support**

7/1/97 – 03/31/16	National Institutes of Neurological Disorders and Stroke PDZ domains and AMPA receptor function
5/22/13 – 3/31/18	National Institutes of Mental Health, Silvio A. Conte Center for Neuroscience Research - Plasticity at the Excitatory Synapse

### **Training Support**

Neuroscience Training Program  
Biochemistry, Cellular & Molecular Biology Training Program  
Neuromuscular Training Grant  
Interdisciplinary Training in Psychiatry and Neuroscience  
Cellular and Molecular Medicine Training Program

### **Present Predoctoral Trainees**

Casey Barber	2015-present
Han Tan	2013-present
Elena Lopez Ortega	2015-present
Richard Roth	2012-present
Adeline Yong	2014-present

**Present Postdoctoral Trainees**

Yoichi Araki, Ph.D.	2007-present
Shu-Ling Chiu, Ph.D.	2008-present
Graham Diering, Ph.D.	2011-present
Huaqiang Fang, Ph.D.	2010-present
Hana Goldschmidt Ph.D.	2015-present
Seok Heo, Ph.D.	2013-present
Ingie Hong, Ph.D.	2013-present
Natasha Hussain, Ph.D.	2009-present
Bian Liu, Ph.D.	2012-present
Kamal Sharma, Ph.D.	2005-present
Mengnan Tian, Ph.D.	2012-present
Yong Zhang, Ph.D.	2008-present

**Past Predoctoral Trainees**

Julia Bachman (Ph.D.)
Sudha Balasubramanian (M.D./Ph.D.)
Craig Blackstone (M.D./Ph.D.)
Hee Jung Chung (Ph.D.)
Hualing Dong (Ph.D.)
Michael Ehlers (M.D./Ph.D.)
Eric Fung (M.D./Ph.D.)
Yi Gu (Ph.D.)
Jackie Harlow (M.A.)
Jee Hae Kim (Ph.D.)
Julie Leegwater-Kim (M.D./Ph.D.)
Olof Lagerlof (Ph.D.)
David Leiberman
Yuichi Makino (Ph.D.)
Lauren Makuch (Ph.D.)
Andrew Mammen (M.D./Ph.D.)
Lifang Mao (Ph.D.)
Youn Na (Ph.D.)
Mutsuo Nuriya (Ph.D.)
Yuko Oku (Ph.D.)
Zhican Qu (Ph.D.)
Katherine Roche (Ph.D.)
Lei Shen (Ph.D.)
Jason Shepherd (Ph.D.)
Insuk Song (Ph.D.)
Jordan Steinberg (M.D./Ph.D.)
Nicole Stricker (Ph.D.)
Lefei Sun (Ph.D.)
Whittemore Tingley (M.D./Ph.D.)
Kathryn Wagner (M.D./Ph.D.)
Jun Xia (Ph.D.)

**Current Location**

HHMI/Janelia Farms
Children's Hospital of Boston
NINDS
University of Illinois at Urbana-Champaign
Scion Pharmaceuticals
Pfizer, Inc.
Affimetrix
Princeton University
Law Clerk, U.S. Federal Court of Appeals
Regeneron
Tufts University School of Medicine
Karolinska Institutet
University of California San Diego
Harvard University
Massachusetts Institute of Technology
NIAMS/NIH
University of California San Francisco
Fred Hutchinson Cancer Center
Keio University, Japan
New York University
Q&Aid Research
NINDS
Takeda Pharmaceuticals International Co.
University of Utah, School of Medicine
Samsung Electronics
Advocate Children's Hospital
Idaho National Laboratory
HuaTai Healthcare Investment Fund
University of California San Francisco
Johns Hopkins University
Hong Kong Univ. of Science and Technology

Bing Ye (Ph.D.)

University of Michigan

**Past Postdoctoral Trainees**

Jennifer L.P. Adams, Ph.D.  
Hiro Aizawa, Ph.D.  
Yoko Aizawa, Ph.D.  
Victor Anggono, Ph.D.  
Jean Claude Beique, Ph.D.  
Roger Clem, Ph.D.  
Christopher Ferris, M.D., Ph.D.  
Stephanie Gardner, Ph.D.  
Takashi Hayashi, Ph.D.  
Peter Hoffman, Ph.D.  
Sunjeev Kamboj, Ph.D.  
Kimihiro Kameyama, Ph.D.  
Myoung-Goo Kang, Ph.D.  
Chong-Hyun Kim, Ph.D.  
Lit-Fui Lau, Ph.D.  
Hey-Kyoung Lee, Ph.D.  
Feng Liang, Ph.D.  
Dezhi Liao, Ph.D.  
Da-Ting Lin, Ph.D.  
Hengye Man, Ph.D.  
Bernard McDonald, Ph.D.  
Lin Mei, Ph.D.  
Kathryn Miles, Ph.D.  
Steve Moss, Ph.D.  
Thomas Nieland, Ph.D.  
Thai Nguyen, M.D., Ph.D.  
Richard O'Brien, M.D., Ph.D.  
Peter Penzes, Ph.D.  
Bridget Queenan, Ph.D.  
Arippa Ravindran, Ph.D.  
Lynn Raymond, M.D., Ph.D.  
Gavin Rumbaugh, Ph.D.  
Rita Sattler, Ph.D.  
Robert Scannevin, Ph.D.  
Gek Ming Sia, Ph.D.  
Ching-Tien Su, Ph.D.  
Jun-Gyo Suh, Ph.D.  
Sheridan Swope, Ph.D.  
Kogo Takamiya, M.D., Ph.D.  
Gareth Thomas, Ph.D.  
Lenora Volk, Ph.D.  
Jocelyn Widagdo, Ph.D.  
Su Zhang, Ph.D.

**Current Location**

NIEHS  
Tokyo Metropolitan University  
The University of Tokyo  
Queensland Brain Institute  
University of Ottawa  
Mount Sinai School of Medicine  
Mecklenburg Medical Group  
Purdue University  
National Institute of Neuroscience, Japan  
College of Notre Dame  
University College London  
University of Tokyo  
University of Texas Medical Branch  
Korea Institute of Science and Technology  
Zhaoke Pharmaceutical  
Johns Hopkins University  
Cystic Fibrosis Foundation Therapeutics  
University of Minnesota  
NIH / NIDA / IRP  
Boston University  
University of Maryland Baltimore  
Georgia Regents University  
SUNY Health Science Center at Brooklyn  
Tufts University School of Medicine  
MIT  
Johns Hopkins University  
Duke University  
Northwestern University  
University of California, Santa Barbara  
Pharmacologist, FDA  
University of British Columbia  
Scripps Research Institute  
Barrow Neurological Institute  
Biogen-Idec  
University of Texas Health Science Center  
National Health Research Institute, Taiwan  
Hallym University, Korea  
US Patent and Trademark Office  
University of Miyazaki  
Temple University  
UT Southwestern Medical Center  
Queensland Brain Institute  
National Institute of Drug and Alcohol/ NIH

