

CURRICULUM VITAE

DATE: January 9, 2020

NAME: David William Marshak

PRESENT TITLE: Professor

ADDRESS: Department of Neurobiology and Anatomy
University of Texas Medical School
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BIRTHDATE: November 28, 1953

CITIZENSHIP: U.S.A.

UNDERGRADUATE EDUCATION:

1971-1975 Cornell University, Ithaca, NY; B.A., Anthropology, 1975

GRADUATE EDUCATION:

1976-1982 Jules Stein Eye Institute and Department of Anatomy,
University of California, Los Angeles, Los Angeles, CA;
Ph.D., Anatomy, 1982

POSTGRADUATE TRAINING:

1982-1984 Postdoctoral Fellow, Biological Laboratories,
Harvard University, Cambridge, MA

ACADEMIC APPOINTMENTS:

1984-1992 Assistant Professor, Department of Neurobiology and Anatomy,
The University of Texas Medical School, Houston, TX

1992-2002 Associate Professor, Department of Neurobiology and Anatomy,
The University of Texas Medical School, Houston, TX

1997-2002 Associate Professor, Department of Ophthalmology and Visual Sciences,
The University of Texas Medical School, Houston, TX

2002-present Professor, Department of Neurobiology and Anatomy,
The University of Texas Medical School, Houston, TX

2002-present Professor, Department of Ophthalmology and Visual Sciences,
The University of Texas Medical School, Houston, TX

PROFESSIONAL ORGANIZATIONS:

1978-present	Association for Research in Vision and Ophthalmology
1978-present	Society for Neuroscience
1989-present	International Society for Eye Research
1992-present	International Color Vision Society
2005-2019	Houston Chapter Representative, Society for Neuroscience
2014-present	American Association of Anatomists

HONORS AND AWARDS:

1975	Graduated <i>cum laude</i> , Cornell University
1977-1980	NIH Predoctoral Traineeship
1979	ARVO Travel Fellowship
1981-1982	NIH Predoctoral Traineeship
1982-1984	National Research Service Award, National Eye Institute
1984	Grass Foundation Fellowship in Neurophysiology
1993	Travel Award, International Research Group on Colour Vision Deficiencies
1998, 2000	Deans' Excellence Award
2009-16, 2018	Dean's Teaching Excellence Award
2010	Fellow of the Association for Research in Vision and Ophthalmology
2010	Best Lecturer in Gross Anatomy, University of Texas Medical School
2013	Academy of Master Educators, University of Texas Medical School at Houston
2016	University of Texas Regents' Outstanding Teaching Award

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

Reviewer, Visual Sciences A2 Study Section, Division of Research Grants, NIH, 1990
Reviewer for Eloise Gerry Awards, Sigma Delta Epsilon, 1991
Reviewer for Department of Veteran's Affairs, 1986 and 1992
Reviewer for National Research Council, Committee for the Study of Research-Doctorate Programs in the United States, 1993
Reviewer for International Science Foundation, Long-term Research Grants Program, 1993
Faculty Affiliate, Keck Center for Computational Biology, Rice University 1999 to present
Guest Editorial Board member, Investigative Ophthalmology and Visual Sciences, 2000
Member, Annual Meeting Program Committee, Retinal Cell Biology Section, Association for Research in Vision and Ophthalmology, 1999-2002.
Editorial Board member, Visual Neuroscience, 2002 to 2014
Reviewer, SSS-P Special Emphasis Panel, Center for Scientific Review, NIH, 2002
Reviewer, ZRG1 F03B Special Emphasis Panel, Center for Scientific Review, NIH, 2002
Scientific Review Group 2009/10 ZRG1 CB-J (58) Center for Scientific Review, NIH, 2009
Scientific Advisory Board VIVO: Enabling National Network of Scientists, 2010 to present
Reviewer, ZRG1 MDCN-R (04) Special Emphasis Panel, Center for Scientific Review, NIH, 2013
Reviewer, ETTN-10 Small Business Panel, Center for Scientific Review, NIH, 2014
Member, Professional Development and Education Committee, Association of Research in Vision and Ophthalmology, 2014 to 2018
Reviewer, Pennsylvania Lions Sight Conservation and Eye Research Foundation, 2014 to present
Member of Special Emphasis Panel: ZNS1 SRB-E (04), Scientific Review Branch, NINDS, 2015

