

CURRICULUM VITAE

NAME: John H. Byrne

PRESENT TITLE: June and Virgil Waggoner Chair
Professor and Chairman
Department of Neurobiology and Anatomy
University of Texas Medical School at Houston
P. O. Box 20708, Houston, Texas 77225
(713) 500-5602

CITIZENSHIP: U.S.

UNDERGRADUATE EDUCATION:

1963-1968 Polytechnic Institute of New York University, B.S. 1968
(Electrical Engineering)

GRADUATE EDUCATION:

1968-1970 Polytechnic Institute of New York University, M.S. 1970
(Bioengineering) Advisor: Sid Deutsch

1970-1973 Polytechnic Institute of New York University, Ph.D. 1973
(Bioengineering) Advisor: Eric Kandel

POSTGRADUATE TRAINING:

6/73-9/74 Research Fellow, Department of Neurobiology
and Behavior, Public Health Research Institute,
New York. Advisor: Eric Kandel

8/73-6/75 Research Fellow, Department of Psychiatry
College of Physicians & Surgeons of Columbia
University, New York and Department of
Behavioral Physiology, New York State Psychiatric
Institute, New York. Advisor: Eric Kandel

6/75-12/75 Research Fellow, Division of Neurobiology and
Behavior, Department of Physiology, College of
Physicians & Surgeons of Columbia University,
New York. Advisor: Eric Kandel

ACADEMIC APPOINTMENTS:

1976-1981 Assistant Professor, Department of Physiology, School of Medicine,
University of Pittsburgh

1981-1982 Associate Professor, Department of Physiology, School of Medicine,
University of Pittsburgh

1981-1982 Vice Chairman (Neuroscience), Department of Physiology, School of
Medicine, University of Pittsburgh

1982-1985	Associate Professor, Department of Physiology and Cell Biology, University of Texas Medical School at Houston
1982-present	Member, Graduate School of Biomedical Sciences, The University of Texas-Houston Health Science Center
1985-1987	Professor, Department of Physiology and Cell Biology, The University of Texas Medical School at Houston
1987-present	Professor and Chairman, Department of Neurobiology and Anatomy, The University of Texas Medical School at Houston
1992-present	Director, Neuroscience Research Center, The University of Texas-Houston Health Science Center
1994-present	Adjunct Professor, Department of Psychology, Rice University, Houston, Texas
1994-present	Adjunct Professor, Department of Electrical and Computer Engineering, Rice University, Houston, Texas
2001-2003	June and Virgil Waggoner Distinguished Professor of Neurobiology and Anatomy
2003-present	June and Virgil Waggoner Chair of Neurobiology and Anatomy
2004-2011	Assistant Dean for Research Affairs, The University of Texas Medical School at Houston
2005-present	Director, Office of Postdoctoral Affairs, The University of Texas-Houston Health Science Center
2008-present	Adjunct Professor, Department of Biomedical Engineering, The University of Texas
2011-present	Associate Dean for Research Affairs, The University of Texas Medical School at Houston

PROFESSIONAL ORGANIZATIONS:

1973-present	American Association for the Advancement of Science (Chair, Section on Neuroscience, 2008-2009)
1973-present	Sigma Xi
1974-present	Society for Neuroscience (Treasurer, 1992-1993)
1976-present	American Physiological Society
1976-present	Biophysical Society
1987-present	Association of Anatomy, Cell Biology, and Neurobiology Chairpersons (Councilor, 2006-2008)
1992-present	International Neural Network Society
1994-present	Dana Alliance for Brain Initiatives

1995-present	International Society for Neuroethology
1995-present	Society for Research on Biological Rhythms
2003-present	Association of Medical School Neuroscience Department Chairpersons (President, 2008, 2009)
2009-present	Molecular and Cellular Cognition Society

HONORS AND AWARDS:

1969	NIH Predoctoral Fellowship
1973	NIH Postdoctoral Traineeship
1975	NIH Postdoctoral Fellowship
1978	NIH Research Career Development Award
1986	NIMH Research Scientist Development Award (Level II)
1986	Jacob Javits Neuroscience Investigator Award
1987	Dean's Lecture, The University of Texas Medical School at Houston
1992	Fellow, Japan Society for the Promotion of Science
1992	Special Lecture, 35 th Annual Meeting of the Japanese Neurochemical Society
1993	NIMH Research Scientist Award
1993	Outstanding Faculty Award, Graduate School of Biomedical Sciences, The University of Texas-Houston Health Science Center.
1998	University of Texas-Houston Health Science Center President's Scholar for Research
2001	June and Virgil Waggoner Distinguished Professorship
2001	Fellow, American Association for the Advancement of Science
2003	June and Virgil Waggoner Chair
2004	Hebb Award, International Neural Network Society
2006	University of Texas-Houston Health Science Center President's Award for Mentoring Women
2007	Neuroscience Education Award, Association for Neuroscience Departments and Programs

EDITORIAL POSITIONS:

Editorial Board:	<i>Journal of Neurobiology</i> , 1985-1986
Editorial Board:	<i>Journal of Neurophysiology</i> , 1986-1992
Editorial Board:	<i>Journal of Neuroscience</i> , 1989-1994
Editorial Board:	<i>The Encyclopedia of Learning and Memory</i> , 1992
Editorial Board:	<i>Learning and Memory</i> , 1993-present
Assistant Editor:	<i>News in Physiological Sciences</i> , 1994-2003
Editorial Board:	<i>Behavioral Neuroscience</i> , 1994-2001
Editor-In-Chief:	<i>Learning and Memory</i> , 1996-present
Editorial Board:	University of Texas-Houston Electronic Press, 1998-present
Editorial Board:	<i>Journal of Neural Engineering</i> , 2003-2006
Editorial Board:	<i>Physiological Reviews</i> , 2004-2010
Guest Editor:	<i>Current Opinion in Neurobiology</i> , 2006
Editor-In-Chief:	<i>Comprehensive Learning and Memory</i> , 2006
Editorial Board:	<i>Brain Navigator</i> , 2008-present
Scientific Advisor:	Dana Foundation's BrainWeb, 2010-present

SERVICE ON NATIONAL AND INTERNATIONAL GRANT REVIEW PANELS, STUDY SECTIONS, COMMITTEES:

- Ad hoc member Neurology B Study Section, 1983, 1992.
- Member, National Science Foundation Advisory Panel for Integrative Neural Systems, 1983-1986.
- Member, Presidential Nominating Committee of the Society for Neuroscience, 1989.
- Member, Public Information Committee of the Society for Neuroscience, 1990-1993.
- Member, Board of Visitors for Review of Division of Cognitive and Neural Sciences, Office of Naval Research, 1991.
- Member, Evaluation Panel in Biomedical Sciences for the National Science Foundation Minority Graduate Fellowship Program, 1991-1993.
- Treasurer-Elect, Society for Neuroscience, 1991-1992.
- Treasurer, Society for Neuroscience, 1992-1993.
- Chairman, Finance Committee, Society for Neuroscience, 1992-1993.
- Member, Program Committee, 1993 World Congress on Neural Networks.
- Member, Special NIH Study Section on Neurobiology of Cognition and Behavior, 1993.
- Member, Biology II Panel for the International Science Foundation, 1993, 1994.
- Member, Selection Committee for the Society for Neuroscience Young Investigator Award, 1994-1997.
- Member, Advisory Committee, John Sealy Memorial Endowment Fund for Biomedical Research, 1994-1998.
- Member, Nominating Committee for officers for the AAAS Section of Neuroscience, 1995.
- Member of the Outside Review Committee, Columbia University NIMH Program Project, 1995.
- Member of the National Institute of Neurological Disorders and Stroke Special Review Committee on Conferences, 1995.
- Member, Neuroscience Advisory Committee for the Cold Spring Harbor Laboratory, 1995.
- Member-at-Large, Section Committee of the Section on Neuroscience, American Association for the Advancement of Science, 1996-2001.
- Member, Special NIH Study Section on Genetics, 1997.
- Member, Scientific and Academic Advisory Committee, Weizmann Institute of Science, 1997.
- Member, Site Visit Team, Laboratory of Developmental Neurobiology, National Institute of Child Health and Development, 1998.
- Member, Howard Hughes Predoctoral Fellowships in Biological Sciences Evaluation Panel, 1999, 2000.
- Member, Steering Committee, Houston Society for Engineering in Medicine and Biology, 1999-2004.
- Member, Committee of Visitors for the Neuroscience Cluster, National Science Foundation, 1999.
- Member, Special Emphasis Review Panel for Training Grants, National Institute of Mental Health, 1999.
- Member, Special Emphasis Review Panel, Neuroinformatics Initiative, National Institute of Mental Health, 2000.
- Member, Molecular, Developmental and Cellular Neuroscience-7 Review Panel, National Institutes of Health, 2001.

Chairman, External Review Committee for the Neuronal Circuit Mechanisms Research Group, RIKEN Brain Research Institute, 2002.

Member, Site Visit Team, Laboratory of Cellular and Synaptic Neurophysiology, National Institute of Child Health and Human Development, 2002.

Member, Molecular, Developmental and Cellular Neuroscience-5 Review Panel, National Institutes of Health, 2003.

Member, Finance Committee, Society for Neuroscience, 2003-2008.

Member, Review Committee, Dart Scholars Program in Learning and Memory at Marine Biological Laboratory, 2004-2006.

Councilor, Association of Anatomy, Cell Biology, and Neurobiology Chairpersons, 2006-2008.

Member, Committee on Committees, Society for Neuroscience, 2006-2010.

Member, Scientific and Academic Advisory Committee, Weizmann Institute of Science, 2006.

Member, Special Emphasis NIH Review Panel, IFCN, 2007.

Chair-Elect, Section on Neuroscience, American Association for the Advancement of Science, 2007.

Chair, Section on Neuroscience, American Association for the Advancement of Science, 2008-2009.

Outside Reviewer, Seymour Fisher Academic Excellence Award in Neuroscience at the University of Texas Medical Branch at Galveston, 2007-2011.

Chairman, External Review Committee for the Neuronal Circuit Mechanisms Research Group, RIKEN Brain Research Institute, 2007.

Chairman, Ralph W. Gerard Prize Selection Committee, Society for Neuroscience, 2007, 2008, 2009.

Member, Special Emphasis NIH Review Panel, ZNS1 SRB-M for K99 Awards, 2007.

President, Association of Medical School Neuroscience Department Chairs, 2008, 2009.

Member, External Review Panel, Okinawa Institute of Science and Technology, 2008.

Member, Special Emphasis NIH Review Panel, ZRG1 IFCN, 2008.

Chairman, Swartz Prize Selection Committee, Society for Neuroscience, 2009 - present.

Member, Special Emphasis NIH Review Panel, ZRG1 IFCN-H, 2009.

Member, External Review Panel, University of Massachusetts Medical School, Department of Neurobiology, 2009.

Member, AAMC MR5 Behavioral and Social Sciences Working Group, 2010-2011.

Member, AAMC Leadership Forum on Medical Education, 2010.

Member, Molecular Neurogenetics Study Section, MNG, 2011.

OTHER NATIONAL AND INTERNATIONAL ACTIVITIES (Since 1983):

Invited speaker at the Woods Hole Symposium on the Neural Mechanisms of Conditioning, 1983.

Faculty member, Neural Systems and Behavior Course, Marine Biological Laboratory, Woods Hole, 1984-1990.

Course Co-Director, Cellular and Molecular Biology of Learning and Memory, Cold Spring Harbor Laboratory, 1985, 1987, 1989, 1991, 1993, 1995, 1997, 1999, 2001.

Invited speaker at the Winter Conference on Brain Research, 1984, 1985, 1986.

Invited speaker at the Winter Conference on the Neurobiology of Learning and Memory, 1985, 1987.