## **PUBLICATIONS**

### **Articles**

1. Haganir, R.L., Schell, M.A. and Racker, E. (1979) Reconstitution of the purified acetylcholine receptor from *Torpedo californica*. *FEBS Lett.* 108:155-160.
2. Haganir, R.L. and Racker, E. (1980) Endogenous and exogenous proteolysis of the acetylcholine receptor from *Torpedo californica*. *J. Supramol. Struct.* 14:13-19.
3. Killian, P.L., Dunlap, L.R., Mueller, P., Schell, M.A., Haganir, R.L. and Racker, E. (1980) Reconstitution of acetylcholine receptor from *Torpedo californica* with highly purified phospholipids: Effect of  $\alpha$ -tocopherol, phylloquinone and terpenoid quinones. *Biochem. Biophys. Res. Comm.* 93:409-414.
4. Coronado, R., Haganir, R.L. and Mautner, H.G. (1981) A  $K^+$ -selective conductance sensitive to cholinergic antagonists obtained by the fusion of axonal membrane vesicles to planar bilayers. *FEBS Lett.* 131:355-358.
5. Haganir, R.L. (1982) Purification and reconstitution of the nicotinic acetylcholine receptor from *Torpedo californica*. Doctoral Dissertation, Cornell University.
6. Haganir, R.L. and Racker, E. (1982) Properties of proteoliposomes reconstituted with acetylcholine receptor from *Torpedo californica*. *J. Biol. Chem.* 257:9372-9378.
7. Haganir, R.L. and Greengard, P. (1983) cAMP-dependent protein kinase phosphorylates the nicotinic acetylcholine receptor. *Proc. Natl. Acad. Sci. USA*, 80:1130-1134. PMID: PMC393542.
8. Tank, D.W., Haganir, R.L., Greengard, P. and Webb, W.W. (1983) Patch-recorded single channel currents of the purified and reconstituted *Torpedo* acetylcholine receptor. *Proc. Natl. Acad. Sci. USA*, 80:5129-5133. PMID: PMC384203.
9. Haganir, R.L., Miles, K. and Greengard, P. (1984) Phosphorylation of the nicotinic acetylcholine receptor by an endogenous tyrosine-specific protein kinase. *Proc. Natl. Acad. Sci. USA*, 81:6968-6972. PMID: PMC392057.
10. Haganir, R.L., Delcour, A.H., Greengard, P. and Hess, G.P. (1986) Phosphorylation of the nicotinic acetylcholine receptor regulates its rate of desensitization. *Nature* 321:774-776.
11. Miles, K., Anthony, D.T., Rubin, L.L., Greengard, P. and Haganir, R.L. (1987) Regulation of nicotinic acetylcholine receptor phosphorylation in rat myotubes by forskolin and cAMP. *Proc. Natl. Acad. Sci. USA*, 84:6591-6595. PMID: PMC299125.
12. Yee, G.H. and Haganir, R.L. (1987) Determination of the sites of cAMP-dependent phosphorylation on the nicotinic acetylcholine receptor. *J. Biol. Chem.* 262:16748-16753.
13. Hirano, A.A., Greengard, P. and Haganir, R.L. (1988) Protein tyrosine kinase activity and its endogenous substrates in rat brain: a subcellular and regional survey. *J. Neurochem.* 50:1447-1455.



14. Hopfield, J.F., Tank, D.W., Greengard, P. and Haganir, R.L. (1988) Functional modulation of the nicotinic acetylcholine receptor by tyrosine phosphorylation. *Nature* 336:677-680.
15. Stratton, K.R., Worley, P.F., Haganir, R.L. and Baraban J.M. (1989) Muscarinic agonists and phorbol esters increase tyrosine phosphorylation of a 40 kD protein in hippocampal slices. *Proc. Natl. Acad. Sci. USA*, 86:2498-2501. PMID: PMC286940.
16. Miles, K., Greengard, P. and Haganir, R.L. (1989) Calcitonin gene-related peptide regulates phosphorylation of the nicotinic acetylcholine receptor in rat myotubes. *Neuron* 2:1517-1524.
17. Hwang, T.-C., Lu, L., Zeitlin, P.L., Gruenert, D.C., Haganir, R.L. and Guggino, W.B. (1989) C1- channels in CF: lack of activation by protein kinase C and cAMP-dependent protein kinase. *Science* 244:1351-1353.
18. Ferris, C.D., Haganir, R.L., Supattapone, S. and Snyder, S.H. (1989) Purified inositol 1, 4, 5-triphosphate receptor mediates calcium flux in reconstituted lipid vesicles. *Nature* 342:87-89.
19. Qu, Z., Moritz, E. and Haganir, R.L. (1990) Regulation of tyrosine phosphorylation of the nicotinic acetylcholine receptor at the rat neuromuscular junction. *Neuron* 2:367-378.
20. Ferris, C.D., Haganir, R.L. and Snyder, S.H. (1990) Calcium flux mediated by purified inositol 1,4,5-trisphosphate receptor in reconstituted lipid vesicles is allosterically regulated by adenine nucleotides. *Proc. Natl. Acad. Sci. USA*, 87:2147-2151. PMID: PMC53643.
21. Ferris, C.D., Haganir, R.L., Bredt, D.S., Cameron, A.M. and Snyder, S.H. (1991) Inositol trisphosphate receptor: Phosphorylation by protein kinase c and calcium-calmodulin dependent protein kinases in reconstituted lipid vesicles. *Proc. Natl. Acad. Sci. USA*, 88:2232-2235. PMID: PMC51204.
22. Stratton, K.R., Worley, P.F., Litz, J.S., Parsons, S.J., Haganir, R.L. and Baraban, J.M. (1991) Electroconvulsive treatment induces a rapid and transient increase in tyrosine phosphorylation of a 40 kilodalton protein associated with MAP kinase activity. *J. Neurochem.* 56:147-152.
23. Kofuji, P., Wang, J.B., Moss, S.J., Haganir, R.L. and Burt, D.R. (1991) Generation of two forms of the gamma-aminobutyric acid A receptor gamma-2 subunit in mice by alternative splicing. *J. Neurochem.* 56:713-715.
24. Moss, S.J., Ravindran, A., Mei, L., Wang, J. B., Kofuji, P., Haganir, R.L. and Burt, D.R. (1991) Characterization of recombinant GABA<sub>A</sub> receptors produced in transfected cells from murine alpha-1, beta-1 and gamma-2 subunit cDNAs. *Neurosci. Lett.* 123:265-268.
25. Ferris, C.D., Cameron, A., Bredt, D.S., Haganir, R.L. and Snyder, S.H. (1991) Inositol 1,4,5-triphosphate receptor is phosphorylated by cyclic AMP-dependent protein kinase at serines 1755 and 1589. *Biochem. Biophys. Res. Comm.* 175:192-198.
26. Wallace, B.G., Qu, Z. and Haganir, R.L. (1991) Agrin induces phosphorylation of the nicotinic acetylcholine receptor. *Neuron* 6:869-878.