Member University of Texas System Faculty Advisory Committee, 2014-2016
Member of Special Emphasis Panel ZRG1 BDCN-R (04), Center for Scientific Review, NIH, 2015
Member of Special Emphasis Panel ZRG1 ETTN-C (10) B Center for Scientific Review, NIH, 2015
Member of Special Emphasis Panel ZRG1 BDCN-R (90) S Center for Scientific Review, NIH, 2015
Vision Research Program, Technology/Therapeutic Development Award Department of Defense
Congressionally Directed Medical Research Programs, Scientific Reviewer 2016 and Chair 2020
Member of UT System Neuroscience & Neurotechnology Research Institute Advisory Board, 2016
Reviewer, ZRG1 IFCN T 50 BRAIN Initiative: Targeted BRAIN Circuits Projects, NIH, 2018
Reviewer, Special Emphasis Panel/Scientific Review Group 2018/10 ZRG1 BDCN-R, NIH, 2018
Reviewer, Israel Science Foundation, 2020

COMMUNITY SERVICE:

Volunteer coach in youth sports programs, Southwest YMCA, Houston, TX, 1995 to 2004
Volunteer at “Razzle, dazzle, sparkle and shine: an exhibition of light and color” Museum of Health and Medical Science, Houston, TX, 1999
Assistant Scoutmaster, Troop 11 Boy Scouts of America, Houston, TX, 2001 to 2007
Content advisor, “Heads Up”, a public education project jointly sponsored by UT School of Public Health, Spring Branch ISD and the UT Office of Academic Affairs, 2003

OTHER NATIONAL AND INTERNATIONAL ACTIVITIES (last 15 years):

Invited speaker at the University of Houston, College of Optometry: Retinopetal Axons in Mammalian Retinas, Houston, Texas, 2005
Invited speaker at the annual meeting of the Houston Society for Engineering in Medicine and Biology: Retinopetal Axons in Mammalian Retinas, Houston, Texas, 2006
Organizer and moderator, symposium Color Vision in Primates: New Ideas about Spectral Coding and Processing, annual meeting of the Association for Research in Vision and Ophthalmology, Ft. Lauderdale, Florida, 2006
Moderator, platform session Signal Shaping in the Inner Plexiform Layer, FASEB Summer Conference on Retinal Circuitry, Indian Wells, CA, 2006
Steering Committee Member, Houston Society for Engineering in Medicine and Biology, 2007
Invited speaker at the University of Oklahoma School of Medicine: Retinopetal axons in mammalian retinas, Oklahoma City, OK, 2007
Invited speaker at the Louisiana State University Health Science Center: Retinopetal axons in primate retinas. Shreveport, LA, 2010
Invited speaker at Northwestern University School of Medicine: Hypothalamic inputs modulate retinal function in primates. Chicago, IL, 2011.
Invited speaker at the Second Annual Science of Team Science Conference: What faculty members want from a research information system. Chicago, IL, 2011.
Invited speaker at the University of Houston College of Optometry: Hypothalamic inputs modulate retinal function in primates. Houston, TX, 2013.
Invited speaker at the Dowling-Werblin Symposium Half a Century of Retina Research: Neural Circuitry, Retinal Disorders, and Restoration of Vision October 7 – October 9, 2016, Sonoma, CA.