- Invited speaker and discussant at the Dahlem Conference on the Neural and Molecular Bases of Learning, Berlin, 1985.
- Invited speaker at the Society for Neuroscience Symposium on Cellular Substrates of Learning: Vertebrate and Invertebrate Mechanisms, 1986.
- Speaker and conference co-organizer, Neural Models of Plasticity: Theoretical and Empirical Approaches, Marine Biological Laboratory, Woods Hole, 1987.
- Invited speaker at the NATO Advanced Research Workshop on Modulation of Synaptic Transmission and Plasticity in Nervous Systems, Il Ciocco, Italy, 1987.
- Invited speaker at the Twelfth "Gif Lectures in Neurobiology" on the Neuronal Mechanisms of Long-Lasting Changes in the Nervous System: Facts and Perspectives. Gif-sur-Yvette, France, 1987.
- Invited speaker at the American Association for Artificial Intelligence Symposium on Parallel Models of Intelligence: How Can Slow Components Think so Fast? Stanford, CA, 1988.
- Speaker and conference co-organizer, Biotechnology of the Brain: Fundamental Discoveries and Clinical Applications. Houston, TX, 1988.
- Invited speaker at the Bat-Sheva De Rothschild Foundation Seminar on Neural Network Models and Their Relevance to Biology, Jerusalem, Israel, 1988.
- Invited speaker at the First International Meeting on The Cell and Molecular Neurobiology of *Aplysia*, Cold Spring Harbor, 1988.
- Invited speaker at the Twelfth Symposium on Models of Behavior on Neural Network Models of Conditioning and Action, Harvard University, 1989.
- Invited speaker at the Gordon Conference on Neuronal Plasticity, Wolfboro, N.H., 1989.
- Invited speaker for the Symposium on Learning and Memory at the Second International Congress of Neuroethology, Berlin, 1989.
- Invited speaker at the 23rd Symposium Medicum Hoechst on the Biology of Memory, Munich, 1989.
- Invited speaker at the Fifth Annual Spring Neuroscience Symposium on Mechanisms of Learning and Memory, Emory University, 1990.
- Keynote speaker at the Conference on Activity-Driven CNS Changes in Learning and Development, State University of New York at Albany, 1990.
- Invited speaker at the 55th Symposium on Quantitative Biology: The Brain, Cold Spring Harbor Laboratory, 1990.
- Faculty member, Computational Neuroscience: Learning and Memory, Cold Spring Harbor Laboratory, 1990.
- Invited speaker at the Second International Meeting on The Cell and Molecular Neurobiology of *Aplysia*, Cold Spring Harbor, 1990.
- Invited speaker at the Third Symposium on Molluscan Neurobiology, Amsterdam, 1990.
- Invited speaker at the Society for Neuroscience and FIDIA Research Foundation Short Course on Neural Computation, Mexico City, 1991.
- Invited speaker for the Symposium on Recent Advances in the Analysis of Learning at the Annual Meeting of the American Association of Anatomists, Chicago, 1991.
- Invited speaker at the Gordon Conference on Molecular Pharmacology, Tilton, N.H., 1991.
- Invited discussant and moderator at the Dahlem Conference on Exploring Brain Functions: Models in Neuroscience, Berlin, 1991.
- Invited speaker at the Bat-Sheva De Rothschild Foundation Seminar on From Neurons to Network, Jerusalem, Israel, 1991.

Faculty member, Molecular Neurobiology: Brain Development and Function, Cold Spring Harbor Laboratory, 1992.

Invited speaker for the Symposium on In Vitro Models of Plasticity at the Third International Congress of Neuroethology, Montreal, 1992.

Visiting Professor of Computational Neuroscience, Freie University of Berlin, 1992.

Invited speaker at the Conference on Learning and Memory, Cold Spring Harbor Laboratory, 1992.

Invited speaker at the 22nd Annual Meeting of the Society for Neuroscience Symposium on Protein Phosphatases and the Regulation of Neural Excitability, 1992.

Invited speaker at the Office of Naval Research Symposium on Single Neuron Computation, Elkridge, MD, 1993.

Invited speaker at the Third International Meeting on the Cell and Molecular Biology and Behavior of *Aplysia*, Cold Spring Harbor Laboratory, 1993.

Invited speaker at the International Federation of Automatic Control Symposium on Modeling and Control of Biomedical Systems, Galveston, 1994.

Invited speaker at the First World Congress on Computational Medicine, Public Health and Biotechnology, University of Texas at Austin, 1994.

Invited speaker at the Fourth Meeting of the Society for Research on Biological Rhythms, Jacksonville, Florida, 1994.

Invited speaker at the Office of Naval Research Accelerated Research Initiative in Dynamical Neural Systems Conference, Delray Beach, Florida, 1994.

Invited speaker at the Fourth Conference on Simpler Nervous Systems, Moscow, Russia, 1994.

Invited speaker at the Fourth International Symposium on Molluscan Neurobiology, Amsterdam, The Netherlands, 1994.

Invited speaker at the Tenth International Symposium of the Tokyo Metropolitan Institute for Neuroscience, Tokyo, Japan, 1994.

Conference Co-Organizer, Learning and Memory, Cold Spring Harbor Laboratory, 1994.

Invited speaker at the 23rd Göttingen Neurobiology Conference, 1995.

Invited speaker at the New York University Symposium on Memory and Brain, New York, New York, 1995.

Invited speaker at the Western Washington University Learning Symposium on Cognitive Neuroscience: Its Promise, Its Future, 1995.

Workshop speaker at the University of California at San Diego symposium on Nonlinear Dynamics of Small Networks of Neurons, 1995.

Invited speaker at the Winter Conference on Neural Plasticity in St. Lucia British West Indies, 1996.

Invited speaker at the Meeting of the Office of Naval Research Nonlinear Dynamics Program, Gainesville, Florida, 1996.

Invited speaker at the Office of Naval Research workshop on Gene Networks and Cellular Controls, Wilmington, Delaware, 1996.

Invited speaker at the Conference on Learning and Memory, Cold Spring Harbor Laboratory, 1996.

Invited discussant at the 80th Dahlem Conference on the Mechanistic Relationship between Development and Learning: Beyond Metaphor, Berlin, 1997.

Invited speaker at the Eighth Annual Spring Brain Conference, Sedona, Arizona, 1997.

Conference Co-Organizer, Fifth International Meeting on the Cell and Molecular Biology of *Aplysia* and Related Invertebrates, Cold Spring Harbor Laboratory, 1997.

- Invited speaker at the NIH Conference on Control of Genes, Development and Plasticity by Neural Impulses, Bethesda, Maryland, 1997.
- Invited speaker at the Air Force Office of Scientific Research Chronobiology & Neural Adaptation Program Review in Colorado Springs, Colorado, 1997.
- Invited participant in the workshop on Human Cognition and How It Fails, Cold Spring Harbor Laboratory, 1997.
- Invited speaker at the symposium on Neurotrophic Factors and Synaptic Plasticity at Freie University in Berlin, Germany, 1998.
- Invited speaker at the Fifth International Congress of Neuroethology, San Diego, California, 1998.
- Invited participant in the NIH Workshop on Non-mammalian Model Organisms, Bethesda, Maryland, 1999.
- Visiting Professor, Department of Physiology and Biochemistry, University of Pisa, Italy, 2000, 2001, 2002, 2004.
- Conference Co-Organizer, Learning and Memory, Cold Spring Harbor Laboratory, 2001.
- Invited speaker at the Sixth Society for Industrial and Applied Mathematics Conference on Applications of Dynamical Systems, Snowbird, Utah, 2001.
- Invited speaker at the 1st European Conference of Neurobiology, Krakow, Poland, 2001.
- Co-Organizer for sessions on Neural Engineering, Second Joint Meeting of the Engineering in Medicine and Biology Society (EMBS) and the Biomedical Engineering Society (BMES), 2002.
- Conference Co-Organizer, Learning and Memory, Cold Spring Harbor Laboratory, 2003.
- Invited speaker, Symposium on Learning and Memory, Campus Vienna Biocenter, Vienna, Austria, 2003.
- Invited speaker, RIKEN Brain Research Institute, 2003 Summer Course, Tokyo, Japan, 2003.
- Invited speaker, Foundation des Treilles conference “Learning and memory, from molecules to mind”, Nice, France, 2003.
- Invited participant, The National Academies 1st Annual Keck *Futures Initiative* Conference, 2003.
- Invited speaker, Inaugural Conference “From Neuron to Mind”, The Leslie and Susan Gonda Multidisciplinary Brain Research Center, Bar-Ilan University, Israel, 2004.
- Conference Co-Organizer, Learning and Memory, Cold Spring Harbor Laboratory, 2005.
- Faculty member, Learning and Memory Course, Cold Spring Harbor Laboratory, 2005, 2007, 2009.
- Invited speaker, CBN Spring Symposium “Neural Mechanisms of Reward and Reinforcement”, Center for Behavioral Sciences, Emory University, Atlanta, Georgia, 2006.
- Invited speaker, Brain Science Day, Weizmann Institute of Science, Rehovot, Israel, 2006.
- Invited speaker, Friday Harbor Laboratories Centennial Symposium “Gastropod Neuroscience: Past Successes and Future Prospects”, Friday Harbor, Washington, 2007.
- Invited participant the NIH Neuroinformatics Terminology Workshop on Neurobehavior, New York, New York, 2008.
- Invited speaker, Federation of European Neuroscience Societies (FENS) Forum Symposium and Workshop, Geneva, Switzerland, 2008.
- Invited speaker, Molluscan Neuroscience Meeting, San Juan, Puerto Rico, 2009.
- Invited speaker, NSF Workshop on Shared Organizing Principles in the Computing and Biological Sciences, Arlington, Virginia, May 2010.

Invited speaker, CNS 2011 Workshop on Modeling Central Pattern Generators: Neuronal Network Design Principles and Problems, Stockholm, Sweden, 2011.

SERVICE ON UNIVERSITY OF TEXAS MEDICAL SCHOOL AT HOUSTON COMMITTEES:

Curriculum Committee, 1983-1986
Curriculum Committee, Chairman, 1985-1986
Interviewer for Admissions Committee, 1983-2003
Interviewer for MD/Ph.D. Program, 1984-present
Faculty Senate, 1985-1987
Search Committee for Chair, Department of Internal Medicine, 1988
Search Committee for Chair, Department of Psychiatry and Behavioral Science, 1988
Research Committee, 1987-present
Research Committee, Chairman, 1989-1993, 1996-present
LCME Self-Study Committee on Resources for the Education Programs, Chairman, 1989
Search Committee for Director, Division of Neurosurgery, 1989-1990
Search Committee for Chair, Department of Pharmacology, Chairman, 1990
M.D./Ph.D. Program Committee, 1990-1993; 2008-present
Total Quality Improvement/Research Steering Committee, 1992-1995
Member, Ad Hoc Committee for Faculty Incentive Plan, 1996
Dean's Strategic Advisory Group, 1997-1998
Graduate Student Education Committee, 1997-present
Dean's Budget and Compensation Committee, 1996-2003
Chair, Internal Consultant Committee for the Review of the Department of Neurology, 1998-1999
Indoor Air Quality Task Force, 1998-2002
Member, Cooper Lecture Committee, 1997-present
LCME Self-Study Committee on Institutional Setting, 2002-2004
Search Committee for Commencement Speaker, 2004-2006
Search Committee for Chair, Department of Pediatrics, 2005
Search Committee for Chair, Department of Integrative Biology and Pharmacology, Chairman, 2005-2007
Search Committee for Project Excellence for the New Research Replacement Facility, 2006-2008
Search Committee for Chair, Department of Psychiatry and Behavioral Sciences, 2007-2009
Member, Mischer Neuroscience Institute Research Committee, 2008-present
Member, Area Concentrations Advisory Committee, 2009-present
Member, LCME Self-Study Committee on Faculty, 2010-present
Member, LCME Self-Study Committee on Research Activity, 2011-present
Member, LCME Steering Committee, 2011-present
Search Committee for Director, The Brown Foundation Institute of Molecular Medicine, Co-Chair, 2011-present
Member, Scientific Review Board for the Bentsen Stroke Center, 2011-present

**SERVICE ON UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT HOUSTON
COMMITTEES:**

President's Committee for Neuroscience, 1984-1987
Scientific Council, 1988-1990
President's Neuroscience Planning Task Force, 1991
Health Science Center Task Force on Faculty Salary, 1991-1996
Planning Task Force for Consolidating Basic Sciences, 1993
Member, HSC Scientific Review Committee, 1994-1999
President's Task Force for the Graduate School of Biomedical Sciences, 1996-1997
Search Committee for Director, Institute of Molecular Medicine, 1998-1999
Member, Research Support Services Analysis Team, 1998-1999
Member, Committee for the Comprehensive Review of the Vice President, 1998-1999
Member, Committee for the Improvement of the Grant Pre-Award Process, 1998-1999
Project mentor, President's Academic Leadership Development Program, 1999-present
Member, Capital Campaign Planning Group, 2000-2002
Member, Executive Committee for the Center for Computational Biomedicine, 2001-2005
Member, Biotechnology Group for Strategic Planning Committee, 2002
Member, Research Group for Strategic Planning Committee, 2002
Search Committee for Executive Vice President for Research, 2002
Search Committee for Dean of the Dental Branch, 2002-2004
Member, Research Council, 2003-present
Member, HAM-TMC Library Advisory Group, 2004-2010
Member, Faculty Research Advisory Panel, 2004-2008
Member, IT Governance Council, 2004-2010
Search Committee for Director of the UT Center for Neurodegenerative Diseases,
2004-2005
Search Committee for Chair, Department of Biomedical Engineering, 2006-2007
Member, Selection Committee for Presidential Scholar Award, 2006-present
Member, Biomedical Engineering Curriculum Committee, 2006-2011
Member, UTHSC-H BME Space and Operation Committee, 2007-2010
Chair, Center for Clinical and Translational Services Neuroscience Focus Group,
2007- 2011
Member, 3T MRI Center Executive Committee, 2007-present
Member, UTHSC-H SACS Institutional Effective Committee, 2009-2010
Member, UTHSC-H Research Space Committee, 2009-present
Member, UT/Rice Shared Services Committee, 2010
Member, Search Committee for Dean of the Graduate School of Biomedical Sciences,
2010-present