27. Smart, T.G., Moss, S.J., Xie, X. and Haganir, R.L. (1991) GABA<sub>A</sub> receptors are differentially sensitive to zinc: Dependence on subunit composition. *Br. J. Pharmacol.* 103:1837-1839. PMID: PMC1908216.
28. Mei, L. and Haganir, R.L. (1991) Purification and characterization of a protein tyrosine phosphatase which dephosphorylates the nicotinic acetylcholine receptor. *J. Biol. Chem.* 266:16063-16072.
29. Wagner, K., Edson, K., Heginbotham, L., Post, M., Haganir, R.L. and Czernik, A. (1991) Determination of the tyrosine phosphorylation sites of the nicotinic acetylcholine receptor. *J. Biol. Chem.* 266:23784-23789.
30. Zeitlin, P.L., Crawford, I., Lu, L., Woel, S., Cohen, M.E., Donowitz, M., Montrose, M.H., Hamosh, A., Cutting, G.R., Gruenert, D., Haganir, R.L., Maloney, P. and Guggino, W.B. (1992) CFTR protein expression in primary and cultured epithelia. *Proc. Natl. Acad. Sci. USA*, 89:344-347.
31. Blackstone, C., Moss, S.J., Martin, L.J., Levey, A.I., Price, D.L. and Haganir, R.L. (1992) Biochemical characterization and localization of a non-NMDA glutamate receptor in rat brain. *J. Neurochem.* 58:1118-1126.
32. Ferris, C.D., Cameron, A.M., Bredt, D.S., Haganir, R.L. and Snyder, S.H. (1992) Autophosphorylation of inositol 1,4,5-triphosphate receptors. *J. Biol. Chem.* 267:7036-7041.
33. Ferris, C.D., Cameron, A.M., Haganir, R.L. and Snyder, S.H. (1992) Quantal calcium release by purified reconstituted inositol 1,4,5-trisphosphate receptors. *Nature* 356:350-352.
34. Blackstone, C.D., Levey, A.I., Martin, L.J., Price, D.L. and Haganir, R.L. (1992) Immunological detection of glutamate receptor subtypes in human CNS. *Ann. Neurol.* 31:680-683.
35. Moss, S.J., Doherty, C.A. and Haganir, R.L. (1992) Identification of the cAMP-dependent protein kinase and protein kinase C phosphorylation sites within the intracellular loops of the murine  $\beta$ 1,  $\gamma$ 2L and  $\delta$ 2S GABA<sub>A</sub> receptor subunits. *J. Biol. Chem.* 267:14470-14476.
36. Wang, J.B., Kofuji, P., Fernando, J.C.R., Moss, S.J., Haganir, R.L. and Burt, D.R. (1992) The  $\alpha$ 1,  $\alpha$ 2,  $\alpha$ 3 subunits of the GABA<sub>A</sub> receptor: Comparison in seizure prone and resistant mice during development. *J. Mol. Neurosci.* 3:177-184.
37. Moss, S.J., Smart, T.G., Blackstone, C.D. and Haganir, R.L. (1992) Functional modulation of GABA<sub>A</sub> receptors by cAMP-dependent protein phosphorylation. *Science* 257:661-665.
38. Martin, L.J., Blackstone, C.D., Haganir, R.L. and Price, D.L. (1992) Cellular localization of a metabotropic glutamate receptor in rat brain. *Neuron* 9:259-270.
39. Moss, S.J., Blackstone, C.D. and Haganir, R.L. (1993) Phosphorylation of recombinant non-NMDA glutamate receptors on serine and tyrosine residues. *Neurochem. Res.* 18:105-110.

40. Raymond, L.A., Blackstone, C.D. and Huganir, R.L. (1993) Phosphorylation and modulation of recombinant GluR6 glutamate receptors by cAMP-dependent protein kinase. *Nature* 361:637-641.
41. Wagner, K.R., Cohen, J.B. and Huganir, R.L. (1993) The 87K postsynaptic membrane protein from Torpedo is a protein tyrosine kinase substrate homologous to dystrophin. *Neuron* 10:511-522.
42. Martin, L.J., Blackstone, C.D., Levey, A.I., Huganir, R.L. and Price, D.L. (1993) AMPA glutamate receptor subunits are differentially distributed in rat brain. *Neuroscience* 53:327-358.
43. Martin, L.J., Blackstone, C.D., Huganir, R.L. and Price, D.L. (1993) The striatal mosaic in primates: Striosomes and matrix are differentially enriched in ionotropic glutamate receptor subunits. *J. Neurosci.* 13:782-792.
44. Martin, L.J., Blackstone, C.D., Levey, A.I., Huganir, R.L. and Price, D.L. (1993) Cellular localization of AMPA glutamate receptors within the basal forebrain magnocellular complex of rat and monkey. *J. Neurosci.* 13:2249-2263.
45. Tingley, W.G., Roche, K.W., Thompson, A.K. and Huganir, R.L. (1993) Regulation of NMDA receptor phosphorylation by alternative splicing of the C-terminal domain. *Nature* 364:70-73.
46. Craig, A.M., Blackstone, C.D., Huganir, R.L. and Banker, G. (1993) The distribution of glutamate receptors in cultured rat hippocampal neurons: Postsynaptic clustering of AMPA-selective subunits. *Neuron* 10:1055-1068.
47. Swope, S.L. and Huganir, R.L. (1993) Molecular cloning of two abundant protein tyrosine kinases in Torpedo electric organ that associate with the acetylcholine receptor. *J. Biol. Chem.* 268:25152-25161.
48. Paschen, W., Blackstone, C.D., Huganir, R.L. and Ross, C.A. (1994) Human GluR6 kainate receptor (GRIK2): Molecular cloning, expression, polymorphism and chromosomal assignment. *Genomics* 20:435-440.
49. Wagner, K.R., and Huganir, R.L. (1994) Tyrosine and serine phosphorylation of dystrophin and the 58 kDa protein in the postsynaptic membrane of Torpedo electric organ. *J. Neurochem.* 62:1947-1952.
50. Mei, L., Doherty, C.A. and Huganir, R.L. (1994) RNA splicing regulates the activity of a SH2 domain-containing protein tyrosine phosphatase. *J. Biol. Chem.*, 269:12254-12262.
51. Roche, K.W., Raymond, L.A., Blackstone, C. D. and Huganir, R.L. (1994) Transmembrane topology of the glutamate receptor subunit GluR6. *J. Biol. Chem.* 269:11679-11682.
52. Miles, K., Audigier, S.S.M., Greengard, P. and Huganir, R.L. (1994) Autoregulation of phosphorylation of the nicotinic acetylcholine receptor, *J. Neurosci.* 14:3271-3279.

53. Hoffman, P.W., Ravindran, A. and Haganir, R.L. (1994) Role of phosphorylation in desensitization of acetylcholine receptors expressed in xenopus oocytes. *J. Neurosci.* 14:4185-4195.
54. Krishek, B.J., Xie, X., Blackstone, C., Haganir, R.L., Moss, S.J. and Smart, T.G. (1994) Regulation of GABA<sub>A</sub> receptor function by protein kinase C phosphorylation. *Neuron* 12:1081-1095.
55. Qu, Z. and Haganir, R.L. (1994) Comparison of innervation and agrin induced tyrosine phosphorylation of the acetylcholine receptor. *J. Neurosci.* 14:6834-6841.
56. Swope, S.L. and Haganir, R.L. (1994) Binding of the nicotinic acetylcholine receptor to SH2 domains of fyn and fyn protein tyrosine kinases. *J. Biol. Chem.* 269:29817-29824.
57. Raymond, L.A., Tingley, W.G., Blackstone, C.D., Roche, K.W. and Haganir, R.L. (1994) Glutamate receptor modulation by protein phosphorylation. *J. Physiol. Paris* 88:181-192.
58. Blackstone, C.D., Murphy, T.M., Moss, S.J., Baraban, J.M. and Haganir, R.L. (1994) Cyclic AMP and synaptic activity-dependent phosphorylation of AMPA-preferring glutamate receptors. *J. Neurosci.* 14:7585-7593.
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18. Scannevin, R.H. and Huganir, R.L. (2000) Postsynaptic organization and regulation of excitatory synapses. *Nature Reviews Neurosci.* 1:133-141.
19. Garner, C.C., Nash J., and Huganir, R.L., (2000) PDZ domains in synapse assembly and signaling. *Trends Cell Biology.* 10:274-280
20. Song, I. and Huganir, R.L. (2002) Regulation of AMPA receptors during synaptic plasticity. *TINS* 25:578-588.
21. Thomas, G.M. and Huganir, R.L. (2004). MAPK Cascade Signaling and Synaptic Plasticity. *Nature Reviews Neurosci.* 5:173-183.
22. Shepherd, J.D., Huganir, R.L. (2007) The Cell Biology of Synaptic Plasticity: AMPA Receptor Trafficking. *Annu Rev Cell Dev Biol.* 23:613-643.