SERVICE ON THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER COMMITTEES:

Summer Research Program for Undergraduates,
Neuroscience Program Representative

1988-present

Graduate School of Biomedical Sciences, Academic Standards Committee	1990-1993
Graduate School of Biomedical Sciences, Admissions Committee	2002-2005
University of Texas Health Sciences Center, Academic and Administrative Leadership Program	2005-2006
Inter-Faculty Council (Chair, 2014)	2010-2019
Review committee for the 2018 UTHHealth GSBS Dissertation Award.	2018
Institutional Conflict of Interest Committee	2017-2019

SERVICE ON THE UNIVERSITY OF TEXAS MEDICAL SCHOOL AT HOUSTON COMMITTEES:

Elections Committee	1989-1992
Faculty Development Leave Committee	1991-1994
Student-Faculty Relations Committee	1991-1994
Curriculum Committee	1992-1995, 2014-2017
Faculty Senate	1992-1995, 2001-2003
Admissions Committee	1995-1996, 2015-present
Committee on Committees	2001, 2003
Faculty Appointments, Promotion and Tenure Committee	2004-2010
Animal Welfare Committee	2009-2012
Post-tenure Review Committee	2012-present

TEACHING RESPONSIBILITIES:

Human Gross Anatomy	1984-2015
Neuroscience	1986-1988
Developmental Anatomy	1987, 1994
Fundamentals of Clinical Medicine, facilitator	1994-1995
Anatomy and Oncology for Medical Physics	1997-1998
Anatomy Dissection (MS4 elective)	2009-present
Systems Neurobiology	1991, 1998-2000
Cellular Neurobiology	1990-1997
Vision I	1987-present
Vision II	1994
Neurochemistry	1986-1988
Principles and Techniques of Electron Microscopy	1985-1992
Current Topics in Neuroscience	1997-2011
Seminars in Neuroscience	2006-2011
Systems Neuroscience	2010
Module Director, Musculoskeletal and Dermatology	2014-present
Developmental Anatomy	2015-2017

Foundations of Medical Science

2016-present

SPONSORSHIP OF POSTDOCTORAL FELLOWS:

Nobuo Kouyama, Ph.D.	1989-1991
J. Nicolai B. Larsen, M.D.	1991
Donna Stafford, Ph.D.	1993-1994
Elizabeth Yamada, M.D., Ph.D.	1996-1999
Garrett Kenyon, Ph.D.	1996-2000
Christina Seay, Ph.D.	1999
Sally Firth, Ph.D.	1999-2002
Jianguo Xiao, Ph.D.	2002-2004
Hideo Hoshi, Ph.D.	2004-2005
Yong-Chun Yu, M.D., Ph.D.	2006-2007
Hiromasa Satoh, Ph.D.	2007-2009
Renata Frazão, Ph.D.	2008-2009
Ye Long, M.D., Ph.D.	2012-2016

SPONSORSHIP OF STUDENTS:

Roy A. Jacoby, B.S.	1993-1998
Jennifer O'Brien, B.S.	1997-1998
Matthew Gastinger, B.S.	1997-2004
Alejandro Vila, B.S.	2006-2009

CURRENT GRANT SUPPORT:

National Eye Institute Research Grant (Principal Investigator, Jay Neitz)

1. Title: Linking retinal circuits to perception
2. Grant number: R01EY027859
3. Period of support: February 1, 2018 –January 31, 2023
4. Total direct cost of the subcontract: \$250,775

The goal of these experiments is to describe the neural circuits that process information from short wavelength-sensitive cones in the primate retina at the level of synapses between identified populations of neurons. Role: Consortium Principal Investigator, 7.5 % effort

PAST GRANT SUPPORT:

A. Small Business Research Initiative (Principal Investigator, Stephen H. Bartelmez)

1. Title: Autologous: TGFBI Modified CD34+ Stem Cells for Repair of Diabetic Macular Edema and Macular Ischemia
2. Grant Number: R44 EY028070
3. Period of Support: September 30, 2017 to September 29, 2018
4. Total Direct Cost: \$100,000