**SERVICE ON UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT HOUSTON
GRADUATE SCHOOL COMMITTEES:**

Admissions Committee, 1984-1987
Member, Biomedical Engineering Graduate Studies Committee, University of Texas at
Austin, 2001-present

SPONSORSHIP OF CANDIDATES FOR POSTGRADUATE DEGREE:

Susan Tritt	1977-1982
John Walsh	1980-1985

Kenneth Scholz	1985-1988
Dean Buonomano	1987-1992
Jason Goldsmith	1988-1992
Yanli Xu	1990-1992
Jennifer Raymond	1988-1993
Fidelma Nazif	1988-1993
Shuzo Sugita	1990-1994
Jeffrey Sorenson	1992-1995
Susan Cushman	1992-1995
Fan Zhang	1992-1997
Hilde Lechner	1995-1999
Jeannie Chin	1996-2001
Bill Amini	2001-2004
Fred Lorenzetti	1998-2005
Fredy Reyes	2001-2006
Diasinou Fioravante	1999-2006
Evangelos Antzoulatos	2000-2006
Shreyansh Shah	2006-2009
Anne Netek	2005-2011
Curtis Neveu	2009-present
Brittany Coughlin	2010-present

SPONSORSHIP OF POSTDOCTORAL FELLOWS:

Edgar T. Walters, Ph.D.	1980-1982
Karen A. Ocorr, Ph.D.	1982-1985
Leonard Cleary, Ph.D.	1984-1987
Stuart Critz, Ph.D.	1988-1991
Shogo Endo, Ph.D.	1989-1991
Joseph Pieroni, Ph.D.	1988-1992
John White, Ph.D.	1990-1992
Florence Noel, Ph.D.	1988-1993
Israel Ziv, Ph.D.	1990-1993
Carmen Canavier, Ph.D.	1991-1993
Susanne Wittstock, Ph.D.	1992-1994
Keiko Nakanishi, M.D.	1993-1995
Carmen Canavier, Ph.D.	1994-1995
Romuald Nargeot, Ph.D.	1995-1998
Evgeni Kabotyanski, Ph.D.	1993-1999
Paul Smolen, Ph.D.	1996-1999
John Burdohan, Ph.D.	1996-1999
Annie Angers, Ph.D.	1998-2000
Suzanne Candy, Ph.D.	1999-2001
David Pettigrew, Ph.D.	2001-2003
Björn Brembs, Ph.D.	2000-2003
Randall Hayes, Ph.D.	2001-2004
Teruyuki Fukushima, Ph.D.	2001-2004
Clyde Steven Miller, Ph.D.	2002-2006
Hao Song, Ph.D.	2004-2006

Gregg Phares, Ph.D.	1997-2006
Riccardo Mozzachiodi, Ph.D.	1999-2007
Rong-Yu Liu, Ph.D.	2002-2008
Fred Lorenzetti, Ph.D.	2005-2010
Lian Zhou, Ph.D.	2008-present
Yili Zhang, Ph.D.	2008-present
Hsin-Mei Chen, Ph.D.	2008-present

SPONSORSHIP OF VISITING SCIENTISTS:

Abraham J. Susswein, Ph.D. (Bar Ilan University, Israel)	1985-1986, 1987 and 1989
Masashi Sawada, Ph.D. (Shimane Medical University, Japan)	1986-1987 and 1987-1988
Zhishen Zhang, M.D. (Capital Institute of Medicine, PR China)	1987-1988
Loon-tzian Lo, M.D. (Fujian Medical College, PR China)	1986-1989
Arnold Eskin, Ph.D. (University of Houston)	1988-1989
Mitsuyuki Ichinose, Ph.D. (Shimane Medical University, Japan)	1989-1990
Boyuan Fang, M.D. (Capital Institute of Medicine, PR China)	1990-1991
Han Zhang, M.D. (Yangzhou Medical College, PR China)	1992-1994

SPONSORSHIP OF VISITING STUDENTS:

Martin Hammer (Freie University of Berlin)	1987-1988
Hilde Lechner (Freie University of Berlin)	1993-1995

TEACHING RESPONSIBILITIES AND DEPARTMENTAL SERVICE AT THE UNIVERSITY OF TEXAS MEDICAL SCHOOL AT HOUSTON:

Lecturer and conference leader, Mammalian Physiology, 1982-1995
 Lecturer, graduate course in Mammalian Physiology, 1982-1987
 Course Director, Mammalian Physiology, 1984-1985 (voted best first-year course by medical students)
 Lecturer, basic science review course for Neurology residents, 1984, 1988, 1989, 1992, 1999
 Director, Department Seminar Program, 1983-1984
 Lecturer, Medical Neuroscience Course, 1988-present
 Lecturer, Advanced Neurobiology I, 1990-2003
 Lecturer, Advanced Neurobiology II, 1991-2009
 Lecturer and conference leader, Medical School Pre-Entry Program, 1991-present
 Facilitator, Problem Based Learning Sessions, Fundamentals of Clinical Medicine, 1996-2003
 Course Co-Director, Neurobiology of Disease, 1999-present
 Lecturer, Synaptic Basis of Learning and Memory, 2006, 2007
 Lecturer, Department of Neurology, Grand Rounds, 2007
 Lecturer, Cellular Neurophysiology, 2009-present
 Lecturer, Systems Neuroscience, 2010-present

TEACHING RESPONSIBILITIES AND DEPARTMENT SERVICE AT THE UNIVERSITY OF PITTSBURGH:

Lecturer and conference leader, Mammalian Physiology, 1976-1981
 Lecturer, undergraduate Course in Mammalian Physiology, 1978-1980
 Course Director, Medical Neuroscience, 1980-1982

Lecturer, basic science review course for Neurology residents, 1980-1982
Lecturer, graduate course in Cellular Neurobiology, 1981

PUBLICATIONS:

A. Refereed Original Articles in Journals:

1. Byrne, J.H., Castellucci, V. and Kandel, E.R. Receptive fields and response properties of mechanoreceptor neurons innervating the siphon and mantle shelf of *Aplysia*. *J. Neurophysiol.* 37:1041-1064, 1974.
2. Byrne, J.H. A feedback controlled stimulator that delivers controlled displacements or forces to cutaneous mechanoreceptors. *IEEE Trans. Bio-Med. Eng.* 22:66-69, 1975.
3. Byrne, J.H. Dynamic properties of mechanoreceptor neurons mediating the defensive gill-withdrawal in *Aplysia*. *Brain Research* 114:123-127, 1976.
4. Byrne, J.H. and Koester, J. Respiratory pumping: Neuronal control of a centrally commanded behavior in *Aplysia*. *Brain Research* 143:87-105, 1978.
5. Byrne, J.H., Castellucci, V.F., Carew, T.J. and Kandel, E.R. Stimulus-response relations and stability of mechanoreceptor and motor neurons mediating defensive gill-withdrawal reflex in *Aplysia*. *J. Neurophysiol.* 41:402-417, 1978.
6. Byrne, J.H., Castellucci, V. and Kandel, E.R. Contribution of individual mechanoreceptor sensory neurons to defensive gill-withdrawal reflex in *Aplysia*. *J. Neurophysiol.* 41:418-431, 1978.
7. Carew, T.J., Castellucci, V.F., Byrne, J.H. and Kandel, E.R. Quantitative analysis of relative contribution of central and peripheral neurons to gill-withdrawal reflex in *Aplysia californica*. *J. Neurophysiol.* 42:497-509, 1979.
8. Shapiro, E., Koester, J. and Byrne, J.H. *Aplysia* ink release: Central locus for selective sensitivity to long duration stimuli. *J. Neurophysiol.* 42:1223-1232, 1979.
9. Byrne, J.H., Shapiro, E., Dieringer, N. and Koester, J. Biophysical mechanisms contributing to inking behavior in *Aplysia*. *J. Neurophysiol.* 42:1233-1250, 1979.
10. Byrne, J.H. Analysis of ionic conductance mechanisms in motor cells mediating inking behavior in *Aplysia*. *J. Neurophysiol.* 43:630-650, 1980.
11. Byrne, J.H. Quantitative aspects of ionic conductance mechanisms contributing to firing pattern of motor cells mediating inking behavior in *Aplysia californica*. *J. Neurophysiol.* 43:651-668, 1980.
12. Tritt, S.H. and Byrne, J.H. Motor controls of opaline secretion in *Aplysia californica*. *J. Neurophysiol.* 43:581-594, 1980.
13. Byrne, J.H. Neural circuit for inking behavior in *Aplysia californica*. *J. Neurophysiol.* 43:896-911, 1980.

14. Byrne, J.H. Identification of neurons contributing to presynaptic inhibition in *Aplysia californica*. *Brain Research* 199:235-239, 1980.
15. Byrne, J.H. Comparative aspects of neural circuits for inking behavior and gill-withdrawal in *Aplysia californica*. *J. Neurophysiol.* 45:98-106, 1981.
16. Byrne, J.H. Simulation of the neural activity underlying a short-term modification of inking behavior in *Aplysia*. *Brain Research* 204:200-203, 1981.
17. Milne, R.J. and Byrne, J.H. Effects of hexamethonium and decamethonium on end-plate current parameters. *Molecular Pharmacology* 19:276-281, 1981.
18. Byrne, J.H. Analysis of synaptic depression contributing to habituation of gill-withdrawal reflex in *Aplysia californica*. *J. Neurophysiol.* 48:431-438, 1982.
19. Tritt, S.H. and Byrne, J.H. Neurotransmitters producing and modulating opaline gland contraction in *Aplysia californica*. *J. Neurophysiol.* 48:1347-1361, 1982.
20. Byrne, J.H. Identification and initial characterization of a cluster of command and pattern-generating neurons underlying respiratory pumping in *Aplysia californica*. *J. Neurophysiol.* 49:491-508, 1983.
21. Tritt, S.H., Lowe, I.P. and Byrne, J.H. A modification of the glyoxylic acid induced histofluorescence technique for demonstration of catecholamines and serotonin in tissues of *Aplysia californica*. *Brain Research* 259:159-162, 1983.
22. Walters, E.T. and Byrne, J.H. Associative conditioning of single sensory neurons suggests a cellular mechanism for learning. *Science* 219:405-408, 1983.
23. Walters, E.T., Byrne, J.H., Carew, T.J. and Kandel, E.R. Mechanoafferent neurons innervating the tail of *Aplysia*. I. Response properties and synaptic connections. *J. Neurophysiol.* 50:1522-1542, 1983.
24. Walters, E.T., Byrne, J.H., Carew, T.J. and Kandel, E.R. Mechanoafferent neurons innervating the tail of *Aplysia*. II. Modulation by sensitizing stimulation. *J. Neurophysiol.* 50:1543-1559, 1983.
25. Walters, E.T. and Byrne, J.H. Slow depolarization produced by associative conditioning of *Aplysia* sensory neurons may enhance Ca^{++} entry. *Brain Research* 280:165-168, 1983.
26. Walters, E.T. and Byrne, J.H. Post-tetanic potentiation in *Aplysia* sensory neurons. *Brain Research* 293:377-380, 1984.
27. Walsh, J.P. and Byrne, J.H. Forskolin mimics and blocks a serotonin-sensitive decreased K^+ conductance in tail sensory neurons of *Aplysia*. *Neuroscience Letters* 52:7-11, 1984.
28. Walsh, J.P. and Byrne, J.H. Analysis of decreased conductance serotonergic response in *Aplysia* ink motor neurons. *J. Neurophysiol.* 53:590-602, 1985.