23. Beique, J.C., and Huganir, R.L. (2009) AMPA receptor subunits get their share of the pie. *Neuron*. 62(2): 254-68.
24. Anggono, V., Huganir, R.L. (2012) Regulation of AMPA receptor trafficking and synaptic plasticity. *Curr Opin Neurobiol*. 22(3): 461-9. PMID: PMC3392447.
25. Sheng, M., Malinow, R. Huganir, R. (2013) Neuroscience: Strength in numbers. *Nature*. 493(7433): 482-3.
26. Thomas, G.M., Huganir, R.L. (2013) Palmitoylation-dependent regulation of glutamate receptors and their PDZ domain-containing partners. *Biochem Soc Trans*. 41(1): 72-8. PMID: PMC3829716.
27. Huganir, R.L., Nicoll, R.A. (2013) AMPARs and synaptic plasticity: the last 25 years. *Neuron*. 80(3):704-17.
28. Volk, L., Chiu, S.L., Sharma, K., Huganir, R.L. (2015) Glutamate synapses in human cognitive disorders. *Annu. Rev. Neurosci*. 38:127-49.

#### **Invited Talks and Presentations**

- 1981 Gordon Research Conference on "Ion Transport and Membrane Phenomena," Tilton, NH
- 1982 Harvard University School of Medicine - Department of Physiology, Boston, MA
- 1983 University of Washington - Department of Pharmacology, Seattle, WA  
University of California - Department of Physiology and Biophysics, Irvine, CA
- 1984 Collegium Internationale Neuro-Psychopharmacologium 14th CINP Congress, Florence, Italy  
Thomas Jefferson University - Department of Biochemistry, Philadelphia, PA
- 1985 FASEB Summer Research Conference on Protein Kinases, Saxton's River, VT  
Columbia University College of Physicians and Surgeons - Department of Pharmacology, New York, NY  
National Institute of Health - Laboratory of Biochemistry, Bethesda, MD  
Gordon Research Conference on "Second Messengers and Protein Phosphorylation," Meriden, NH  
Gordon Research Conference on "Molecular Pharmacology" - Plymouth, NH
- 1986 Gordon Research Conference on "Ion Channels," New Hampton, NH  
New York Academy of Sciences, New York, NY  
International Symposium on "Purification, Biosynthesis, Regulation des Recepteurs

- Membranaires," Cap d'Agde, France
- Cornell University - Department of Biophysics, Ithaca, NY
- SUNY, Stony Brook - Department of Physiology, Stony Brook, NY
- University of Pennsylvania School of Medicine - Department of Pharmacology, Philadelphia, PA
- Roche Institute of Molecular Biology - Department of Neuroscience, Nutley, NJ
- 26th Annual Meeting of the American Society for Cell Biology, Mini-Symposium on "Regulation of Cell Function by Protein Phosphorylation and Dephosphorylation," Washington, D.C.
- 70th Annual Meeting of the Federation of American Societies for Experimental Biology, St. Louis, MO
- Annual Meeting of the American Society for Pharmacology and Experimental Therapeutics, Baltimore, MD
- Johns Hopkins University Medical School, Department of Neuroscience, Baltimore, MD
- International Symposium on the "Molecular Biology of Ion Channels," New Haven, CT
- 1987 Mt. Sinai Medical Center - Department of Biochemistry, New York, NY
- Columbia University College of Physicians and Surgeons - Department of Medicine, New York, NY
- Gordon Research Conference on "Second Messengers and Protein Phosphorylation," Meriden, NH
- Gordon Research Conference on "Ion Transport and Membrane Phenomena," Plymouth, NH
- Gordon Research Conference on "Molecular Pharmacology," Plymouth, NH
- International Society for Neurochemistry and American Society of Neurochemistry Joint Meeting - LaGuaira, Venezuela
- International Workshop on "Structural and Functional Aspects of the Cholinergic Synapse," Jerusalem, Israel
- 1988 Johns Hopkins University - Department of Biological Chemistry, Baltimore, MD
- Case Western Reserve University - Department of Physiology and Biophysics, Cleveland, OH
- 1989 Johns Hopkins University - Department of Neuroscience, Baltimore, MD
- Yale University School of Medicine - Department of Molecular and Cellular Physiology, New Haven, CT

- 13th International Conference on Biological Membranes, Crans-sur-Sierre, Switzerland
- Jacques Monod Conference on Receptors for Neurotransmitters and Neuropeptides, Paris, France
- New York Medical College - Department of Physiology, Valhalla, New York
- 1990 International Symposium on Neurotransmitter Receptors, Hiroshima, Japan
- Johns Hopkins University - Department of Neurology, Baltimore, MD
- Columbia University- College of Physicians and Surgeons- Center for Neurobiology and Behavior, New York, NY
- Johns Hopkins Centennial Symposium on Molecules and Medicine, Baltimore, MD
- University of Washington - Department of Pharmacology, Seattle, WA
- FASEB Summer Research Conference on Receptors: Regulation of Receptor Function, Saxton's River, VT
- VII International Congress on Neuromuscular Diseases, Munich, Germany
- International Conference on The Cholinergic Synapse, Berlin, Germany
- Johns Hopkins University - Department of Pharmacology & Molecular Sciences, Baltimore, MD
- University of Medicine and Dentistry of New Jersey and Rutgers, The State University of New Jersey - Center for Advanced Biotechnology and Medicine, and Department of Pharmacology, Piscataway, NJ
- Annual Meeting of the Society for Neuroscience Symposium on Regulation of Nicotinic Acetylcholine Receptor Expression and Function, St. Louis, MO
- Vanderbilt University - Department of Pharmacology, Nashville, TN
- 1991 24th Annual Winter Conference on Brain Research, Vail, CO
- University of North Carolina - Department of Physiology, Chapel Hill, NC
- University of Miami - Department of Physiology & Biophysics, Miami, FL
- The Rockefeller University - Laboratory of Cellular Physiology & Immunology, New York, NY
- University of Medicine and Dentistry of New Jersey - Department of Pharmacology, Piscataway, NJ
- Yale University - Department of Cell Biology, New Haven, CT
- University of Maryland at Baltimore - Department of Pharmacology and Experimental

- Therapeutics, Baltimore, MD
- University of Vermont - Department of Anatomy and Neurobiology
- 1992 University of California at San Francisco - Department of Physiology, San Francisco, CA
- Stanford University - Department of Molecular and Cellular Physiology, Stanford, CA
- The Salk Institute - Department of Molecular Neurobiology, San Diego, CA
- Fourth International Symposium on Excitatory Amino Acids on Molecular Biology of EAA Receptors, Yosemite, CA
- Keystone Symposium on Synapse Formation and Function: The Neuromuscular Junction and the Central Nervous System, Big Sky, MT
- Brandeis University - Department of Biochemistry, Waltham, MA
- Harvard University - Department of Neurobiology, Boston, MA
- Washington University - Department of Cell Biology & Physiology, St. Louis, MO
- Parke Davis Pharmaceutical Research Seminar, Ann Arbor, MI
- Racker Symposium, Cornell University, Ithaca, NY
- FASEB Summer Research Conference on Protein Phosphatases, Copper Mountain, CO
- Bristol-Myers Squibb Research Seminar, Wallingford, CT
- University of Virginia - Department of Neuroscience, Charlottesville, VA
- Emory University - Department of Anatomy and Cell Biology, Atlanta, GA
- Cornell University - Section of Biochemistry, Molecular and Cell Biology, Ithaca, NY
- 1993 Case Western Reserve University - Department of Neuroscience, Cleveland, OH
- National Institutes of Health - Laboratory of Cellular and Molecular Neurophysiology, Bethesda, MD
- Max-Planck-Institut für Biophysikalische Chemie, Gottingen, Germany
- University College London - Department of Biology, London, England
- University of Maryland - Department of Biological Sciences, Baltimore, MD
- Columbia University - Department of Biological Sciences, New York, NY
- Keystone Symposium on Molecular Biology of Neuronal Signal Transduction, Taos, NM
- Parke-Davis Symposium on Recent Advances in Excitatory Amino Acid Research, Ann Arbor, MI