B. UT BRAIN Seed Grant Program (Principal Investigator, David Marshak)

1. Title: Analysis of Neural Circuits by Electron Tomography
2. Grant number: 363303
3. Period of support: September 1, 2015 to August 31, 2017
4. Total direct cost: \$100,000

C. National Eye Institute Research Grant (Principal Investigator, Robert E. Marc)

1. Title: Structural neurochemistry of retinal circuits
2. Grant number: EY002576
3. Period of support: December 1, 2011 to November 30, 2017
4. Total direct cost of subcontract: \$359,465

D. National Eye Institute Research Grant (Principal Investigator, David Marshak)

1. Title: Structure and function of neurons in primate retina
2. Grant number: EY06472
3. Period of support: September 30, 2010 to August 31, 2014
4. Total direct costs: \$623,596

E. National Institute of Neurological Diseases and Stroke Training Grant (Principal Investigator)

1. Title: Short term training in neuroscience
2. Grant number: NS064931
3. Period of support: July 1, 2009 to June 30, 2014
4. Total direct costs: \$157,350

F. Teagle Foundation Subcontract (Principal Investigator, Jessica Logan)

1. Implementing and evaluating distributed practice and self-testing in the classroom
2. Grant number: R03032
3. Period of support: July 1, 2008 to June 30, 2011
4. Total direct costs: \$45,468

G. National Eye Institute Research Grant (Principal Investigator, David Marshak)

1. Title: Retinopetal axons of mammalian retinas
2. Grant number: EY06472
3. Period of support: September 1, 2005 to August 31, 2010
4. Total direct costs: \$2,409,246

H. National Eye Institute Research Grant (Principal Investigator, David Marshak)

1. Title: Primate retinal ganglion cells
2. Grant number: EY06472
3. Period of support: April 1, 1999 to March 31, 2005
4. Total direct costs: \$737,738

I. National Institute of Neurological Diseases and Stroke Program Project Grant, Project Leader

1. Project 4: Light and Dark Adaptation in the Primate Retina
2. Grant number: NS38310
3. Period of support: August 25, 1999 to May 31, 2004
4. Total direct costs: \$598,658

J. Plum Foundation (Principal Investigator, David Marshak)

1. Support for Scientific Research
2. Period of support: February 22, 2002 to June 17, 2004
3. Total direct costs: \$25,150

K. Fight for Sight Postdoctoral Fellowship (to Dr. Sally Firth)

1. Title: Release of Dopamine from the Primate Retina
2. Grant number: PD01032
3. Period of Support: July 1, 2001 to June 30, 2002
4. Total direct costs: \$14,000

L. National Eye Institute Research Grant (Principal Investigator, David Marshak)

1. Title: Centrifugal axons of the primate retina
2. Grant number: EY12610
3. Period of support: May 1, 1999 to April 30, 2002
4. Total direct costs: \$163,180

M. Robert J. Kleberg, Jr. and Helen C. Kleberg Foundation (Principal Investigator, David Marshak)

1. Title: The role of histamine in diabetic eye disease
2. Period of support: July 1, 1998 to June 30, 2000
3. Total direct costs: \$100,000

N. National Eye Institute Research Grant (Principal Investigator, David Marshak)

1. Title: Peptidergic neurons of the primate retina
2. Grant number: EY06472
3. Period of support: April 1, 1995 to March 31, 1999
4. Total direct costs: \$497,13

O. National Research Service Award (to Mr. Roy Jacoby)

1. Title: Inputs to parasol ganglion cells in macaque retina
2. Grant number: MH10957
3. Period of support: January 1, 1996 to December 31, 1998
4. Total direct costs: \$39,024

P. Pew Charitable Trust, Latin American Scholars Program (to Dr. Elizabeth Yamada)

1. Title: Cholinergic input to M ganglion cells in the primate retina
2. Grant number: P0199SC
3. Period of support: July 1, 1997 to June 30, 2000
4. Total direct costs: \$75,000