29. Gingrich, K.J. and Byrne, J.H. Simulation of synaptic depression, post-tetanic potentiation, and presynaptic facilitation of synaptic potentials from sensory neurons mediating gill-withdrawal reflex in *Aplysia*. *J. Neurophysiol.* 53:652-669, 1985.
30. Walters, E.T. and Byrne, J.H. Long-term enhancement produced by activity-dependent modulation of *Aplysia* sensory neurons. *J. Neuroscience* 5:662-672, 1985.
31. Ocorr, K.A., Walters, E.T. and Byrne, J.H. Associative conditioning analog selectively increases cAMP levels of tail sensory neurons in *Aplysia*. *Proc. Natl. Acad. Sci.* 82:2548-2552, 1985.
32. Ocorr, K.A. and Byrne, J.H. Membrane responses and changes in cAMP levels in *Aplysia* sensory neurons produced by 5-HT, tryptamine, FMRFamide and SCP_B. *Neuroscience Letters* 55:113-118, 1985.
33. Critz, S.D., Harper, J.F. and Byrne, J.H. Evidence for the inhibitory subunit of adenylate cyclase (N_i) in nervous and heart tissue of *Aplysia*. *Neuroscience Letters* 64:145-150, 1986.
34. Ocorr, K.A., Tabata, M. and Byrne, J.H. Stimuli that produce sensitization lead to elevation of cyclic AMP levels in tail sensory neurons of *Aplysia*. *Brain Research* 371:190-192, 1986.
35. Ocorr, K.A. and Byrne, J.H. Evidence for separate receptors that mediate parallel effects of serotonin and small cardioactive peptide_B (SCP_B) on adenylate cyclase in *Aplysia californica*. *Neuroscience Letters* 70:283-288, 1986.
36. Scholz, K.P. and Byrne, J.H. Long-term sensitization in *Aplysia*: Biophysical correlates in tail sensory neurons. *Science* 235:685-687, 1987.
37. Gingrich, K.J. and Byrne, J.H. Single-cell neuronal model for associative learning. *J. Neurophysiol.* 57:1705-1715, 1987.
38. Susswein, A.J. and Byrne, J.H. Identification and characterization of neurons initiating patterned neural activity in the buccal ganglia of *Aplysia*. *J. Neuroscience* 8:2049-2061, 1988.
39. Scholz, K.P., Cleary, L.J., Byrne, J.H. Inositol 1,4,5-trisphosphate alters bursting pacemaker activity in *Aplysia* neurons: Voltage clamp analysis of effects on calcium currents. *J. Neurophysiol.* 60:86-104, 1988.
40. Scholz, K.P. and Byrne, J.H. Intracellular injection of cAMP induces a long-term reduction of neuronal K⁺ currents. *Science* 240:1664-1666, 1988.
41. Walsh, J.P. and Byrne, J.H. Modulation of a steady-state Ca²⁺ activated, K⁺ current in tail sensory neurons of *Aplysia*: Role of serotonin and cAMP. *J. Neurophysiol.* 61:32-44, 1989.
42. Sawada, M., Cleary, L.J. and Byrne, J.H. Inositol trisphosphate (IP₃) and activators of protein kinase C (PKC) modulate membrane currents in tail motor neurons of *Aplysia*. *J. Neurophysiol.* 61:302-310, 1989.

43. Eskin, A., Garcia, K.S. and Byrne, J.H. Information storage in the nervous system of *Aplysia*: Specific proteins affected by serotonin and cAMP. *Proc. Natl. Acad. Sci. (USA)* 86:2458-2462, 1989.
44. Hammer, M., Cleary, L.J. and Byrne, J.H. Serotonin acts in the synaptic region of pleural sensory neurons of *Aplysia* to enhance transmitter release. *Neuroscience Letters* 104:235-240, 1989.
45. Baxter, D.A. and Byrne, J.H. Serotonergic modulation of two potassium currents in the pleural sensory neurons of *Aplysia*. *J. Neurophysiol.* 62:665-679, 1989.
46. Canavier, C.G., Clark, J.W. and Byrne, J.H. Routes to chaos in a model of a bursting neuron. *Biophysical J.* 57:1245-1252, 1990.
47. Buonomano, D.V. and Byrne, J.H. Long-term synaptic changes produced by a cellular analogue of classical conditioning in *Aplysia*. *Science* 249:420-423, 1990.
48. Buonomano, D.V., Baxter, D.A. and Byrne, J.H. Small networks of empirically derived adaptive elements simulate some higher-order features of classical conditioning. *Neural Networks* 3:507-523, 1990.
49. Baxter, D.A. and Byrne, J.H. Differential effects of cAMP and serotonin on membrane current, action potential duration, and excitability in somata of pleural sensory neurons of *Aplysia*. *J. Neurophysiol.* 64:978-990, 1990.
50. Baxter, D.A. and Byrne J.H. Reduction of voltage-activated K⁺ currents by forskolin is not mediated via cAMP in pleural sensory neurons of *Aplysia*. *J. Neurophysiol.* 64:1474-1483, 1990.
51. Ichinose, M., Endo, S., Critz, S.D., Shenolikar, S. and Byrne, J.H. Microcystin-LR, a potent protein phosphatase inhibitor, prolongs the serotonin - and cAMP - induced currents in sensory neurons of *Aplysia californica*. *Brain Research* 533:137-140, 1990.
52. Nazif, F.A., Byrne, J.H. and Cleary, L.J. cAMP induces long-term morphological changes in sensory neurons of *Aplysia*. *Brain Research* 539:324-327, 1991.
53. Ichinose, M. and Byrne, J.H. Role of protein phosphatases in the modulation of neuronal membrane currents. *Brain Research*, 549:146-150, 1991.
54. Zhang, Z., Fang, B., Marshak, D.W., Byrne, J.H. and Cleary, L.J. Serotonergic varicosities make synaptic contacts with pleural sensory neurons of *Aplysia*. *J. Comp. Neurol.* 311:259-270, 1991.
55. Critz, S.D., Baxter, D.A. and Byrne, J.H. Modulatory effects of serotonin, FMRFamide, and myomodulin on the duration of action potentials, excitability, and membrane currents in tail sensory neurons of *Aplysia*. *J. Neurophysiol.* 66:1912-1926. 1991.

56. Canavier, C.C., Clark, J.W. and Byrne, J.H. Simulation of the bursting activity of neuron R15 in *Aplysia*: Role of ionic currents, calcium balance, and modulatory transmitters. *J. Neurophysiol.* 66:2107-2124, 1991.
57. Noel, F., Scholz, K.P., Eskin, A. and Byrne, J.H. Common set of proteins in *Aplysia* sensory neurons affected by an *in vitro* analogue of long-term sensitization training, 5-HT and cAMP. *Brain Research* 568:67-75, 1991.
58. Endo, S., Shenolikar, S., Eskin, A., Zwartjes, R. and Byrne, J.H. Characterization of neuronal protein phosphatases in *Aplysia californica*. *J. Neurochem.* 58:975-982, 1992.
59. Buonomano, D.V., Cleary, L.J. and Byrne, J.H. Inhibitory neuron produces heterosynaptic inhibition of the sensory-to-motor neuron synapse in *Aplysia*. *Brain Research* 577:147-150, 1992.
60. Pieroni, J.P. and Byrne, J.H. Differential effects of serotonin, FMRFamide and small cardioactive peptide on multiple, distributed processes modulating sensorimotor synaptic transmission in *Aplysia*. *J. Neuroscience* 12:2633-2647, 1992.
61. Sugita, S., Goldsmith, J.R., Baxter, D.A. and Byrne, J.H. Involvement of protein kinase C in serotonin-induced spike broadening and synaptic facilitation in sensorimotor connections of *Aplysia*. *J. Neurophysiol.* 68:643-651, 1992.
62. Raymond, J.R., Baxter, D.A., Buonomano, D.V. and Byrne, J.H. A learning rule based on empirically-derived activity-dependent neuromodulation supports operant conditioning in a small network. *Neural Networks* 5:789-803, 1992.
63. Critz, S.D. and Byrne, J.H. Modulation of $I_{K,Ca}$ by phorbol ester mediated activation of PKC in pleural sensory neurons of *Aplysia*. *J. Neurophysiol.* 68:1079-1086, 1992.
64. Goldsmith, J.R. and Byrne, J.H. Bag cell extract inhibits tail-siphon withdrawal reflex, suppresses long-term but not short-term sensitization and attenuates sensory-to-motor neuron synapses in *Aplysia*. *J. Neuroscience* 13:1688-1700, 1993.
65. Noel, F., Nuñez-Regueiro, M., Cook, R., Byrne, J.H. and Eskin, A. Long-term changes in synthesis of intermediate filament protein, actin and other proteins in pleural sensory neuron of *Aplysia* produced by an *in vitro* analogue of sensitization training. *Molecular Brain Research* 19:203-210, 1993.
66. Canavier, C.C., Baxter, D.A., Clark, J.W. and Byrne, J.H. Nonlinear dynamics in a model neuron provide a novel mechanism for transient synaptic inputs to produce long-term alterations of postsynaptic activity. *J. Neurophysiol.* 69:2252-2257, 1993.
67. Cleary, L.J. and Byrne, J.H. Identification and characterization of a multifunction neuron contributing to defensive arousal in *Aplysia*. *J. Neurophysiol.* 70:1767-1776, 1993.
68. White, J.A., Ziv, I., Baxter, D.A., Cleary, L.J. and Byrne, J.H. The role of interneurons in controlling the tail-withdrawal reflex in *Aplysia*: A network model. *J. Neurophysiol.* 70:1777-1786, 1993.

69. Ziv, I., Baxter, D.A. and Byrne, J.H. Simulator for neural networks and action potentials: Description and application. *J. Neurophysiol.* 71:294-308, 1994.
70. White, J.A., Baxter, D.A. and Byrne, J.H. Analysis of the modulation by serotonin of a voltage-dependent potassium current in sensory neurons of *Aplysia*. *Biophysical J.* 66:710-718, 1994.
71. Raymond, J.L. and Byrne, J.H. Distributed input to the tail-siphon withdrawal circuit in *Aplysia* from neurons in the J cluster of the cerebral ganglion. *J. Neuroscience* 14:2444-2454, 1994.
72. Xu, Y., Cleary, L.J. and Byrne, J.H. Identification and characterization of pleural neurons that inhibit tail sensory neurons and motor neurons in *Aplysia*: Correlation with FMRFamide immunoreactivity. *J. Neuroscience* 14:3565-3577, 1994.
73. Noel, F., Koumenis, C., Nuñez-Regueiro, M., Raju, U., Byrne, J.H. and Eskin, A. Novel effects on protein synthesis produced by pairing depolarization with serotonin, an analogue of associative learning in *Aplysia*. *Proc. Natl. Acad. Sci. U.S.A.* 91:4150-4154, 1994.
74. Zhang, F., Goldsmith, J.R. and Byrne, J.H. Neural analogue of long-term sensitization training produces long-term (24 and 48 h) facilitation of the sensory-to-motor neuron connection in *Aplysia*. *J. Neurophysiol.* 72:778-784, 1994.
75. Canavier, C.C., Baxter, D.A., Clark, J.W. and Byrne, J.H. Multiple modes of activity in a model neuron suggest a novel mechanism for the effects of neuromodulators. *J. Neurophysiol.* 72:872-882, 1994.
76. Sugita, S., Baxter, D.A. and Byrne, J.H. Activators of protein kinase C mimic serotonin-induced modulation of a voltage-dependent potassium current in pleural sensory neurons of *Aplysia*. *J. Neurophysiol.* 72:1240-1249, 1994.
77. Sugita, S., Baxter, D.A. and Byrne, J.H. cAMP-independent effects of 8-(4-parachlorophenylthio)-cyclic AMP on spike duration and membrane currents in pleural sensory neurons of *Aplysia*. *J. Neurophysiol.* 72:1250-1259, 1994.
78. Homayouni, R., Byrne, J.H. and Eskin, A. Dynamics of protein phosphorylation in sensory neurons of *Aplysia*. *J. Neuroscience* 15:429-438, 1995
79. Endo, S., Critz, S.D., Byrne, J.H. and Shenolikar, S. Protein phosphatase-1 regulates outward K⁺ currents in sensory neurons of *Aplysia californica*. *J. Neurochem.* 64:1833-1840, 1995.
80. Xu, Y., Pieroni, J., Cleary, L.J. and Byrne, J.H. Modulation of an inhibitory interneuron in the neural circuitry for the tail-withdrawal reflex of *Aplysia*. *J. Neurophysiol.* 73:1313-1318, 1995.
81. O'Leary, F.A., Byrne, J.H. and Cleary, L.J. Long-term structural remodeling in *Aplysia* sensory neurons requires *de novo* protein synthesis during a critical time period. *J. Neuroscience* 15:3519-3525, 1995.