- Georgetown University - Department of Pharmacology, Washington, D.C.
- Molecular Biological Laboratory, Woods Hole, MA
- Gordon Research Conference on Neural Plasticity, Wolfeboro, NH
- University of Ottawa - Department of Anatomy and Neurobiology, Ottawa, Ontario, Canada
- University of Maryland - Department of Physiology and Experimental Therapeutics, Baltimore, MD
- Annual Meeting of the American Epilepsy Society on Regulation of Glutamate Receptors by Protein Phosphorylation, Miami, FL
- 1994 Emory University - Department of Physiology, Atlanta, GA
- Association pour la Neuro-Psycho-Pharmacologie Symposium on Activity Dependent Neuronal Plasticity, Paris, France
- Vollum Institute - Department of Neuroscience, Portland, OR
- Baylor College of Medicine - Department of Molecular Physiology and Biophysics, Houston, TX
- National Institutes of Health - Laboratory of Biochemistry, Bethesda, MD
- Glaxo Research Institute - Research Triangle Park, NC
- Molecular Biology Laboratory - Woods Hole, MA
- Duke University - Department of Pharmacology, Durham, NC
- International Symposium on The Cholinergic Synapse: Structure, Function and Regulation, Baltimore, MD
- Annual Meeting of the Society for Neuroscience Symposium on Structure, Function and Regulation of Glutamate Receptors, Miami, FL
- 1995 Winter Conference on Brain Research on Regulation of Glutamate and GABA<sub>A</sub> Receptor Function by Phosphorylation, Steamboat Springs, CO
- NIDA Addiction Research Center seminar series – National Institutes of Health, Bethesda, MD
- Albert Einstein College of Medicine – Department of Neuroscience, Bronx, NY
- Brown University – Department of Neuroscience, Providence, RI
- University of Pittsburgh – Department of Neurobiology, Pittsburgh, PA
- Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting Sunday



- Symposium: Molecular Biology of Synaptic Transmission, Fort Lauderdale, FL  
Cornell University – Department of Physiology, New York, NY
- 15<sup>th</sup> Biennial Meeting of the International Society for Neurochemistry (ISN), Kyoto, Japan
- 9<sup>th</sup> International Conference on Second Messengers and Phosphoproteins: Signal Transduction in Health and Disease, Nashville, TN
- Worcester Foundation for Experimental Biology, Shrewsbury, MA
- 1996 1<sup>st</sup> Congress of the German Neuroscience Society Symposium, Heidelberg, Germany
- 29<sup>th</sup> Annual Winter Conference on Brain Research, Snowmass Village, CO
- American Society for Pharmacology and Experimental Therapeutics – Experimental Biology '96, Washington, D.C.
- Lilly Research Laboratories, Indianapolis, IN
- University of Maryland at Baltimore – Department of Pharmaceutical Sciences, Baltimore, MD
- Columbia University – Stephen M. Schuetze Memorial Lecture, New York, NY
- Northwestern University Medical School – Department of Physiology, Chicago, IL
- Harvard Medical School – Department of Pharmacology, Boston, MA
- Cold Spring Harbor Laboratory, Banbury Center Plasticity of Glutamate Receptors, Cold Spring Harbor, NY (Organizer)
- 3<sup>rd</sup> Jacques Monod Conference on Protein Phosphorylation: A Universal Cellular Language Spoken with Many Accents, Aussois, France
- SUNY – Department of Biochemistry and Cell Biology, Stony Brook, NY
- CoCensys, Inc. – 5<sup>th</sup> annual satellite symposium of ASN: Excitotoxicity and Apoptosis in Neurodegeneration and Cerebral Ischemia: Molecular Mechanisms and Therapeutic Implications, Washington, D.C.
- 26<sup>th</sup> Annual Meeting, Society for Neuroscience – Glutamatergic Neurotransmission: A View From the Dendrite, Washington, D.C.
- University of Miami – Department of Molecular and Cellular Pharmacology, Miami, FL
- 1997 30<sup>th</sup> Annual Winter Conference on Brain Research, Breckenridge, CO
- Mt. Sinai Medical Center, New York, NY
- Kennedy Krieger Institute – Kennedy Fellow's Seminar Series, Baltimore, MD

DeCamp Neuroscience Symposium – Rockefeller University, New York, NY

University of Alabama at Birmingham – Neurobiology Research Center, Birmingham, AL

Stanford University – Beckman Center for Molecular and Genetic Medicine, Stanford, CA

University of California, San Francisco – Neuroscience Seminar Series, San Francisco, CA

NeuroScience Network Annual Meeting, Vancouver, British Columbia, Canada

Gordon Research Conference on Excitatory Amino Acids and Brain Function, Plymouth State College, Plymouth, NH

Cellular Regulation by Protein Phosphorylation (ASBMB Satellite Symposium), Seattle, WA

University of California - Joint Seminars in Neuroscience, Los Angeles, CA

Yale University – Department of Pharmacology, New Haven, CT

University of Pennsylvania – David Mahoney Institute of Neurological Sciences, Philadelphia, PA

1998 NIH Neuroscience Lecture Series, Bethesda, MD

Brandeis University – Life Sciences Seminar Series, Waltham, MA

Keystone Symposium on Synapse Formation and Function: From Neuromuscular Junction to CNS, Park City, UT

University of Toronto – Distinguished Speaker in Neuroscience, Toronto, Ontario, Canada

Children’s Hospital Division of Neuroscience Seminar Series – Harvard Medical School, Boston, MA

Massachusetts General Hospital – Harvard Medical School, Charlestown, MA

ASBMB Meeting Satellite Symposium on Structural Basis for Specificity, Washington, D.C.