Q. Texas Advanced Research Program (Co-principal Investigator Greg Maguire)

1. Title: Functions of dopaminergic neurons in the primate retina
2. Grant number: 011618027
3. Period of support: January 1, 1994 to August 31, 1996
4. Total direct costs: \$187,378

R. National Science Foundation Research Grant (Principal Investigator, David Marshak)

1. Title: Dopaminergic interplexiform cells of the retina
2. Grant number: IBN-9223834
3. Period of support: June 1, 1993 to May 31, 1997
4. Total direct costs: \$120,437

S. National Research Service Award (to Dr. Donna Stafford)

1. Title: Blue cone bipolar cells of the macaque retina
2. Grant number: EY 06471
3. Period of support: January 22, 1994 to January 21, 1997
4. Total direct costs: \$72,900

T. Fight for Sight, Inc. Postdoctoral Fellowship (to Dr. Donna Stafford)

1. Title: Blue cone bipolar cells of the macaque retina
2. Grant number: PD 92040
3. Period of support: September 1, 1992 to August 31, 1993
4. Total direct costs: \$14,000

U. National Eye Institute Research Grant (Principal Investigator, David Marshak)

1. Title: Peptidergic neurons of the primate retina
2. Grant number: EY06472-04
3. Period of support: September 30, 1990 to September 29, 1994
4. Total direct costs: \$302,943

V. Fight for Sight, Inc. Postdoctoral Fellowship (to Dr. Nobuo Kouyama)

1. Title: Peptidergic bipolar cells in the retina of the macaque monkey
2. Grant number: PD 89-060
3. Period of support: September 1, 1989 to August 31, 1990
4. Total direct costs: \$12,000

W. Texas Advanced Research Program (Len Cleary and David Marshak Principal Investigators)

1. Title: Morphological basis of neuromodulation in two simple systems
2. Grant number: 1945
3. Period of support: June 1, 1988 to May 31, 1990
4. Total direct costs: \$146,802

X. National Eye Institute Research Grant (Principal Investigator, David Marshak)

1. Title: Peptidergic neurons of the primate retina
2. Grant number: EYO6472
3. Period of support: May 1, 1986 to May 31, 1990
4. Total direct cost: \$238,731

Y. National Eye Institute Pilot Project Grant (Principal Investigator, David Marshak)

1. Title: Peptidergic neurons of the macaque retina
2. Grant number: EY05705
3. Period of support: September 7, 1984 to April 6, 1986
4. Total direct costs: \$14,939

PUBLICATIONS:

Abstracts

1. Marshak, D., Yamada, T., Walsh, J., and Stell, W.: Characterization of immunoreactive somatostatin in retina. *Invest. Ophthalmol. Vis. Sci.* 20 (suppl.):85, 1979.
2. Marshak, D., Lightfoot, D., Yamada, T., and Stell, W.: Ultrastructural localization of somatostatin-like immunoreactivity in goldfish retinal amacrine cells. *Soc. Neurosci. Abst.* 7:98, 1981.
3. Yamada, T., Marshak, D., and Basinger, S.: The retina: a model for study of brain-gut peptides. *Proceedings of Brain-gut axis: a new frontier* 198, 1981.
4. Marshak, D., Reeve, J. Shively, J., and Yamada, T.: Biochemical characterization of retinal somatostatins: sequence of big somatostatin in bovine retina. *Soc. Neurosci. Abst.* 8:13, 1982.
5. Marshak, D., Dowling, J., and Yamada, T.: Glucagon-like immunoreactivity in goldfish amacrine cells. *Invest. Ophthalmol. Vis. Sci.* 24 (suppl.):223, 1983.