82. Butera, R.J., Clark, J.W., Canavier, C.C., Baxter, D.A. and Byrne, J.H. Analysis of the effects of modulatory agents on a modeled bursting neuron: Dynamic interactions between voltage and calcium dependent systems. *J. Computational Neuroscience* 2:19-44, 1995.
83. Lechner, H.A., Baxter, D.A., Clark, J.W. and Byrne, J.H. Bistability and its regulation by serotonin in the endogenously bursting neuron R15 in *Aplysia*. *J. Neurophysiol.* 75:957-962, 1996.
84. Butera, R.J., Clark, J.W., Byrne, J.H. Dissection and reduction of a modeled bursting neuron. *J. Computational Neuroscience* 3:199-223, 1996.
85. Liu, Q-R., Hattar, S., Endo, S., MacPhee, K., Zhang, H., Cleary, L.J., Byrne, J.H., Eskin, A. A developmental gene (*Tolloid* /BMP-1) is regulated in *Aplysia* neurons by treatments that induce long-term sensitization. *J. Neuroscience* 17:755-764, 1997.
86. Demir, S.S., Butera, R.J., DeFranceschi, A.A., Clark, J.W., Byrne, J.H. Phase sensitivity and entrainment in a modeled bursting neuron. *Biophysical J.* 72: 579-594, 1997.
87. Sugita, S., Baxter, D.A., Byrne, J.H. Differential effects of 4-aminopyridine, serotonin, and phorbol esters on facilitation of sensorimotor connections in *Aplysia*. *J. Neurophysiol.* 77:177-185, 1997.
88. Zhang, F., Endo, S., Cleary, L.J., Eskin, A., Byrne, J.H. Role of transforming growth factor- β in long-term synaptic facilitation in *Aplysia*. *Science* 275:1318-1320, 1997.
89. Homayouni, R., Nunez-Regueiro, M., Cook, R., Byrne, J.H., Eskin, A. Identification of two phosphoproteins affected by serotonin in *Aplysia* sensory neurons. *Brain Research* 750:87-94, 1997.
90. Nakanishi, K., Zhang, F., Baxter, D.A., Eskin, A., Byrne, J.H. Role of calcium-calmodulin-dependent protein kinase II in modulation of sensorimotor synapses in *Aplysia*. *J. Neurophysiol.* 78:409-416, 1997.
91. Sugita, S., Baxter D.A., Byrne, J.H. Modulation of a cAMP/PKA cascade by PKC in sensory neurons of *Aplysia*. *J. Neuroscience* 17:7237-7244, 1997.
92. Nargeot, R., Baxter, D.A., Byrne, J.H. Contingent-dependent enhancement of rhythmic motor patterns: An *in vitro* analog of operant conditioning. *J. Neuroscience* 17:8093-8105, 1997.
93. Canavier, C.C., Butera, R.J., Dror, R.O., Baxter, D.A., Clark, J.W., Byrne, J.H. Phase response characteristics of model neurons determine which patterns are expressed in a ring circuit model of gait generation. *Biol. Cybern.* 77:367-380, 1997.
94. Butera, R.J., Clark, J.W., Byrne, J.H. Transient responses of a modeled bursting neuron: analysis with equilibrium and averaged nullclines. *Biol. Cybern.* 77:307-322, 1997.

95. Kabotyanski, E.A., Baxter, D.A., Byrne, J.H. Identification and characterization of catecholaminergic neuron B65 that initiates and modifies patterned activity in the buccal ganglia of *Aplysia*. *J. Neurophysiol.* 79:605-621, 1998.
96. Smolen, P. Baxter, D.A., Byrne, J.H. Frequency selectivity, multistability, and oscillations emerge from models of genetic regulatory systems. *Am. J. Physiol.* 274:C531-C542, 1998.
97. Zwartjes, R.E., West, H., Hattar, S., Ren, X., Noel, F., Nunez-Regueiro, M., MacPhee, K., Homayouni, R., Crow, M.T., Byrne, J.H. and Eskin, A. Identification of specific mRNAs affected by treatments producing long-term facilitation in *Aplysia*. *Learning & Memory* 4:478-495, 1998.
98. Cleary, L.J., Lee, W.L. and Byrne, J.H. Cellular correlates of long-term sensitization in *Aplysia*. *J. Neuroscience* 18:5988-5998, 1998.
99. Dror, R.O., Canavier, C.C., Butera, R.J., Clark, J.W. and Byrne, J.H. A mathematical criterion based on phase response curves for stability in a ring of coupled oscillators. *Biol. Cybernet.* 80:11-23, 1999.
100. Canavier, C.C., Baxter, D.A., Clark, J.W. and Byrne, J.H. Control of multistability in ring circuits of oscillators. *Biol. Cybernet.* 80:87-102, 1999.
101. Nargeot, R., Baxter, D.A., and Byrne, J.H. *In vitro* analogue of operant conditioning in *Aplysia*. I. Contingent reinforcement modifies the functional dynamics of an identified neuron. *J. Neuroscience* 19:2247-2260, 1999.
102. Nargeot, R., Baxter, D.A., and Byrne, J.H. *In vitro* analogue of operant conditioning in *Aplysia*. II. Modifications of the functional dynamics of an identified neuron contribute to motor pattern selection. *J. Neuroscience* 19:2261-2272, 1999.
103. Nargeot, R., Baxter, D.A., Patterson, G.W. and Byrne, J.H. Dopaminergic synapses mediate neuronal changes in an analogue of operant conditioning. *J. Neurophysiol.* 81:1983-1987, 1999.
104. Lechner, H.A., Squire, L.R. and Byrne, J.H. 100 years of consolidation – remembering Müller and Pilzecker. *Learning & Memory* 6:77-87, 1999.
105. Chin, J., Angers, A., Cleary, L.J., Eskin, A. and Byrne, J.H. TGF- β 1 in *Aplysia*: Role of long-term changes in the excitability of sensory neurons and distribution of T β R-II-like immunoreactivity. *Learning & Memory*, 6:317-330, 1999.
106. Levenson, J., Byrne, J.H. and Eskin, A. Levels of serotonin in the hemolymph of *Aplysia* are modulated by light/dark cycles and sensitization training. *J. Neuroscience* 19:8094-8103, 1999.
107. Smolen, P., Baxter, D. and Byrne, J.H. Effects of macromolecular transport and stochastic fluctuations on the dynamics of genetic regulatory systems. *Am. J. Physiol.* 277:C777-C790, 1999.

108. Baxter, D.A., Canavier, C.C., Clark, J.W. and Byrne, J.H. Computational model of the serotonergic modulation of sensory neurons in *Aplysia*. *J. Neurophysiol.* 82:2914-2935, 1999.
109. Kabotyanski, E.A., Baxter, D.A., Cushman, S.J. and Byrne, J.H. Modulation of fictive feeding by dopamine and serotonin in *Aplysia*. *J. Neurophysiol.* 83:374-392, 2000.
110. Smolen, P., Baxter, D.A. and Byrne, J.H. Modeling transcriptional control in gene networks – Methods, recent results, and future directions. *Bltm. of Mathematical Biol.* 62:247-292, 2000.
111. Lechner, H.A., Baxter, D.A. and Byrne, J.H. Classical conditioning of feeding in *Aplysia*: I. Behavioral analysis. *J. Neuroscience* 20:3369-3376, 2000.
112. Lechner, H.A., Baxter, D.A. and Byrne, J.H. Classical conditioning of feeding in *Aplysia*: II. Neurophysiological correlates. *J. Neuroscience* 20:3377-3386, 2000.
113. Levenson, J., Sherry, D.M., Dryer, L., Chin, J., Byrne, J.H. and Eskin, A. Localization of glutamate and glutamate transporters in the sensory neurons of *Aplysia*. *J. Comp. Neurol.* 423:121-131, 2000.
114. Levenson, J., Endo, S., Kategaya, L.S., Fernandez, R.I., Brabham, D.G., Chin, J., Byrne, J.H. and Eskin, A. Long-term regulation of neuronal high-affinity glutamate and glutamate uptake in *Aplysia*. *Proc. Natl. Acad. Sci. U.S.A.* 97:12858-12863, 2000.
115. Smolen, P., Baxter, D.A. and Byrne, J.H. Modeling circadian oscillations with interlocking positive and negative feedback loops. *J. Neuroscience* 21:6644-6656, 2001.
116. Susswein, A.J., Hurwitz, I, Thorne, R., Byrne, J.H. and Baxter, D.A. Mechanisms of pattern generation underlying fictive feeding in *Aplysia*: The initiation and maintenance of protraction via coupling between a large neuron with only plateau-like activity and a small conventional neuron. *J. Neurophysiol.* 87:2307-2323, 2002.
117. Chin, J., Angers, A., Cleary, L.J., Eskin A. and Byrne, J.H. TGF- β 1 alters synapsin distribution and modulates synaptic depression in *Aplysia*. *J. Neuroscience* 22:RC220: 1-6, 2002.
118. Brembs, B., Lorenzetti, F.D., Reyes, F.D., Baxter, D.A. and Byrne, J.H. Operant reward learning in *Aplysia*: Neuronal correlates and mechanisms. *Science* 296:1706-1709, 2002.
119. Wainwright, M.L., Zhang, H., Byrne, J.H. and Cleary, L.J. Localized neuronal outgrowth induced by long-term sensitization training in *Aplysia*. *J. Neuroscience* 22:4132-4141, 2002.
120. Chin, J., Burdohan, J.A., Eskin, A. and Byrne, J.H. Inhibitor of glutamate transport alters synaptic transmission at sensorimotor synapses in *Aplysia*. *J. Neurophysiol.* 87:3165-3168, 2002.

121. Angers, A., Fioravante, D., Chin, J., Cleary, L.J., Bean, A.J., and Byrne, J.H. Serotonin stimulates phosphorylation of *Aplysia* synapsin and alters its subcellular distribution in sensory neurons. *J. Neuroscience* 22:5412-5422, 2002.
122. Nargeot, R., Baxter, D.A. and Byrne, J.H. Correlation between activity in neuron B52 and two features of fictive feeding in *Aplysia*. *Neuroscience Letters* 328:85-88, 2002.
123. Smolen, P., Baxter, D.A. and Byrne, J.H. A Reduced model clarifies the role of feedback loops and time delays in the *Drosophila* circadian oscillator. *Biophysical J.* 83:2349-2359, 2002.
124. Chen, H., Baozong, Y., Baxter, D.A. and Byrne, J.H. Signal processing and computational model for neural networks. *ICSP'02 Proc.* 2:1532-1535, 2002.
125. Chen, H., Baozong, Y., Baxter, D.A. and Byrne, J.H. Research and implementation of computer simulation system for neural networks. *ICSP'02 Proc.* 2:1834-1837, 2002.
126. Chen, H., Baozong, Y., Baxter, D.A. and Byrne, J.H. Parallel computation in computer simulation for neural networks. *Proc. IEEE TENCON'02*, 1:641-644, 2002.
127. Phares, G.A., Antzoulatos, E.G., Baxter, D.A. and Byrne, J.H. Burst-induced synaptic depression and its modulation contribute to information transfer at *Aplysia* sensorimotor synapses: Empirical and computational analyses. *J. Neuroscience* 23:8392-8401, 2003.
128. Antzoulatos, E., Cleary, L.J., Eskin, A., Baxter, D.A. and Byrne, J.H. Desensitization of postsynaptic glutamate receptors contributes to high-frequency homosynaptic depression of *Aplysia* sensorimotor connections. *Learning and Memory* 10:309-313, 2003.
129. Zhang, H., Wainwright, M., Byrne, J.H. and Cleary, L.J. Quantitation of contacts among sensory, motor and serotonergic neurons in the pedal ganglion of *Aplysia*. *Learning and Memory* 10:387-393, 2003.
130. Mozzachiodi, R., Lechner, H.A., Baxter, D.A., and Byrne, J.H. *In vitro* analogue of classical conditioning of feeding behavior in *Aplysia*. *Learning and Memory* 10:478-494, 2003.
131. Smolen, P., Baxter, D.A. and Byrne, J.H. Reduced models of the circadian oscillators in *Neurospora crassa* and *Drosophila melanogaster* illustrate mechanistic similarities. *OMICS: J. Integrative Biol.* 7:335-352, 2003.
132. Yu, X., Byrne, J.H. and Baxter, D.A. Modeling interactions between electrical activity and second-messenger cascades in *Aplysia* neuron R15. *J. Neurophysiol.* 91:2297-2311, 2003.
133. Luo, C., Clark, J.W., Canavier, C.C., Baxter, D.A., and Byrne, J.H. Multimodal behavior in a four neuron ring circuit: Mode switching. *IEEE Transactions on Biomedical Engineering* 51:205-218, 2004.

134. Smolen, P., Hardin, P.E., Lo, B.S., Baxter, D.A. and Byrne, J.H. Simulation of *Drosophila* circadian oscillations, mutations, and light responses by a model with VRI, PDP-1, and CLK. *Biophys. J.*, 86:2786-2802, 2004.
135. Brembs, B., Baxter, D.A. and Byrne, J.H. Extending *in vitro* conditioning in *Aplysia* to analyze operant and classical processes in the same preparation. *Learning and Memory*, 11:412-420, 2004.
136. Wüstenberg, D.G., Boytcheva, M., Grünewald, B., Byrne, J.H., Menzel, R., and Baxter, D.A. Current- and voltage-clamp recordings and computer simulations of Kenyon cells in the honeybee. *J. Neurophysiol.*, 92:2589-2603, 2004.
137. Wainwright, M.L., Byrne, J.H., and Cleary, L.J. Dissociation of morphological and physiological changes associated with long-term memory in *Aplysia*. *J. Neurophysiol.*, 92:2628-2632, 2004.
138. Khabour, O., Levenson, J., Lyons, L.C., Katagaya, L.S., Chin, J., Byrne, J.H. and Eskin, A. Co-regulation of glutamate uptake and long-term sensitization in *Aplysia*. *J. Neuroscience*, 24:8829-8837, 2004.
139. Pettigrew, D.B., Smolen, P., Baxter, D.A. and Byrne, J.H., Dynamic properties of regulatory motifs associated with induction of three temporal domains of memory in *Aplysia*. *J. Comput. Neurosci.*, 18:163-181, 2005.
140. Cataldo, E., Brunelli, M., Byrne, J.H., Av-Ron, E., Cai, Y. and Baxter, D.A. Computational model of touch mechanoafferent (T cell) of the leech: role of afterhyperpolarization (AHP) in activity-dependent conduction failure. *J. Comput. Neurosci.*, 18:5-24, 2005.
141. Hayes, R.D., Byrne, J.H., Cox, S.J. and Baxter D.A. Estimation of single-neuron model parameters from spike train data. *Neurocomputing*, 65-66C:517-529, 2005.
142. Reyes, F.D., Mozzachiodi, R., Baxter, D.A. and Byrne, J.H. Reinforcement in an *in vitro* analogue of appetitive classical conditioning of feeding behavior in *Aplysia*: Blockade by a dopamine antagonist. *Learning & Memory*, 12:216-220, 2005.
143. Mohamed, H.A., Yao, W., Fioravante, D., Smolen, P.D., Byrne, J.H. cAMP-response elements in *Aplysia creb1*, *creb2*, and *Ap-uch* promoters. *Journal of Biological Chemistry*, 280:27035-27043, 2005.
144. Phares, G. and Byrne, J.H. Analysis of 5-HT-induced short-term facilitation at *Aplysia* sensorimotor synapse during bursts: increased synaptic gain that does not require ERK activation. *J. Neurophysiol.*, 94:871-877, 2005.
145. Lorenzetti, F.D., Mozzachiodi, R., Baxter, D.A., Byrne, J.H. Classical and operant conditioning differentially modify the intrinsic properties of an identified neuron. *Nature Neuroscience*, 9:17-19, 2006.

