Curriculum Vitae for **Matthew Neil Rasband** 3/17

Business Address
Department of Neuroscience
Baylor College of Medicine
One Baylor Plaza
Houston, TX 77030

E-mail: rasband@bcm.edu DOB: March 1, 1970

Positions:

Assistant Professor (2002 - 2007) University of Connecticut Health Center, Dept. of Neuroscience.
Associate Professor (2007-2012) Baylor College of Medicine, Depts. of Neuroscience (primary), and Molecular and Cellular Biology (secondary).
Professor (2012-present) Baylor College of Medicine, Depts. of Neuroscience (primary), and Molecular and Cellular Biology (secondary).
Vivian L. Smith Endowed Chair in Neuroscience (2013-present), Baylor College of Medicine.
Director, Neuroscience Graduate Program (2016-present), Baylor College of Medicine.

Education and Training:

Post-doctoral fellow (1999-2002) SUNY, Stony Brook (Advisor: Dr. James Trimmer).
PhD University of Rochester (1999). Major: biophysics (Advisor: Dr. Peter Shrager).
MS University of Rochester (1996). Major: biophysics.
BS University Honors, Brigham Young University (1994). Major: physics; Minor: math

Awards and Honors:

Michael E. DeBakey Excellence in Research Award (2013)
Javits Neuroscience Investigator Award, NINDS (2012-2019)
Department of Neuroscience Outstanding Educator Award (2011, 2015)
Harry Weaver Neuroscience Scholar of the National Multiple Sclerosis Society (2006-2011)
International Society for Neurochemistry Young Scientist Lectureship Award (2005)
Recipient of the Jordi-Folch Pi young investigator award, American Society for Neurochemistry (2005)
Wadsworth Foundation Young Investigator (2002-2005)
Wallace O. Fenn award for best dissertation in the School of Medicine, University of Rochester (1998-99)
George V. Metzger award for best dissertation in the Biophysics Department, University of Rochester (1998-99)
Winner of the University of Rochester Neuroscience Bartlett prize (1997, 1998)

Professional Societies:

Society for Neuroscience, American Society for Neurochemistry, International Society for Neurochemistry, American Association for the Advancement of Science

Grants:

Current:

- National Institutes of Health, NIH R21 NS093145; "Developing novel therapeutic approaches for white matter injury in the neonatal brain." (7/15/2016-6/30/2018). Role: Co-PI.
- National Institutes of Health, NIH R37 NS044916-16; "Neuroglial interactions at the node of Ranvier." (9/1/2002-8/31/2019). Role: PI.
- National Institutes of Health, NIH R01 NS069688-07; "Mechanisms of CNS node of Ranvier

formation." (5/1/2010-4/30/2020). Role: PI.
- National Institutes of Health, NIH T32GM008507-22, "Graduate training in neuroscience." (7/1/2015-6/30/2020). Role: PI.
- US-Israel Binational Science Foundation, "Formation and maintenance of nodes of Ranvier." (7/1/2016-6/30/2020). Role: Co-PI. (Funds only to support travel.)
- Adelson Medical Research Foundation, "The functional organization of axons." (10/1/14-9/30/2017). Role PI.