6. Li, H.B., Marshak, D.W., and Dowling, J.E.: Multiple types of amacrine cells in goldfish containing substance P-like and neurotensin-like immunoreactivity. *Invest. Ophthalmol. Vis. Sci.* 24 (suppl.):222, 1983.
7. Marshak, D., Ariel, M., and Dowling, J.: Laminar distribution of inputs to retinal ganglion cells. *Invest. Ophthalmol. Vis. Sci.* 25 (suppl.):284, 1984.
8. Marshak, D., and Dowling, J.: Chemical synapses of cone horizontal cell axons in the goldfish retina. *Soc. Neurosci. Abst.* 10:21, 1984.
9. Marshak, D.: Synapses of peptide immunoreactive neurons in macaque retina. *Invest. Ophthalmol. Vis. Sci.* 27 (suppl.):331, 1986.
10. Fry, K., Pachter, J., Marshak, D., and Lam, D.: Evidence for PHM as a neuroactive substance in mammalian retina. *Invest. Ophthalmol. Vis. Sci.* 27 (suppl.):184, 1986.
11. Marshak, D., Sharp, B., and Taylor, I.: Localization of immunoreactive corticotrophin releasing factor and neuropeptide Y in macaque retina. *Soc. Neurosci. Abst.* 12:640, 1986.
12. Marshak, D., Ellard, J., DeJean, B., Byers, J., Rokaeus, A., and Aldrich, L.: Neuropeptides in macaque retina and uvea. *Invest. Ophthalmol. Vis. Sci.* 29 (suppl.):271, 1988.
13. Zhang, Z., Cleary, L.J., Marshak, D.W., and Byrne, J.H.: Serotonergic varicosities make apparent synaptic contacts with pleural sensory neurons of *Aplysia*. *Soc. Neurosci. Abst.* 14:841, 1988.
14. Prager, T.C., Garcia, C.A., Mincher, C.A., and Marshak, D.W.: The pattern electroretinogram in diabetic retinopathy. *Invest. Ophthalmol. Vis. Sci.* 30 (suppl.):436, 1989.
15. Rodieck, R.W., and Marshak, D.W.: Spatial distribution of Chat-immunoreactive amacrine cells in the macaque retina. *Soc. Neurosci. Abst.* 15: 1207, 1989.
16. Kouyama, N., and Marshak, D.: Peptidergic bipolar cells selectively contact blue cones in the macaque monkey retina. *Invest. Ophthalmol. Vis. Sci.* 31:37, 1990.
17. Marshak, D.: Peptidergic neurons of the macaque retina. *Abst. Intl. Cong. Eye Res.* 9:283, 1990.
18. Waymire, J., Hemelt, V. and Marshak, D.: Evidence that pituitary adenylate cyclase activator peptide (PACAP) is a presynaptic neurotransmitter in the bovine adrenal medulla. *Soc. Neurosci. Abst.* 18:990, 1992.
19. Kouyama, N. and Marshak, D.: Bipolar cells in the blue cone system of macaque retina. *Jpn. J. Physiol.* 42 (suppl.):197, 1992.
20. Zhou, J., Marshak, D. and Fain, G.: Amino acid receptors of primate midget and parasol ganglion cells in a retinal slice. *Soc. Neurosci. Abst.* 19:1258, 1993.
21. Zhou, J., Marshak, D. and Fain, G.: Synaptic receptors of primate midget and parasol ganglion cells in a retinal slice preparation. *Invest. Ophthalmol. Vis. Sci.* 35:1909, 1994.