146. Barbas, D., Zappulla, J.P., Angers, S., Bouvier, M., Mohamed, H.A., Byrne, J.H., Castellucci, V. F., and DesGroseillers, L. An aplysia dopamine₁-like receptor: molecular and functional characterization. *J. Neurochemistry*, 96:414-427, 2006.
147. Fioravante, D., Smolen, P.D., and Byrne, J.H. The 5-HT- and FMRFa-activated signaling pathways interact at the level of the Erk MAPK cascade: Potential inhibitory constraints on memory formation. *Neuroscience Letters*, 396:235-240, 2006. PMID#16356640
148. Song, H., Smolen, P.D., Av-Ron, E., Baxter, D.A., and Byrne, J.H. Bifurcation and singularity analysis of a molecular network for the induction of long-term memory. *Biophysical Journal*, 90:2309-2325, 2006. PMID#16428285
149. Smolen, P.D., Baxter, D.A., and Byrne, J.H. A model of the roles of essential kinases in the induction and expression of late long-term potentiation. *Biophysical Journal*, 90:2760-2775, 2006. PMID#16415049
150. Chin, J., Liu, R.Y., Cleary, L.J., Eskin, A. and Byrne, J.H. TGF- β 1-induced long-term changes in neuronal excitability in *Aplysia* sensory neurons depend on MAPK. *J. Neurophysiology*, 95:3286-3290, 2006. PMID#16617179
151. Av-Ron, E., Byrne, J.H. and Baxter, D.A. Teaching basic principles of neuroscience with computer simulations. *J. Undergrad. Neurosci. Edu.*, 4:A40-A52, 2006.
152. Antzoulatos, E.G., Wainwright, M.L., Cleary, L.J. and Byrne, J.H. Long-term sensitization training primes *Aplysia* for further learning. *Learning and Memory*, 13:422-425, 2006. PMID#16847306
153. Cataldo, E., Byrne, J.H. and Baxter, D.A. Computational model of a central pattern generator. *Computational Methods in Systems Biology, Proceedings Lec. Not. in Comput. Sci.* 4210:242-256, 2006.
154. Fukushima, T., Liu, R.Y. and Byrne, J.H. Transforming growth factor- β 2 modulates synaptic efficacy and plasticity and induces phosphorylation of CREB in hippocampal neurons. *Hippocampus*, 17:5-9, 2007. PMID#17094084
155. Antzoulatos, E.G. and Byrne, J.H. Long-term sensitization training produces spike narrowing in *Aplysia* sensory neurons. *J. Neuroscience*, 27:676-683, 2007. PMID#17234599
156. Baxter, D.A. and Byrne, J.H. Short-term plasticity in a computational model of the tail-withdrawal circuit in *Aplysia*. *Neurocomput.*, 70:1993-1999, 2007. PMID#17957237
157. Song, H., Smolen, P., Av-Ron, E., Baxter, D.A. and Byrne, J.H. Dynamics of a minimal model of interlocked positive and negative feedback loops of transcriptional regulation by cAMP-responsive element binding proteins. *Biophysical Journal*, 92:3407-3424, 2007. PMID#17277187

158. Fioravante, D., Liu, R.Y., Netek, A., Cleary, L.J. and Byrne, J.H. Synapsin regulates basal synaptic strength, synaptic depression and serotonin-induced facilitation of sensorimotor synapses in *Aplysia*. *J. Neurophysiology*, 98:3568-3580, 2007. PMID#17913990
159. Smolen, P., Baxter, D.A. and Byrne, J.H. Bistable MAP kinase activity: a plausible mechanism contributing to maintenance of late long-term potentiation. *Am. J. of Physiology-Cell Physiology*, 294: C503–C515, 2008. PMID#18057118
160. Liu, R.Y., Fioravante, D., Shah, S. and Byrne, J.H. cAMP response element-binding protein 1 feedback loop is necessary for consolidation of long-term synaptic facilitation in *Aplysia*. *J. Neuroscience*, 28: 1970-1976, 2008. PMID#18287513
161. Lorenzetti, F.D., Baxter, D.A. and Byrne, J.H. Molecular mechanisms underlying a cellular analogue of operant reward learning. *Neuron*, 59: 815-828, 2008. PMCID: PMC2603610
162. Mozzachiodi, R., Lorenzetti, F.D., Baxter, D.A., and Byrne, J.H. Changes in neuronal excitability serve as a mechanism of long-term memory for operant conditioning. *Nature Neuroscience*, 11:1146-1148, 2008. PMID#18776897
163. Fioravante, D., Liu, R.Y. and Byrne, J.H. The ubiquitin-proteasome system is necessary for long-term synaptic depression in *Aplysia*. *J. Neuroscience*. 28:10245-10256, 2008. PMCID: PMC2571080
164. Collado, M.S., Khabour, O., Fioravante, D., Byrne, J.H. and Eskin, A. Post-translational regulation of an *Aplysia* glutamate transporter during long-term facilitation. *J. Neurochemistry*. 108:176-189, 2009. PMCID: PMC2684684
165. Smolen, P.D., Baxter, D.A. and Byrne, J.H. Interlinked dual-time feedback loops can enhance robustness to stochasticity and persistence of memory. *Physical Review E*. 79:031902, 2009. PMCID: PMC2742492
166. Zhang, Y., Smolen, P.D., Baxter, D.A. and Byrne, J.H. The sensitivity of memory consolidation and reconsolidation to inhibitors of protein synthesis and kinases: Computational analysis. *Learning and Memory*, 17: 428-439, 2010. PMCID: PMC2948875
167. Liu, R.Y., Shah, S., Cleary, L.J. and Byrne, J.H. Serotonin- and training-induced dynamic regulation of CREB2 in *Aplysia*. *Learning and Memory*, 18:245-249, 2011. PMCID: PMC3072775
168. Liu, R.Y., Cleary, L.J. and Byrne, J.H. The requirement for enhanced CREB1 expression in consolidation of long-term synaptic facilitation and long-term excitability in sensory neurons of *Aplysia*. *J. Neuroscience*, 31:6871-6879, 2011. PMCID: PMC3092379
169. Lorenzetti, F.D., Baxter, D.A. and Byrne, J.H. Classical conditioning analog enhanced acetylcholine responses but reduced excitability of an identified neuron. *J. Neuroscience*, 31:14789-14793, 2011.

170. Zhang, Y., Liu, R.Y., Heberton, G.A., Smolen, P.D., Baxter, D.A., Cleary, L.J. and Byrne, J.H. Computational design of enhanced learning protocols *Nature Neuroscience*, in press.
171. Hart, A.K., Fioravante, D., Liu, R.Y., Phares, G.A., Cleary, L.J., and Byrne, J.H. Serotonin-mediated synapsin expression is necessary for long-term facilitation of the *Aplysia* sensorimotor synapse. *J. Neuroscience*, in press.

B. Invited Articles in Journals:

1. Kandel, E.R., Brunelli, M., Byrne, J.H. and Castellucci, V. A common presynaptic locus for the synaptic mechanisms underlying short-term habituation and sensitization of the gill-withdrawal reflex in *Aplysia*. *Cold Spring Harbor Symposium on Quantitative Biology*. 40:465-482, 1976.
2. Byrne, J.H. Quantitative reconstruction of the firing pattern of motor neurons mediating a simple behavior of *Aplysia*. *Proceedings of the 1978 Joint Automatic Control Conf.* 4:53-58, 1978.
3. Byrne, J.H. Ionic currents and behavior. *Trends in Neurosciences* 2:268-270, 1979.
4. Byrne, J.H. Cellular and biophysical mechanisms contributing to modulation of reflex excitability in *Aplysia*. *Fed. Proc.* 41:2147-2152, 1982.
5. Byrne, J.H. Neural and molecular mechanisms underlying information storage in *Aplysia*: Implications for learning and memory. *Trends in Neurosciences* 8:478-482, 1985.
6. Byrne, J.H. Can learning and memory be understood? *News in Physiological Sciences* 1:182-185, 1986.
7. Byrne, J.H. Cellular analysis of associative learning. *Physiological Reviews* 67:329-439, 1987.
8. Gingrich, K.J., Baxter, D.A. and Byrne, J.H. Mathematical model of cellular mechanisms contributing to presynaptic facilitation. *Brain Research Bulletin* 21:513-520, 1988.
9. Byrne, J.H., Eskin, A. and Scholz, K.P. Neuronal mechanisms contributing to long-term sensitization in *Aplysia*. *J. Physiology (Paris)* 83:141-147, 1989.
10. Byrne, J.H., Baxter, D.A., Buonomano, D.V. and Raymond, J.L. Neuronal and network determinants of simple and higher-order features of associative learning: Experimental and modeling approaches. *Cold Spring Harbor Symposium on Quantitative Biology* 55:175-186, 1990.
11. Cleary, L.J., Baxter D.A., Nazif, F.A. and Byrne, J.H. Neural mechanisms underlying sensitization of a defensive reflex in *Aplysia*. *Biological Bulletin* 180:252-261, 1991.
12. Baxter, D.A. and Byrne, J.H. Ionic mechanisms contributing to the electrophysiological properties of neurons. *Current Opinion in Neurobiology* 1:105-112, 1991.

13. Byrne, J.H., Baxter, D.A., Buonomano, D.V., Cleary, L.J., Eskin, A., Goldsmith, J.R., McClendon, E., Nazif, F.A., Noel, F. and Scholz, K.P. Neural and molecular bases of nonassociative and associative learning in *Aplysia*. *Annals of the New York Academy of Sciences* 627:124-149, 1991.
14. Endo, S., Ichinose, M., Critz, S.D., Eskin, A., Byrne, J.H. and Shenolikar, S. Protein phosphatases and their role in control of membrane currents in *Aplysia* neurons. *Adv. Prot. Phosphatases* 6:411-432, 1991.
15. Byrne, J.H., Zwartjes, R., Homayouni, R., Critz, S. and Eskin, A. Roles of second messenger pathways in neuronal plasticity and in learning and memory: Insights gained from *Aplysia*. In: *Advances in second messenger and phosphoprotein research*, Vol. 27, ed., A.C. Nairn and S. Shenolikar, New York, Raven Press, pp. 47-108, 1993.
16. Byrne, J.H., Canavier, C.C., Lechner, H., Clark, J.W. and Baxter, D.A. (1994) Role of nonlinear dynamical properties of a modeled bursting neuron in information processing and storage. *Netherlands Journal of Zoology* 44:339-356, 1994.
17. Kabotyanski, E.A., Ziv, I., Baxter, D.A. and Byrne, J.H. Experimental and computational analyses of a central pattern generator underlying aspects of feeding behavior of *Aplysia*. *Netherlands Journal of Zoology* 44:357-373, 1994.
18. Cleary, L.J., Byrne, J.H. and Frost, W.N. Role of interneurons in defensive withdrawal reflexes in *Aplysia*. *Learning & Memory* 2:133-151, 1995.
19. Byrne, J.H. and Kandel, E.R. Presynaptic facilitation revisited: state- and time-dependence. *J. Neuroscience* 16:425-435, 1996.
20. Baxter, D.A. and Byrne, J.H. Complex oscillations in simple neural systems. *Biol. Bltn.* 192:167-169, 1997.
21. Byrne, J.H. Plastic plasticity. *Nature* 389:791-792, 1997.
22. Lechner, H.A. and Byrne, J.H. New perspectives on classical conditioning: A synthesis of hebbian and non-hebbian mechanisms. *Neuron* 20:355-358, 1998.
23. Smolen, P., Baxter, D.A. and Byrne, J.H. Mathematical modeling of gene networks. *Neuron* 26:567-580, 2000.
24. Byrne, J.H. How neuroscientists captured the 2000 Nobel Prize. *Cerebrum* 3:66-79, 2001.
25. Smolen, P. and Byrne, J.H. Support of progress in clinical neurology by models of genetic regulation. *Archives of Neurology* 60:1053-1057, 2003.
26. Antzoulatos, E.G. and Byrne, J.H. Learning insights transmitted by glutamate. More than synaptic plasticity: Role of nonsynaptic plasticity in learning and memory. *Trends in Neurosciences* 27:555-560, 2004.