Gordon Research Conference on The Cell Biology of the Neuron, Plymouth State College, Plymouth, NH

Cold Spring Harbor Laboratory – Molecular Cloning of Neural Genes, Cold Spring Harbor, NY

Cold Spring Harbor Laboratory – Neurobiology: Brain Development and Function, Cold Spring Harbor, NY

- 13<sup>th</sup> International Congress for Pharmacology – Glutamate Receptor Subtypes, Munich, Germany
- Gordon Research Conference on Molecular and Cellular Neurobiology, Beijing, China
- Howard University – Department of Pharmacology, Washington, D.C.
- University of Chicago – Seminar series sponsored by the Committee on Cell Physiology and Neurobiology, Chicago, IL
- 7<sup>th</sup> Neuropharmacology Conference on Ionotropic Glutamate Receptors, Los Angeles, CA
- Columbia University – Center for Neurobiology and Behavior, New York, NY
- 1999 22<sup>nd</sup> International Taniguchi Foundation Symposium on Brain Sciences, Kona, Hawaii
- Signal Transduction Seminar Series- Parke-Davis Pharmaceutical Research, Ann Arbor, MI
- Protein Trafficking Workshop – NIH-Johns Hopkins University, Annapolis, MD
- Gordon Conference on Excitatory Amino Acids – Plymouth State College, Plymouth, NH
- EMBO/FMI Conference on Neuronal Circuits: From Molecules to Organisms, Monte Verita Ascona, Switzerland
- Annual Meeting of the Society for Neuroscience – Miami Beach, FL
- Journal of Physiology Symposium on Neuronal Compartmentalization: Channels, Receptors and Signalling (SFN Satellite Symposium), Miami Beach, FL
- Invited Lecturer – Pfizer Central Research, Groton, CT
- Neurobiology Department Seminar – Duke University Medical Center, Durham, NC
- Center for Developmental Biology – University of Texas Southwestern Medical Center, Dallas, TX
- 2000 Adler Foundation Symposium on Alzheimer’s Disease, La Jolla, CA
- Department of Pharmacology Seminar – Georgetown University, Washington, D.C.
- AAAS Annual Meeting – Symposium Organizer “Synapses, Memory and Development of the Brain”, Washington, D.C.
- New York University – Spring Seminar Series, New York, NY
- Y2K Hippocampal Research Conference, Georgetown, Grand Cayman

- Juan March Workshop on Dendrites – Columbia University, New York
- Marine Biological Institute, Neurobiology and Physiology Sections lectures, Woods Hole, MA
- Cold Spring Harbor Laboratories (Banbury Center), Cold Spring Harbor, NY
- Department of Pharmacology Seminar - University of Colorado, Denver, CO
- ASPET Ray Fuller Symposium, Baltimore, MD
- Society for Neuroscience Annual Meeting, New Orleans, LA
- Vollum Institute, Oregon Health Sciences University, Portland, OR
- 2001 NINDS Workshop “Re-Establishing Connectivity in the Damaged Spinal Cord”, Bethesda, MD
- Medical Scientist Lecture Series - University of California, Irvine, CA
- Sackler Colloquium "Neural Signaling" – National Academy of Sciences, Washington, D.C.
- Keystone Symposium: The Synapse/Hippocampus: The Integration of Molecular Mechanisms and Cognitive Function, Taos, NM
- Cellular and Molecular Physiology seminar - Yale University, New Haven, CT
- Department of Psychiatry and Behavioral Science - Stanford University, Stanford, CA
- Hyseq, Inc., Sunnyvale, CA
- Department of Molecular and Cellular Biology Seminar - University of California, Berkeley, CA
- Gordon Conference on Excitatory Amino Acids, Il Ciocco, Italy
- Wyeth-Ayerst Research, Monmouth Junction, NJ
- HHMI Scientific Meeting: The Nervous System, Chevy Chase, MD
- Center for ALS Research Symposium, Baltimore, MD
- Neuroscience Program Seminar - Washington University, St. Louis, MO
- Neuropharmacology Conference, San Diego, CA

RIKEN-MIT Symposium – MIT, Cambridge, MA

Giovanni Armenise-Harvard Foundation Public Conference “The Changing Brain”,  
Milan, Italy

2002 Aventis Pharmaceuticals, Bridgewater, NJ

University of Michigan, Department of Molecular, Cellular and Developmental Biology,  
Ann Arbor, MI

Winter Conference on Brain Research, Aspen, CO

Gordon Research Conference on Molecular and Cellular Neurobiology, Hong Kong,  
China

Gordon Research Conference on Cell Biology of the Neuron, Newport, RI

XIVth World Congress of Pharmacology, San Francisco, CA

Rockefeller University, New York, NY

University of Maryland, Baltimore, MD

2003 University of Wisconsin, Department of Physiology, Madison, WI

Northwestern University, Department of Neurobiology and Physiology, Evanston, IL

Columbia University, Department of Biochemistry, New York, NY

Northwestern University Institute for Neuroscience, Chicago, IL

University of Chicago, Committee on Neurobiology Seminar Series, Department of  
Neurobiology, Pharmacology and Physiology, Chicago, IL

University of Washington, Department of Physiology and Biophysics, Seattle, WA

FASEB Summer Research Conference on Ion Channel Regulation, Tucson, AZ

Sention, Inc., Providence, RI

Gordon Conference on Excitatory Amino Acids and Brain Function, Mt. Holyoke  
College, S. Hadley, MA

HHMI Scientific Meeting, Chevy Chase, MD

Center for ALS Research Symposium, Baltimore, MD

University of North Carolina, Department of Neuroscience Symposium, Chapel Hill, NC

Neuropharmacology Conference (Co-Organizer), New Orleans, LA

University of Pennsylvania - David Mahoney Institute of Neurological Sciences, Philadelphia, PA

2004 Winter Conference on Brain Research, Copper Mountain, CO

National Institutes of Health – The Synapse: Molecular Mechanisms of Plasticity, St. Michaels, MD

Cold Spring Harbor Laboratory – The Banbury Center, “Neuronal and Behavioral Effects of Ras/Mapk Signaling”, Cold Spring Harbor, NY

Catedra Santiago Grisolia, The Award and Master Courses of Catedra, Valencia, Spain

Cold Spring Harbor Laboratory Conference on “Channels, Receptors, Synapses”, Cold Spring Harbor, NY (Co-Organizer)

University of Maryland, Bioscience Research & Technology Review Day, College Park, MD

Robert Packard Center for ALS Research, 4<sup>th</sup> Annual Symposium, Baltimore, MD

Institut De Neurobiologie - Centre National De La Recherche Scientifique, “Conferences en Neurobiologie Ladislav Tauc”, Gif sur Yvette, France

2005 University of California San Diego, Neural Plasticity Symposium, San Diego, CA

Cornell University, "Regulation of neurotransmitter receptor function and synaptic plasticity in the brain", Ithaca, NY

Massachusetts Institute of Technology, "Receptors, Synapses and Memories", Cambridge, MA

INRC, "Regulation of glutamate receptors and brain function", Annapolis, MD

Marine Biology Laboratory, "Central Synapses", Woods Hole, MA

Skirball Institute, "Regulation of neurotransmission receptors and synaptic plasticity in the brain", New York, NY

Synaptic Function and Plasticity Conference, "Regulation of the AMPA receptor and synaptic plasticity", Vancouver, Canada

Gordon Research Conference, "Regulation of the AMPA receptor and synaptic plasticity", Aussios, France

Rockefeller University, "Regulation of glutamate receptor function and synaptic plasticity", New York, NY

AANCP 40th Annual Meeting, "Regulation of AMPA Receptor Function and Synaptic Plasticity", Waikoloa, HI

2006 NINDA, "Regulation of Glutamate Receptors and Brain Function", Baltimore, MD

University of Utah, "Receptors, Synapses and Memory", Salt Lake City, UT

Stanford University, "Receptors, Synapses and Memory", Stanford, CA

University of California Davis, "Receptors, Synapses and Memory", Davis, CA

Brown University, "Regulation of Glutamate Receptor Function and Synaptic Plasticity in the Brain", Providence, RI

Yale University, "Receptors, Synapses and Memory", New Haven, CT

Gordon Research Conference, Cell Biology of the Neuron, "Regulation of Glutamate Receptor Function and Synaptic Plasticity in the Brain", New London, NH

Gordon Research Conference, Molecular and Cellular Neurobiology, "Regulation of Glutamate Receptor Function and Synaptic Plasticity", Hong Kong, China

Protein Society, "Protein-protein Interactions at the Synapse", San Diego, CA

Harvard University, "Neurotransmitter and Receptor Regulation and Brain Function", Boston, MA