22. Stafford, D., Marshak, D., Jacoby, R., and Kouyama, N.: Blue cone bipolar cells of the macaque retina. *Invest. Ophthalmol. Vis. Sci.* 35:1909, 1994.
23. Jacoby, R., and Marshak, D.: Diffuse bipolar cell inputs to parasol ganglion cells in the macaque retina. *Invest. Ophthalmol. Vis. Sci.* 36:S4, 1995.
24. Marshak, D., Jacoby, R., Stafford, D., and Kouyama, N.: Synaptic inputs to parasol ganglion cells in primate retina. *Invest. Ophthalmol. Vis. Sci.* 36:S602, 1995.
25. Boelen, M.K., Megaw, P.L., Morgan, I.G., and Marshak, D.W.: The retinal night-day switch: a neuronal flip-flop device. *Soc. Neurosci. Abst.* 21:1036, 1995.
26. Jacoby, R., Marshak, D., Stafford, D., Kouyama, N., and Wiechmann, A.: Synaptic inputs to parasol ganglion cells in the primate retina. *Soc. Neurosci. Abst.* 21:509, 1995.
27. Boelen, M.K., Boelen, M.G., and Marshak, D.W.: Light-stimulated release of dopamine from the primate retina is blocked by APB. *Invest. Ophthalmol. Vis. Sci.* 37:S951, 1996.
28. Jacoby, R.A., and Marshak, D.: Inputs to parasol ganglion cells in macaque retina. *Invest. Ophthalmol. Vis. Sci.* 37:S950, 1996.
29. Jacoby, R.A., and Marshak, D.W.: Amacrine cells tracer-coupled to parasol ganglion cells contain cholecystokinin. *Soc. Neurosci. Abst.* 22:1603, 1996.
30. Marshak, D.W.: Secretoneurin-IR amacrine cells of the macaque retina. *Invest. Ophthalmol. Vis. Sci.* 38:S50, 1997.
31. Yamada, E.S., and Marshak, D.W.: Wide-field ganglion cells show tracer-coupling to amacrine cells. *Invest. Ophthalmol. Vis. Sci.* 38:S50, 1997.
32. Kenyon, G.T., and Marshak, D.W.: A linear, mathematical model of M ganglion cell interactions with amacrine cells. *Invest. Ophthalmol. Vis. Sci.* 38:S233, 1997.
33. Jacoby, R.A., and Marshak, D.W.: Synaptic connections of DB3 bipolar cell axons in the macaque inner plexiform layer. *Soc. Neurosci. Abst.* 23:727, 1997.
34. Yamada, E.Y., Marshak, D.W., and Casagrande, V.: Morphology of P and M ganglion cells in the bush baby. *Soc. Neurosci. Abst.* 23:728, 1997.
35. Marshak, D.W., and Gasteringer, M.J.: Centrifugal axons in the macaque retina contain immunoreactive histamine. *Invest. Ophthalmol. Vis. Sci.* 39:S564, 1998.
36. Kolb, H., DeKorver, L., Church, J., Crooks, J., Jacoby, R. and Marshak, D.: P cells of the primate retina. *Invest. Ophthalmol. Vis. Sci.* 39:S565, 1998.
37. Kenyon, G., Travis, B. and Marshak, D.: Computer model of the primate cone-horizontal cell network. *Soc. Neurosci. Abstracts* 24:1027, 1998.