27. Byrne, J.H. and Suzuki, W.A. Editorial Overview: Neurobiology of behavior. *Current Opinion in Neurobiology*, 16:668-671, 2006.
28. Baxter, D.A. and Byrne, J.H. Feeding behavior of *Aplysia*: A model system for comparing cellular mechanisms of classical and operant conditioning. *Learning and Memory*, 13:669-680, 2006.
29. Av-Ron E., Byrne M.J., Byrne J.H. and Baxter D.A. SNNAP: A tool for teaching neuroscience. Brains, Minds, and Media, Vol.3, bmm1408, in: Lorenz S, Egelhaaf M (eds): *Interactive Educational Media for the Neural and Cognitive Sciences*, Brains, Minds & Media, 2008.
30. Mozzachiodi, R. and Byrne, J.H. More than synaptic plasticity: Role of nonsynaptic plasticity in learning and memory. *Trends in Neurosciences* 33:17-26, 2010. PMID: PMC2815214.
31. Fioravante, D. and Byrne, J.H. Protein degradation and memory formation. *Brain Research Bulletin*, 85:14-20, 2011. PMID: PMC3079012.

C. Chapters:

1. Byrne, J.H. and Koester, J. Neural mechanisms underlying the stimulus control of ink release in *Aplysia*. In: *Molluscan Nerve Cells: From Biophysics to Behavior*, eds. Koester, J. and Byrne, J.H., Cold Spring Harbor: Cold Spring Harbor Press, pp. 157-167, 1980.
2. Byrne, J.H. Intracellular stimulation. In: *Electrical Stimulation Techniques*, eds. Patterson, M.M. and Kesner, R. New York: Academic Press, 37-59, 1981.
3. Walters, E.T. and Byrne, J.H. Activity-dependent neuromodulation: A mechanism for associative plasticity. In: *Neuronal Growth and Plasticity*, ed. Kuno, M. Tokyo: Japan Scientific Societies Press, pp. 219-240, 1984.
4. Byrne, J.H., Ocorr, K.A., Walsh, J.P. and Walters, E.T. Analysis of associative and nonassociative neuronal modifications in *Aplysia* sensory neurons. In: *Neural Mechanisms of Conditioning*, eds. Alkon, D.L. and Woody, C.D. New York: Plenum, pp. 55-73, 1986.
5. Walters, E.T., Byrne, J.H., Carew, T.J. and Kandel, E.R. A comparison of simple defensive reflexes in *Aplysia*: Implications for general mechanisms of integration and plasticity. In: *Comparative Neurobiology: Modes of Communication in the Nervous System*, eds., Strumwasser, F. and Cohen, M. New York: John Wiley and Sons, pp. 181-205, 1986.
6. Baudry, M., Alkon, D.L., Andersen, P.O., Bliss, T.V.P., Byrne, J.H., Carew, T.J., Changeux, J.-P., Gerschenfeld, H.M., Ito, M., Kennedy, M.B., Nicoll, R., Mulle, C., Schmidt, R., Thompson, R.F. and Willmund, R. Activity-dependent regulation of synaptic transmission and its relationship to learning. In: *The Neural and Molecular Bases of Learning*, eds., Changeux, J.-P. and Konishi, M. Dahlem Konferenzen. New York: John Wiley and Sons, pp. 153-175, 1987.

7. Byrne, J.H., Cleary, L.J. and Susswein, A.J. Analysis of associative learning in *Aplysia*: Behavioural and cellular studies. In: *Growth and Plasticity of Neural Connections*, eds. Winlow, W. and McCrohan, C.R. England: Manchester University Press, pp. 186-205, 1987.
8. Byrne J.H., Eskin, A. and Scholz, K.P. Neural and molecular mechanisms of short- and long-term sensitization in *Aplysia*. In: *Modulation of Synaptic Transmission and Plasticity in Nervous Systems*, eds., Hertting, G. and Spatz, H.-Ch. Berlin: Springer-Verlag, 289-304, 1988.
9. Byrne, J.H. *Aplysia*, associative modifications of individual neurons. In: *Encyclopedia of Neuroscience*, ed., Adelman, G. Boston: Birkhauser, pp. 65-67, 1987 and reprinted In: *Comparative Neuroscience and Neurobiology*, ed., Irwin, L.N. Boston: Birkhauser, pp. 1-2, 1988, and In: *Learning and Memory*, ed., Thompson, R.F. Boston, Birkhauser, pp. 25-26, 1989.
10. Byrne, J.H. and Gingrich, K.J. Mathematical model of cellular and molecular processes contributing to associative and nonassociative learning in *Aplysia*. In: *Neural Models of Plasticity*, eds., Byrne, J.H. and Berry, W.O. Orlando: Academic Press, pp. 58-72, 1989.
11. Byrne, J.H., Gingrich, K.J. and Baxter, D.A. Computational capabilities of single neurons: Relationship to simple forms of associative and nonassociative learning in *Aplysia*. In: *Computational Models of Learning in Simple Neural Systems*, eds., Hawkins, R.D. and Bower, G.H. Orlando: Academic Press, pp. 31-63, 1989.
12. Cleary, L.J., Hammer, M. and Byrne, J.H. Insights into the cellular mechanisms of short-term sensitization in *Aplysia*. In: *Perspectives in Neural Systems*, eds., Carew, T.J. and Kelly, D. New York: Alan R. Liss Inc., pp. 105-119, 1989.
13. Byrne, J.H. Learning and memory in *Aplysia* and other invertebrates. In: *Neurobiology of Comparative Cognition*, eds., Kesner, R.P. and Olton, D.S. New Jersey: Lawrence Erlbaum Associates, Inc., pp. 293-315, 1990.
14. Byrne, J.H., Cleary, L.J. and Baxter, D.A. Aspects of the neural and molecular mechanisms of short-term sensitization in *Aplysia*: Modulatory effects of serotonin and cAMP on duration of action potentials, excitability and membrane currents in tail sensory neurons. In: *The Biology of Memory*, eds., Squire, L.R. and Lindenlaub, E. Stuttgart, F.K. Germany: Schattauer Verlag, pp. 7-28, 1990.
15. Baxter, D.A., Buonomano, D.V, Raymond, J.L., Cook, D.G., Kuenzi, F.M., Carew, T.J. and Byrne, J.H. Empirically derived adaptive elements and networks simulate associative learning. In: *Neural Network Models of Conditioning and Action*, eds., Commons, M.L., Grossberg, S. and Staddon, J.E.R. New Jersey: Lawrence Erlbaum Assoc. Inc., pp. 13-52, 1991.
16. Byrne, J.H. and Crow, T. Examples of mechanistic analyses of learning and memory in invertebrates. In: *Learning and Memory: A Biological View*, eds., Martinez, J.L., Jr. and Kesner, R.P. San Diego: Academic Press, pp. 329-358, 1991.

17. Nazif, F.A., Cleary, L.J. and Byrne, J.H. Morphological correlates of long-term sensitization in *Aplysia* are mimicked by cAMP. In: *Molluscan Neurobiology*, eds., Kits, K.S., Boer, H.H. and Joosse, J. Amsterdam: North Holland Publishing Company, pp. 174-178, 1991.
18. Byrne, J.H. Resting potentials and action potentials in excitable cells. In: *Essential Medical Physiology*, ed., Johnson, L.R. New York: Raven Press, pp. 43-60, 1991.
19. Byrne, J.H. Propagation of action potentials. In: *Essential Medical Physiology*, ed., Johnson, L.R. New York: Raven Press, pp. 61-68, 1991.
20. Byrne, J.H. Neuromuscular and synaptic transmission. In: *Essential Medical Physiology*, ed., Johnson, L.R. New York: Raven Press, pp. 69-84, 1991.
21. Byrne, J.H. and Downey, J.M. Electrical activity of the heart. In: *Essential Medical Physiology*, ed., Johnson, L.R. New York: Raven Press, pp. 165-178, 1991.
22. Byrne, J.H. Classical conditioning and operant conditioning. In: *Encyclopedia of Learning and Memory*, ed., Squire, L.R. New York: MacMillan Publishing Company, pp. 44-47, 1992.
23. Byrne, J.H. and Raymond, J.L. Conditioning, cellular and network schemes for higher-order features of classical. In: *Encyclopedia of Learning and Memory*, ed., Squire, L.R. New York: MacMillan Publishing Company, pp. 119-123, 1992.
24. Bauer, K.D., Byrne, J.H., Friedlander, M.J., König, P., Körner, E., Levy, W.B., Mishkin, M., Poggio, T.A., Willshaw, D.J. Group report: Forms and mechanisms of learning. In: *Exploring Brain Functions Models in Neuroscience*, eds., Poggio, T.A. and Glaser, D.A. New York: John Wiley and Sons Ltd., pp. 127-138, 1993.
25. Baxter, D.A. and Byrne, J.H. Learning rules from neurobiology. In: *The Neurobiology of Neural Networks*, ed., Gardner, D. MIT Press/Bradford Books, pp. 71-104, 1993.
26. Byrne, J.H. and Crow, T. Invertebrate models of learning: *Aplysia* and *Hermissenda*. In: *Handbook of Brain Theory and Neural Networks*, ed., Arbib, M. MIT Press/Bradford Books, pp. 487-491, 1995.
27. Byrne, J.H., Sugita, S. and Baxter, D.A. Roles of multiple second messenger systems in the serotonergic modulation of spike duration, membrane currents and synaptic connections of *Aplysia* sensory neurons. In: *Basic Neuroscience in Invertebrates*, eds., Koike, H., Takahashi, K. and Kidokoro, Y. Japan Scientific Societies Press, pp. 229-246, 1996.
28. Byrne, J.H. Resting potentials and action potentials in excitable cells. In: *Essential Medical Physiology, 2nd Edition*, ed., Johnson, L.R. Philadelphia: Lippincott-Raven Publishers, pp. 67-84, 1997.
29. Byrne, J.H. Propagation of the action potential. In: *Essential Medical Physiology, 2nd Edition*, ed., Johnson, L.R. Philadelphia: Lippincott-Raven Publishers, pp. 85-92, 1997.

30. Byrne, J.H. Neuromuscular and synaptic transmission. In: *Essential Medical Physiology, 2nd Edition*, ed., Johnson, L.R. Philadelphia: Lippincott-Raven Publishers, pp. 93-113, 1997.
31. Byrne, J.H. Learning and Memory. In: *Essential Medical Physiology, 2nd Edition*, ed., Johnson, L.R. Philadelphia: Lippincott-Raven Publishers, pp. 801-812, 1997.
32. Fox, K., Bienenstock, E., Bonhoeffer, T., Byrne, J.H., Davis, M., Frégnac, Y., Gierer, A., Hübener, M., Mauk, M.D., Shatz, C.J., Stryker, M.P. Group report: To what extent are activity-dependent processes common to development and learning? In: *Mechanistic Relationships Between Development and Learning*, eds., Carew, T., Menzel, R. and Shatz, C.J. Chichester: John Wiley & Sons, pp. 163-188, 1998.
33. Byrne, J.H. Postsynaptic potentials and synaptic integration. In: *Fundamental Neuroscience*, eds. Zigmond, M.J., Bloom, F.E., Landis, S.C., Roberts, J.L. and Squire, L.R. San Diego: Academic Press, pp. 345-362, 1998.
34. Beggs, J.M., Brown, T.H., Byrne, J.H., Crow, T., LeDoux, J.E., LaBar, K., Thompson, R.F. Learning and memory: Basic mechanisms. In: *Fundamental Neuroscience*, eds. Zigmond, M.J., Bloom, F.E., Landis, S.C., Roberts, J.L. and Squire, L.R. San Diego: Academic Press, pp. 1411-1454, 1998.
35. Byrne, J.H. *Aplysia*: Neural and molecular mechanisms of simple forms of learning. In: *The Encyclopedia of Neuroscience*, Second Edition, eds. Adelman, G. and Smith, B.H. Amsterdam: Elsevier Science, pp. 114-118, 1999.
36. Byrne, J.H. Invertebrate models of learning. In: *The Encyclopedia of Neuroscience*, Second Edition, eds. Adelman, G. and Smith, B.H. Amsterdam: Elsevier Science, pp. 981-984, 1999.
37. Canavier, C.C., Baxter, D.A., and Byrne, J.H. Repetitive action potential firing. In: *Nature Encyclopedia of Life Sciences*, London: Nature Publishing Group. [http://www.els.net/\[doi:10.1038/npg.els.0000084\]](http://www.els.net/[doi:10.1038/npg.els.0000084]), 2002, updated 2004.
38. Baxter, D.A., Canavier, C.C., Lechner, H.A., Butera, R.J., DeFranceschi, A.A., Clark, J.W., Byrne, J.H. Coexisting stable oscillatory states in single cell and multicellular neuronal oscillators. In: *Oscillations in Neural Systems*, eds., Levine, D., Brown, V. and Shirey, T. Hillsdale: Lawrence Erlbaum Associates, pp. 51-77, 2000.
39. Lorenzetti, F.D. and Byrne, J.H. Associative modifications of individual neurons. In: *International Encyclopedia of the Social and Behavioral Sciences*, eds. Smelser, N.J. and Baltes, P.B. Oxford: Elsevier Science, 2:849-53, 2001.
40. Phares, G.A. and Byrne, J.H. Heterosynaptic modulation of synaptic efficacy. In: *Nature Encyclopedia of Life Sciences*, London: Nature Publishing Group, 8:634-643, 2002, updated 2004.