Completed:
- National Multiple Sclerosis Society, "Spectrins as regulators of CNS myelination in health and disease." (7/30/2016-9/30/2020). Role: PI.
- Department of Defense, DOD W81XWH-13-1-0265, "The Role of Spectrins in Neurodegeneration and Relevance to MS." (9/1/13-8/31/2016). Role: PI.
- US-Israel Binational Science Foundation, "Molecular organization of myelinated axons." (1/10/2010-9/30/2015). Role: Co-PI. (Funds only to support travel.)
- Department of Defense, "Mission Connect mild TBI Research Consortium". (8/1/2008-7/31/2013). Role: PI.
- Mission Connect, "Spectrins as regulators of CNS myelination in health and disease." (4/1/2011-3/31/2012). Role: PI.
- National Multiple Sclerosis Society, "Mechanisms of neuron-glia interaction and regulation of axon function." (8/1/2006-12/31/2011). Harry Weaver Neuroscience Scholar Award. Role: PI.
- Hankamer Foundation, "Disruption of ion channel clustering and axon integrity in myelinated axons following brain injury and disease." (5/1/2008-4/30/2009). Role: PI.
- National Multiple Sclerosis Society, "The role of cytoskeletal proteins in paranodal axon-glia interactions." (8/1/2006-7/31/2009). Postdoctoral Fellowship for Dr. Yasuhiro Ogawa, a postdoctoral fellow in my laboratory. Role: Mentor.
- Guillain-Barre Syndrome Foundation International, "The role of Schwann Cell Microvilli at Nodes of Ranvier and in Guillain-Barre Syndrome." (8/1/2005-7/31/2006). Role: PI.
- Patterson Trust, "Molecular determinants of ion channel clustering." (2/1/2005-8/31/2006). Role: PI.
- Wadsworth Foundation Young Investigator Award; "Neuroglial interactions at the node of Ranvier." (5/1/2002-5/1/2005). Role: PI.
- National Institutes of Health, National Research Service Award (NRSA), F32 NS10906; 3 year postdoctoral fellowship (7/1/99-6/30/02). Role: PI.
- Spinal Cord Research Foundation, Paralyzed Veterans Association. Grant 2040, "K^+ Channel Clustering in Myelinated Nerve Fibers, " (7/1/99-6/30/01). Role: PI.

Teaching

(Baylor College of Medicine)

Brain Cell Biology (2014-present; course director).
Electrical signaling (2014-present).
Neuroscience Lab I (2007-present).
Developmental Neuroscience (2008-present).
Neuroanatomy and Developmental Neurobiology (2007; course director 2008-2014).
Neurobiology of Disease (2008 - present).
Block 5, Nervous system (Medical School Lectures, 2009 – present).
Current topics in developmental biology (Course director, 2009-2013).

(University of Connecticut Health Center)

MEDS 321	Logic of Modern Biology (2006, 2007).
MEDS 341	Excitable Membranes (2005-2007).
MEDS 372	Cell and Molecular Neuroscience (2003-2007).
MEDS 375	Neuroscience, Current Research Topics (2002-2007).
MEDS 376	Developmental Neurobiology (2002-2007).

MEDS 419	Classic Papers in Neuroscience (2003-2007).
MEDS 497	Neuroscience Journal Club, Course Director (2003-2005).
OS1	Organ Systems 1 (2003-2007).
MDDP	Medical/Dental preparatory program (2006)

PhD Thesis Advisor: Lindsay Teliska: 2017-present.
Brian Lim: 2015-present.
Sharon Stevens: 2015-present.
Cheng-Hsin Liu: 2015-present.
Chih-Chuan Wang: 2014-present.
Yumei Huang: 2012-present.
Alec Marin: 2012-2016: postdoctoral fellow with Dr. Tom Carmichael at UCLA.
Dan Zollinger: 2011-2015; scientist, NanoString Technologies.
Szu Yu (Tammy) Ho: 2009-2015; postdoctoral fellow with Dr. Clifford Wolf at Harvard Medical School.
Kae-Jiun Chang: 2009-2014; postdoctoral fellow with Dr. Jonah Chan at UCSF.
Kelli Baalmann: June 2009-2014; currently a high school science teacher in Houston, TX.
Shelly Buffington: May 2008-2012; postdoctoral fellow with Dr. Mauro Costa-Mattioli at Baylor College of Medicine.
Dori Schafer: 2005-2008; Assistant professor at the University of Massachussetts medical school.
Kristian Hedstrom: 2003-2007; Chief Scientific Officer at the Adelson Medical Research Foundation.
Yang Yang: 2002-2006; private practice at Ophthalmic Consultants of Boston.

Postdoctoral Advisor: Abhijeet Joshi, PhD: September 2016 –present.
Matthias Koenning, PhD: December 2015-present.
Tomohiro Torii, PhD: November 2014-present.
Hamdan Hamdan, PhD: October 2012-present.
Takeshi Yoshimura, PhD: October 2012-present.
Chuansheng Zhang, PhD: May 2008-present.
Smita Jha, PhD: July 2008- April 2015.
Elizabeth Normand, PhD: October 2013-October 2014. Clinical Genetics training program at Baylor College of Medicine.
Keiichiro Susuki, MD/PhD: September 2005-June 2014. Assistant Professor Wright State University School of Medicine.
Mauricio Galiano, PhD: November 2008- November 12. Assistant Professor at University of Cordoba, Argentina.
Michael Grider, PhD: October 2010- August 2013; Assistant Professor at High Point University, North Carolina.
Yasuhiro Ogawa, PhD: March 2005-August 2008; Assistant Professor at Meiji Pharmaceutical University in Tokyo, Japan.