SFN Annual Meeting- Neuropharmacology Conference, "Regulation of AMPA receptor function during synaptic plasticity", Atlanta, GA

HHMI Annual Meeting, "Regulation of Neurotransmitter Receptors and Synaptic Plasticity in the Brain", Janelia Farm Research Campus, VA

2007 University of Texas, Southwestern, "Regulation of Glutamate Receptor Function and Synaptic Plasticity in the Brain", Dallas, TX

Winter Conference on Neural Plasticity, "The Role of *Arc* in Plasticity and Behavior", Moorea, French Polynesia

Gordon Research Conference, Excitatory Synapses and Brain Function, "Regulation of AMPA receptors and synaptic plasticity", New London, NH

Gordon Research Conference, Calcium Signaling, "Glutamate receptor signaling at synapses", Tilton, NH

HHMI Annual Meeting, "Regulation of Neurotransmitter Receptors and Synaptic Plasticity in the Brain", Janelia Farm Research Campus, VA

Northwestern University, "Regulation of excitatory synaptic function of the brain", Chicago, IL

Axelrod Prize Symposium, "Receptors, Synapses, and Memory", Annual Meeting Society for Neuroscience, San Diego, CA

2008 HHMI-NIH Research Scholars, "Receptors, Synapses and Memory", Bethesda, MD

Gordon Research Conference, Mechanisms of Epilepsy and Neuronal Sync, "Regulation of Glutamate Receptor Function in the Brain", Waterville, ME

University of Tokyo, "Receptors, Synapses and Memories", Tokyo, Japan

Erasmus MC, "Regulation of Glutamate Receptors and Synaptic Plasticity in the Brain", Rotterdam, Netherlands

University of Bordeaux, "Regulation of Glutamate Receptors and Brain Function", Bordeaux, France

Biogen Idec, "Regulation of Glutamate Receptor Function in the Brain", Boston, MA

University of Maryland, Baltimore County, "Regulation of Neurotransmitter Receptor and Brain Function", Baltimore, MD

Tufts University, "Glutamate receptor trafficking and synaptic plasticity", Boston, MA

2009 University of Washington, "Receptors, Synapses and Memories", Seattle, WA

Johns Hopkins University, Clinical Neurosciences Seminar, "Regulation of Neurotransmitter Receptor Function and Synaptic Plasticity in the Brain", Baltimore, MD

Duke University Medical Center, Department of Neurobiology Seminar, "Regulation of Neurotransmitter Receptor Function and Synaptic Plasticity in the Brain", Durham, NC



Albert Einstein College of Medicine, Department of Neuroscience Seminar, “Regulation of Neurotransmitter Receptor Function and Synaptic Plasticity in the Brain”, Bronx, NY

NIH, NIH Neuroscience Seminar Series, “Receptors, Synapses and Memories”, Bethesda, MD

International Congress on Amino Acids, Peptides and Proteins, “The trafficking of ionotropic glutamate receptors and synaptic plasticity”, Vienna, Austria

University of Alabama at Birmingham, “Regulation of Neurotransmitter Receptor Function and Synaptic Plasticity in the Brain”, Birmingham, AL

SFN Annual Meeting, Special Lecture, “Receptors, Synapses and Memories”, Chicago, IL

2<sup>nd</sup> European Synapse Meeting, “Regulation of AMPA receptor function and synaptic plasticity in the brain”, Gottingen, Germany

2010 43<sup>rd</sup> Annual Winter Conference on Brain Research, Breckenridge, CO

University of California, San Francisco, Gladstone Institute of Neurological Disease, "Regulation of Glutamate Receptor Function and Synaptic Plasticity in the Brain", San Francisco, CA

12<sup>th</sup> International Neuroscience Winter Conference, Solden, Austria

Johns Hopkins University, Biological Chemistry Seminar, “Regulation of Neurotransmitter Receptor Function and Synaptic Plasticity in the Brain”, Baltimore, MD

University of California, Irvine, Department of Anatomy & Neurobiology and EpiCenter Annual Symposium, “Regulation of Neurotransmitter Receptors and Brain Function”, Irvine, CA

CAMBRIDGE BIOLINK: Neuroplasticity and the Prospect of Therapy and Repair, “Regulation of Neurotransmitter Receptors and Brain Function in Health and Disease”, Cambridge, MA

2011 University of California, San Diego, Neuroscience Program Seminar, “Regulation of Neurotransmitter Receptor Function and Synaptic Plasticity in the Brain”, San Diego, CA

Winter Conference on Neural Plasticity, "Calcium-Permeable AMPA Receptor Dynamics Mediate Fear Memory Erasure", Moorea, French Polynesia

HHMI Janelia Farms Seminar, “Regulation of AMPA Receptor Function and Synaptic Plasticity in the Brain”, Janelia Farm Research Campus, VA

Richard L. Huganir, Ph.D.  
Curriculum Vitae

Keynote Speaker Inaugural Annual Forum, University of Maryland School of Pharmacology, "Receptors, Synapses and Memories", Baltimore, MD

The Picower Lecture, Picower Institute for Learning and Memory, "Receptors, Synapses and Memories", Cambridge, MA

National Institute on Drug Abuse Seminar, "Regulation of Glutamate Receptor Function and Synaptic Plasticity in the Brain", Baltimore, MD

Marine Biological Institute, Neurobiology Lectures, "Regulation of Glutamate Receptor Function and Synaptic Plasticity in the Brain", Woods Hole, MA

Gordon Research Conference on Excitatory Synapses and Brain Function, "Regulation of AMPA Receptors and Synaptic Plasticity in the Brain", Stonehill College in Easton, MA

8<sup>th</sup> IBRO World Congress of Neuroscience, "Regulation of Glutamate Receptor Function and Synaptic Plasticity in the Brain", Florence, Italy

Keynote Speaker NIMH Annual Scientific Retreat, "Regulation of Neurotransmitter Receptors and Brain Function", Lancaster, PA

7<sup>th</sup> International Meeting on Metabotropic Glutamate Receptors, "mGluR1 Regulation of AMPA Receptors and Fear Memory", Taormina, Italy

Zelicof Family Dinners with the Dean, Johns Hopkins University, "Receptors, Synapses and Memories", Baltimore, MD

Johns Hopkins Medicine Brain Science Institute, Brain Night, "Receptors, Synapses and Memories", Baltimore, MD

The Molecular and Cellular Cognition Society Annual Meeting, "The Role of Calcium-Permeable AMPA Receptors in Fear Conditioning and Fear Erasure", Washington, DC

Children's Hospital/Harvard Medical School Seminar Series, "Regulation of Neurotransmitter Receptors and Synaptic Plasticity in the Brain", Boston, MA

American College of Neuropsychopharmacology Annual Meeting, "Regulation of AMPA Receptor Function During Fear Memory and Erasure", Waikoloa, HI

2012 44<sup>th</sup> Annual Winter Conference for Brain Research, Snowbird, UT

University of Texas, Southwestern Medical Center Neuroscience Seminar, "Regulation of Neurotransmitter Receptor Function and Synaptic Plasticity in the Brain", Dallas, TX

Richard L. Huganir, Ph.D.  
Curriculum Vitae

Baylor University/University of Texas Medical School at Houston Joint Seminar, “Regulation of Neurotransmitter Receptor Function and Synaptic Plasticity in the Brain”  
Houston, TX

University of California, Davis Joint Seminars in Molecular Biology, “Regulation of Neurotransmitter Receptor Function and Synaptic Plasticity in the Brain”, Davis, CA