38. Yamada, E., Keyser, K., Dimitryeva, N., Lindstrom, J., and Marshak, D.: Cholinergic input to bipolar cell axon terminals in the macaque retina. *Soc. Neurosci. Abstracts* 24:520, 1998.
39. Yamada, E., Jacoby, R. and Marshak, D.: Cholinergic amacrine cells contain calbindin and alpha-CaM kinase II. *Invest. Ophthalmol. Vis. Sci.* 40:S439, 1999.
40. Gastinger, M., Marshak, D., Gardner, T. and Barber, A.: Histamine-containing centrifugal axons in the rat retina. *Soc. Neurosci. Abstracts* 25:135, 1999.
41. Kenyon, G., Moore, K. and Marshak, D.: Stimulus-specific synchronization between alpha ganglion cells in a computer model of the mammalian retina. *Soc. Neurosci. Abstracts* 25:1042, 1999.
42. Kolb, H., DeKorver, L., Yamada, E. and Marshak, D.: EM reconstruction of an ON midget ganglion cell in central monkey retina. *Invest. Ophthalmol. Vis. Sci.* 41:S936, 2000.
43. Gastinger, M., Marshak, D., Gardner, T. and Barber, A.: Histamine immunoreactivity in experimental diabetic rat retinas. *Invest. Ophthalmol. Vis. Sci.* 41:S408, 2000.
44. Kenyon, G.T. and Marshak, D.W.: Synchrony of ganglion cells encodes stimulus intensity in a retinal model. *Soc. Neurosci. Abstracts* 26: 1328, 2000.
45. Kenyon, G.T. and Marshak, D.W.: Amacrine cells synchronize the firing of alpha ganglion cells over a wide range of stimulus intensities in a retinal model. *Invest. Ophthalmol. Vis. Sci.* 42:S674, 2001.
46. Firth, SI, Kaufman, P.L. and Marshak, D.W.: Innervation of the uvea by somatostatin and galanin immunoreactive axons in macaques and baboons. *Invest. Ophthalmol. Vis. Sci.* 42:S210, 2001.
47. Kenyon, G.T., Jeffs, J., Theiler, J., Travis, B.J. and Marshak, D. W.: Firing correlations allow improved discrimination of stimulus parameters. *Soc. Neurosci. Abstr.* 27, program no. 821.24, 2001.
48. Perryman, W.C., Massey, T. and Marshak, D.W.: Synaptic inputs to parasol ganglion cells in the macaque retina. *Soc. Neurosci. Abstr.* 27, program no. 397.3, 2001.
49. Vidal, L.L. M., Vidal, K.S. M., Costa, J.B. G., Andrade, A.C. F., Costa, J.A., Saraiva, J.C. P., Marshak, D.W. and Yamada, E.S.: Antibodies to CaBP D-28K label DB3 diffuse cone bipolar cells in the human retina. *Invest. Ophthalmol. Vis. Sci* 43, program no. 738, 2002.
50. Firth, S.I. and Marshak, D.W.: Cholecystokinin immunoreactive processes in the rat retina. *Invest. Ophthalmol. Vis. Sci* 43, program no. 2763, 2002.
51. Yamada, E.S. and Marshak, D.W.: Wide-field ganglion cell types in the macaque retina. *Invest. Ophthalmol. Vis. Sci* 43, program no. 2776, 2002.

52. Firth, S.I., Massey, S.C., Li, W. and Marshak, D.W.: AMPA rather than kainate receptors mediate acetylcholine release from rabbit retina. *Soc. Neurosci. Abstr.* 28, program no. 165.8, 2002.
53. Denning, K.S., Marshak, D.W. and Kenyon G.T.: A high-frequency resonance in the responses of retinal ganglion cells to drifting sinusoidal gratings: a computer model. *Soc. Neurosci. Abstr.* 28, program no. 556.3, 2002.
54. Yuen, A.K., Travis, B.J., Marshak, D.W., Moses, J. and Kenyon, G.T.: Synchronous oscillations between color-selective ganglion cells encode chromatic information in a model retina. *Soc. Neurosci. Abstr.* 28, program no. 556.16, 2002.
55. Xiao, J., Yen, J., Steffen, M. Cai, Y., Baxter, D., Feigenspan, A. and Marshak, D.: Simulation of spontaneous activity in dopaminergic neurons of mouse retina *Invest. Ophthalmol. Vis. Sci.* 44, program no. 4146, 2003.
56. Gastinger, M.J., Yusupov, R.G., Glickman, R.D. and Marshak D.W.: Histamine modulates spontaneous and light evoked activity of rat ganglion cells in vitro. *Invest. Ophthalmol. Vis. Sci.* 44, program no 5175, 2003.
57. Peterson, B.B., Liao, H.-W., Dacey, D.M., Yau, K.-W., Gamlin, P.D., Robinson, F.R. and Marshak D.W.: Functional architecture of the photoreceptive ganglion cell in primate retina: morphology, mosaic organization and central targets of melanopsin immunostained cells *Invest. Ophthalmol. Vis. Sci.* 44, program no 5182, 2003.
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