PhD (and MD/PhD) Candidate *Rotation students:*
Melanie Sweeney (Jan 2017-March 2017)
Colleen Brady (Jan 2017-March 2017)
Cameron Smith (October 2016-December 2016)
Lindsay Teliska (August 2016-October 2016)
Jenna Dicardo (June 2016-August 2016)
Ying Yao (October 2015-December 2015)

Nicholas Propson (January 2015-March 2015)
Joshua Ortiz, (January 2014-February 2014)
Yung-Hsin Huang, (October 2013-December 2013)
Lexi Crommet, (September 2013-December 2013)
Chi-Chun Hsu, (January 2013-February 2013)
Amy Pohodich, (August 2012 – December 2012)
Sena Ozsecker, (January 2012-February 2012)
Dillon Baete, (January 2012-February 2012)
Antonia Dimaio, (October 2011-December 2011)
Lucy Liu, (August 2011 – October 2011)
Baoyen Tran, (January 2011 – March 2011)
Hsiang-Chih (Sean) Lu, (October 2010-December 2010)
Tiffany Kinney, (January 2010 –April 2010)
Michael Yetmann, (August 2009-December 2009)
Heather Born, (January 2009 – March 2009)
Kara Marshall, (March 2008-May 2008)
Chia Ling Chang, (January 2008-March 2008)
Brandon Schwechter, (September 2007-December 2007)
Jia Xie, (January 2007-May 2007)
Beata Winnicka, (January 2004-June 2004)
Robert Claycomb, (June 2003-August 2003)
Yuanzheng Gao, (June 2002-August 2002)

SMART-PREP mentor:
Marlesa Godoy, Neuroscience (2011-2013)

Summer SMART student mentor:
Tyler Bahr (2016)
Broderick Sutton (2015)
Nathan Law (2012)

Member, thesis advisory committee:
Tyler Haeberle, PhD Candidate, Baylor College of Medicine (2017-present)
Mentor Dr. Francois St-Pierre.
Uday Gurnani, Neuroscience PhD Candidate, Baylor College of Medicine (2017-present)
Mentor Dr. Jeff Noebels.
Lauren Miterko, Developmental Biology PhD Candidate, Baylor College of Medicine (2017-present) Mentor Dr. Roy Sillitoe.
Jay Patel, Neuroscience PhD Candidate, Baylor College of Medicine (2016-present);
Mentor Dr. Ben Arenkiel.
Caiwei Guo, Neuroscience PhD Candidate, Baylor College of Medicine (2016-present);
mentor Dr. Josh Shulman.
Tong-chao Li, Developmental Biology PhD Candidate, Baylor College of Medicine (2014-2016); mentor Drs. Andy Groves and Hugo Bellen.
Asante Hatcher, Neuroscience PhD Candidate, Baylor College of Medicine (2015-present);
mentor Dr. Jeff Noebels.
Angel Lopez, Molecular and Human Genetics PhD Candidate, Baylor College of Medicine (2015-present); mentor Dr. Ed Cooper.
Hunter Allen, Neuroscience PhD Candidate, Baylor College of Medicine (2015); mentor Dr. Hui-chen Lu.
Burak Tepe, Developmental Biology PhD Candidate, Baylor College of Medicine (2014-present); mentor Dr. Ben Arenkiel.
Amy Pohodich, Neuroscience PhD Candidate, Baylor College of Medicine (2014-present);
mentor Dr. Huda Zoghbi.