Temple University School of Medicine and Shriners Hospitals Pediatric Research Center, Center for Neural Repair and Rehabilitation, “Regulation of Neurotransmitter Receptor Function and Synaptic Plasticity in the Brain”, Philadelphia, PA

Plenary Speaker American Society for Neurochemistry Annual Meeting, “Regulation of Neurotransmitter Receptor Function and Synaptic Plasticity in the Brain”, Baltimore, MD

DSRC: What is Information in the Brain Workshop, “Can We Image Memory Formation and Erasure in the Brain?”, Arlington, VA

Neurochemistry-Molecular Neurobiology Joint Seminar, University of Tokyo, “Regulation of Neurotransmitter Receptor Function and Synaptic Plasticity in the Brain”, Tokyo, Japan

132<sup>nd</sup> Plenary Lecture - Annual Meeting of the Pharmaceutical Society of Japan, “Regulation of Neurotransmitter Receptor Function and Synaptic Plasticity in the Brain”, Sapporo, Japan

The George Washington Institute for Neuroscience at the George Washington University/Center for Neuroscience Research at Children’s National Medical Center Neuroscience Seminar, “Regulation of Neurotransmitter Receptor Function and Synaptic Plasticity in the Brain”, Washington, DC

Gordon Research Conference on Molecular & Cellular Neurobiology, “Regulation of Neurotransmitter Receptor Function and Synaptic Plasticity in the Brain”, Hong Kong University of Science and Technology, Hong Kong, China

8<sup>th</sup> Annual FENS Forum of Neuroscience, “Role of Calcium Permeable AMPA Receptors in Fear Memory and Erasure”, Barcelona, Spain

McGill University Seminar, “Regulation of Receptors, Synapses and Memories”, Montreal, Canada

SFN Satellite Meeting, Phosphatases in Neuroscience, “Regulation of AMPA receptors by Protein Phosphorylation”, New Orleans, LA

Simons Foundation Annual Meeting, “High-Throughput Screens for Synaptogenic Factors”, New York, NY

- 2013 Sanford Burnham Medical Research Institute President's Lecture, "Regulation of Receptors, Synapses and Memory", La Jolla, CA
- Johns Hopkins University, Biochemistry, Cellular and Molecular Biology Seminar, "Regulation of Receptors, Synapses and Memory", Baltimore, MD
- Wenthold Lecture, NIH Neuroscience Seminar Series, "Regulation of Glutamate Receptors and Synaptic Plasticity in the Brain", Bethesda, MD
- Mahoney Institute of Neurological Sciences Colloquium Series at the University of Pennsylvania, "Regulation of Receptors, Synapses and Memories", Philadelphia, PA
- 2<sup>nd</sup> Biannual Austin Conference on Learning & Memory Symposium, "Regulation of Glutamate Receptor Function and Learning and Memory in the Brain", Austin, TX
- Keynote Speaker, ISN 2013 Synapse Satellite Meeting "Emerging Topics in Synapse Function: Molecular Mechanisms, Circuit Function and Disease", "Receptors, Synapses and Memories", Playa del Carmen, Mexico
- Gordon Research Conference on Excitatory Synapses and Brain Function, "Regulation of Glutamate Receptors and Synaptic Plasticity in the Brain", Les Diablerets, Switzerland
- Institut du Fer à Moulin, "Regulation of Glutamate Receptors and Synaptic Plasticity in the Brain", Paris, France
- C. Ladd Prosser Memorial Lecture at the University of Illinois, "Receptors, Synapses and Memory", Urbana-Champaign, IL
- 2014 Australian Neuroscience 34<sup>th</sup> Annual Meeting, "Receptors, Synapses and Memory", Adelaide, Australia
- Queensland Brain Institute, "Receptors, Synapses and Memories", Brisbane Australia
- IBBS, Science Writers' Boot Camp, "Making and Erasing Memories", Washington, DC
- Irwin Levitan Symposium, "Neuromodulation of Ligand Gated Ion Channels", Lambertville, NJ
- University College London, "Receptors, Synapses and Memories", London, England
- Karolinska Institutet, "Receptors, Synapses and Memories", Stockholm, Sweden
- University of Copenhagen, "Receptors, Synapses and Memories", Copenhagen, Denmark

Gordon Research Conference on Synaptic Transmission, “Visualizing AMPA receptor synaptic plasticity in vivo”, Waterville Valley, NH

8<sup>th</sup> International Meeting on Metabotropic Glutamate Receptors, “Modulation of AMPA Receptors and Synaptic Plasticity”, Taormina, Italy

2015 48<sup>th</sup> Annual Winter Conference on Brain Research, Big Sky, MT

Genentech, “Regulation of Neurotransmitter receptors and brain function in health and disease”, South San Francisco, CA

Gladstone Institute, University of California, San Francisco, “Regulation of Neurotransmitter receptors and brain function in health and disease”, San Francisco, CA

Gordon Research Conference on Dendrites: Molecules, Structure & Function, “Visualizing AMPA Receptor Plasticity *In Vivo*”, Ventura, CA

Chicago Chapter for the Society for Neuroscience Annual Meeting, “Receptors, Synapses and Memories”, Chicago, IL

Max Planck Sunposium, “Regulation of Neurotransmitter receptor function and synaptic plasticity in the brain”, Palm Beach Gardens, FL

University of Maryland, Program in Neuroscience Seminar Series, “Regulation of Neurotransmitter receptor function and synaptic plasticity in the brain”, Baltimore, MD

Goldman-Rakic Distinguished Lecture at Yale University, “Receptors, Synapses and Memories”, New Haven, CT

Neuroscience School of Advanced Studies course on “Synaptic Plasticity and Neural Circuit Remodeling”, Florence, Italy

Gordon Research Conference on Excitatory Synapses & Brain Function , “Mechanisms of AMPA Receptor Regulation”, Newport, RI

18th International Symposium on Chromaffin Cell Biology, “Visualization of AMPA Receptor Synaptic Plasticity In Vivo”, Cairns, Australia

“From synapses to circuits and behavior”, Satellite of 2015 ISN/ANS Annual Meeting, “Regulation of AMPA Receptors and Synaptic Plasticity in the Brain”, Cairns, Australia

Washington University in St. Louis Neuroscience Retreat, "Regulation of Neurotransmitter Receptors and Synaptic Plasticity in the Brain", Grafton, IL

Richard L. Huganir, Ph.D.  
Curriculum Vitae

Stanley Center's Biennial Symposium, Severe Mental Illness: From Genetics to Translational Biology, "Schizophrenia Risk Genes and Synapse Development", Cambridge, MA

2015 Picower Fall Symposium on "Synapses in Health and Disease", "Regulation of Excitatory Synaptic Function and Brain Plasticity", Cambridge, MA

Symposium to Honor Paul Greengard on his 90th Birthday, "Memories of the Greengard Lab: Neurotransmitter Receptors and Synaptic Plasticity", New York, NY

2016 Science of Learning Biennial Symposium, "Synaptic Plasticity Mechanisms Underlying Learning in the Brain", Baltimore, MD

University of Utah Neuroscience Seminar Series, "Regulation of Glutamate Receptors and Synaptic Plasticity in the Brain", Salt Lake City, UT

Stanford Neuroscience Seminar Series, "Regulation of Neurotransmitter Receptor Function During Synaptic Plasticity in the Brain", Palo Alto, CA

University of North Carolina at Chapel Hill Neuroscience Center Weekly Seminar, "Regulation of Neurotransmitter Receptors and Synaptic Plasticity in the Brain", Chapel Hill, NC