41. Lorenzetti, F.D. and Byrne, J.H., *Aplysia*: Classical conditioning and operant conditioning. In: *Learning and Memory, second edition*, ed. Byrne, J.H. New York: MacMillan Publishing Company, pp. 33-37, 2003.
42. Phares, G.A. and Byrne, J.H., *Aplysia*: Molecular basis of long-term sensitization. In: *Learning and Memory, second edition*, ed. Byrne, J.H. New York: MacMillan Publishing Company, pp. 41-45, 2003.
43. Byrne, J.H., Postsynaptic potentials and synaptic integration. In: *Fundamental Neuroscience, second edition*, eds. Squire, L.R., Bloom, F.E., Roberts, J.L., Zigmond, M.J., McConnell, S. K. and Spitzer, N. C. San Diego: Academic Press, pp. 299-317, 2003.
44. Byrne, J.H., Learning and memory: Basic mechanisms. In: *Fundamental Neuroscience, second edition*, eds. Squire, L.R., Bloom, F.E., Roberts, J.L., Zigmond, M.J., McConnell, S.K. and Spitzer, N. C. San Diego: Academic Press, pp. 1275-1298, 2003.
45. Byrne, J.H. and Crow, T. Invertebrate models of learning: *Aplysia* and *Hermisenda*. In: *The Handbook of Brain Theory and Neural Networks, second edition*, ed., Arbib, M.A. Cambridge: The MIT Press, pp. 581-585, 2003.
46. Hayes, R.D., Byrne, J.H. and Baxter, D.A. Neurosimulation: Tools and resources. In *The Handbook of Brain Theory and Neural Networks, second edition*, ed., Arbib, M.A. Cambridge: The MIT Press, pp. 776-780, 2003.
47. Byrne, J.H. Resting potentials and action potentials in excitable cells. In: *Essential Medical Physiology, 3rd Edition*, ed., Johnson, L.R. San Diego: Academic Press, pp.71-88, 2003.
48. Byrne, J.H. Propagation of the action potential. In: *Essential Medical Physiology, Third Edition*, ed., Johnson, L.R. San Diego: Academic Press, pp. 89-96, 2003.
49. Byrne, J.H. Neuromuscular and synaptic transmission. In: *Essential Medical Physiology, Third Edition*, ed., Johnson, L.R. San Diego: Academic Press, pp. 97-122, 2003.
50. Byrne, J.H. Learning and Memory. In: *Essential Medical Physiology, Third Edition*, ed., Johnson, L.R. San Diego: Academic Press, pp. 905-918, 2003.
51. Byrne, J.H., Postsynaptic potentials and synaptic integration. In: *From Molecules to Networks: An Introduction to Cellular and Molecular Neuroscience*, eds. Byrne, J.H. and Roberts, J.L. San Diego: Elsevier, pp. 459-478, 2004.
52. Baxter, D.A., Canavier, C.C. and Byrne, J.H. Dynamical properties of excitable membranes. In: *From Molecules to Networks: An Introduction to Cellular and Molecular Neuroscience*, eds. Byrne, J.H. and Roberts, J.L. San Diego: Elsevier, pp.161-196, 2004.
53. Smolen, P., Baxter, D.A. and Byrne, J.H. Mathematical modeling and analysis of intracellular signaling pathways. In: *From Molecules to Networks: An Introduction to Cellular and Molecular Neuroscience*, eds. Byrne, J.H. and Roberts, J.L. San Diego: Elsevier, pp. 393-429., 2004.

54. Brown, T.H., Byrne, J.H., LaBar, K.S., LeDoux, J.E., Lindquist, D.H., Thompson, R.F. and Tyler, T.J. Learning and memory: Basic mechanisms. In: *From Molecules to Networks: An Introduction to Cellular and Molecular Neuroscience*, eds. Byrne, J.H. and Roberts, J.L. San Diego: Elsevier, pp. 499-574, 2004.
55. Byrne, J.H., Antzoulatos, E. and Fioravante, D. *Aplysia*: Neural and molecular mechanisms of simple learning. In: *Encyclopedia of Neuroscience, Third Edition*, eds. Adelman, G. and Smith, B.H. Amsterdam: Elsevier Science, 2004.
56. Byrne, J.H. Invertebrate models of learning. In: *Encyclopedia of Neuroscience, Third Edition*, eds. Adelman, G. and Smith, B.H. Amsterdam: Elsevier Science, 2004.
57. Byrne, J.H., Fioravante, D., and Antzoulatos, E.G. Cellular and molecular mechanisms of associative and non-associative learning. In: *Textbook of Neural Repair and Rehabilitation*, eds. Selzer, M., Clarke, S., Cohen, L.G., Duncan, P.W., and Gage, F.H. Cambridge: Cambridge University Press, Vol. I, pp. 79-94, 2006.
58. Byrne, J.H. Plasticity: New concepts, new challenges. In: *Science of Memory: Concepts*, eds. Roediger, H.L., Dudai, Y. and Fitzpatrick, S. Oxford University Press, Inc., pp. 77-82, 2007.
59. Baxter, D.A. and Byrne, J.H. Simulator for neural networks and action potentials (SNNAP): Description and application. In: *Methods in Molecular Biology: Neuroinformatics*, ed. Crasto, C. Totowa: The Humana Press Inc., pp. 127-154, 2007.
60. Fioravante, D., Antzoulatos, E.G., and Byrne, J.H. Sensitization and habituation: Invertebrate. In: J.D. Sweatt (Ed.), Volume 4 of *Learning and Memory: A Comprehensive Reference*, 4 vols. (J.H. Byrne Editor). Oxford: Elsevier Science Limited, pp. 31-51, 2008.
61. Lorenzetti, F.D. and Byrne, J.H. Cellular mechanisms of associative learning in *Aplysia*. In: J.D. Sweatt (Ed.), Volume 4 of *Learning and Memory: A Comprehensive Reference*, 4 vols. (J.H. Byrne Editor). Oxford: Elsevier Science Limited, pp. 149-156, 2008.
62. Mozzachiodi, R. and Byrne, J.H. Plasticity of intrinsic excitability as a mechanism for memory storage. In: J.D. Sweatt (Ed.), Volume 4 of *Learning and Memory: A Comprehensive Reference*, 4 vols. (J.H. Byrne Editor). Oxford: Elsevier Science Limited, pp. 829-838, 2008.
63. Byrne, J.H., Postsynaptic potentials and synaptic integration. In: *Fundamental Neuroscience, third edition*, eds. Squire, L.R., Berg, D, Bloom, F.E., Du Lac, S. Gosh, Spitzer, N. C. San Diego: Academic Press, pp. 227-245, 2008.
64. Byrne, J.H., Learning and memory: Basic mechanisms. In: *Fundamental Neuroscience, , third edition*, eds. Squire, L.R., Berg, D, Bloom, F.E., Du Lac, S. Gosh, Spitzer, N. C. San Diego: Academic Press, pp. 1133-1152, 2008.

65. Byrne, J.H., Antzoulatos, E.G, and Fioravante, D. Learning and memory in invertebrates: *Aplysia*. In: *Encyclopedia of Neuroscience*, ed. Squire, L.R. Oxford: Elsevier, Volume 5, pp. 405-412, 2009.
66. Mozzachiodi, R. and Byrne, J.H. Plasticity of intrinsic excitability. In: *Encyclopedia of Neuroscience*, ed. Squire, L.R. Oxford: Elsevier, Volume 7, pp. 733-739, 2009.
67. Smolen, P.D. and Byrne, J.H. Circadian rhythm models. In: *Encyclopedia of Neuroscience*, ed. Squire, L.R. Oxford: Elsevier, Volume 2, pp. 957-963, 2009.
68. Byrne, J.H. and Shepherd, G.M. Electronic properties of axons and dendrites. In: *From Molecules to Networks: An Introduction to Cellular and Molecular Neuroscience, second edition*, eds. Byrne, J.H. and Roberts, J.L. San Diego: Elsevier, pp. 111-132, 2009.
69. Baxter, D.A. and Byrne, J.H. Dynamical properties of excitable membranes. In: *From Molecules to Networks: An Introduction to Cellular and Molecular Neuroscience, second edition*, eds. Byrne, J.H. and Roberts, J.L. San Diego: Elsevier, pp. 181-216, 2009.
70. Smolen, P.D., Baxter, D.A. and Byrne, J.H. Modeling and analysis of intracellular signaling pathways. In: *From Molecules to Networks: An Introduction to Cellular and Molecular Neuroscience, second edition*, eds. Byrne, J.H. and Roberts, J.L. San Diego: Elsevier, pp. 413-444, 2009.
71. Byrne, J.H. Postsynaptic potentials and synaptic integration. In: *From Molecules to Networks: An Introduction to Cellular and Molecular Neuroscience, second edition*, eds. Byrne, J.H. and Roberts, J.L. San Diego: Elsevier, pp. 469-488, 2009.
72. Byrne, J.H. and Shepherd, G.M. Complex information processing in dendrites. In: *From Molecules to Networks: An Introduction to Cellular and Molecular Neuroscience, second edition*, eds. Byrne, J.H. and Roberts, J.L. San Diego: Elsevier, pp.489-512, 2009.
73. Byrne, J.H., LaBar, K.S., LeDoux, J.E., Schafe, G.E., Sweatt, J.D. and Thompson, R.F. Learning and memory: Basic mechanisms. In: *From Molecules to Networks: An Introduction to Cellular and Molecular Neuroscience, second edition*, eds. Byrne, J.H. and Roberts, J.L. San Diego: Elsevier, pp.539-608, 2009.
74. Byrne, J.H., Fioravante, D., and Antzoulatos, E.G. Cellular and molecular mechanisms of associative and nonassociative learning. In: *Textbook of Neural Repair and Rehabilitation, second edition*, eds. Selzer, M., Miller, R., Cohen, L, Clarke, S., and Kwakkel, G. Cambridge: Cambridge University Press, in press.

D. Books:

1. Koester, J. and Byrne, J.H., eds., *Molluscan Nerve Cells: From Biophysics to Behavior*, Cold Spring Harbor: Cold Spring Harbor Press, 1980.
2. Byrne, J.H. and Schultz, S.G. *An Introduction to Membrane Transport and Bioelectricity*, New York: Raven Press, 1988.
3. Byrne, J.H. and Berry, W.O., eds., *Neural Models of Plasticity*, Orlando: Academic Press, 1989.
4. Byrne, J.H. and Schultz, S.G. *An Introduction to Membrane Transport and Bioelectricity, (Foundations of General Physiology and Electrochemical Signalling), Second edition*, New York: Raven Press, 1994.
5. Byrne, J.H. and Schultz, S.G. *En bref... Transport Membranaire et Bioélectricité, Second edition*, Pennsylvania: Lippincott-Raven Publishers, 1997.
6. Byrne, J.H., ed., *Learning and Memory, Second edition*, New York: J.H. Macmillan Publishing Company, 2003.
7. Byrne, J.H. and Roberts, J.L., eds. *From Molecules to Networks: An Introduction to Cellular and Molecular Neuroscience*, San Diego: Elsevier, 2004.
8. Byrne, J.H., Eichenbaum, H., Menzel, R., Roediger, R. and Sweatt, D., eds., *Learning and Memory: A Comprehensive Reference, 4 volumes*, Oxford: Elsevier, 2008.
9. Byrne, J.H., ed., *Concise Learning and Memory - the editor's selection*, Oxford: Elsevier, 2009.
10. Byrne, J.H. and Roberts, J.L., eds. *From Molecules to Networks: An Introduction to Cellular and Molecular Neuroscience, Second edition*, San Diego: Elsevier, 2009.
11. Byrne, J. H. (ed.), *Neuroscience Online: An Electronic Textbook for the Neurosciences* <http://nba.uth.tmc.edu/neuroscience/> Department of Neurobiology and Anatomy, The University of Texas Medical School at Houston (UTHealth) © 1997.