Trace Stay, Neuroscience PhD Candidate, Baylor College of Medicine (2014-present); mentors Dr. Roy Sillitoe and Dora Angelaki.
Yen-Kuei Tu, Biochemistry PhD Candidate, Baylor College of Medicine (2013-present); mentor Dr. Kimberley Tolias.
Jennifer Johnson, Neuroscience PhD Candidate, Baylor College of Medicine (2013-present); mentor Dr. Mauro Costa-Mattioli.
Xiangling Meng, Neuroscience PhD Candidate, Baylor College of Medicine (2013-present); mentor Dr. Huda Zoghbi.
Dylan Laug, Developmental Biology PhD Candidate, Baylor College of Medicine (2013-present): mentor Dr. Ben Deneen.
Lena Ngyen, Neuroscience PhD Candidate, Baylor College of Medicine (2013-2016); mentor Dr. Anne Anderson.
Lucy Liu, Neuroscience PhD Candidate, Baylor College of Medicine (2012-present); mentor Dr. Hugo Bellen.
Mussie Araya, Molecular Physiology and Biophysics PhD Candidate, Baylor College of Medicine (2012- present); mentor Dr. Bill Brownell.
Jinxuan Cheng, Biochemistry and Molecular Biology PhD Candidate, Baylor College of Medicine (2012 – present); mentor Dr. Kimberley Tolias.
Baoyen Tran, Neuroscience PhD Candidate, Baylor College of Medicine (2012-present); mentor Dr. Ed Cooper.
Yalda Moayedi-Esfahani, Neuroscience PhD Candidate, Baylor College of Medicine (2011-2013); mentor Dr. Graeme Mardon.
Jacob Berry, Developmental Biology PhD Candidate, Baylor College of Medicine (2011-2012); mentor Dr. Ron Davis.
Sean Lu, Developmental Biology PhD Candidate, Baylor College of Medicine (2011-2016); mentor Dr. Huda Zoghbi.
Lesley Chaboub, Developmental Biology PhD Candidate, Baylor College of Medicine (2011-present); mentor Dr. Ben Deneen.
Teng-Wei Huang, Developmental Biology PhD Candidate, Baylor College of Medicine (2011-2015); mentor Dr. Jeff Neul.
Laura Heckman, Molecular and Human Genetics PhD Candidate, Baylor College of Medicine (2011-2014); mentor Dr. Huda Zoghbi.
Hong Lian, Molecular and Human Genetics PhD Candidate, Baylor College of Medicine (2011-2014); mentor Dr. Hui Zheng.
Tiantian Cai, Developmental Biology PhD Candidate, Baylor College of Medicine (2010 – 2014); mentor Dr. Andy Groves.
Claudia Gonzaga, Molecular and Human Genetics PhD Candidate, Baylor College of Medicine (2010-2014); mentor Dr. Jim Lupski.
Wei Huang, Neuroscience MD/PhD Candidate, Baylor College of Medicine (2010 – 2014); mentor Dr. Mauro Costa-Mattioli.
Scott Wellnitz, Neuroscience PhD Candidate, Baylor College of Medicine (2009 – 2010); mentor Dr. Ellen Lumpkin.
Pedro Olivetti, Neuroscience MD/PhD Candidate, Baylor College of Medicine (2009-2013); mentor Dr. Jeff Noebels.
Heather Born, Neuroscience PhD Candidate, Baylor College of Medicine (2009-2014); mentor Dr. Joanna Jankowsky.
Christopher McGraw, Developmental Biology PhD Candidate, Baylor College of Medicine (2009-2013); mentor Dr. Huda Zoghbi.
Jason Saliba, Molecular and Human Genetics PhD Candidate, Baylor College of Medicine (2009-2011); mentor Dr. Jim Lupski.
Kara Marshall, Neuroscience PhD Candidate, Baylor College of Medicine (2009-2010); mentor Dr. Ellen Lumpkin.
Bryce Daines, Molecular and Human Genetics PhD candidate, Baylor College of Medicine (2008 –2011); mentor Dr. Rui Chen.

Vinit Patil, PhD candidate, Baylor College of Medicine (2008-2015); mentor Dr. Anne Anderson.
Brittany Renshaw, Translational Biology and Molecular Medicine PhD candidate, Baylor College of Medicine (2008-2012); mentor Dr. Robia Pautler.
Anjana S. Narayanan, Biochemistry PhD candidate, Baylor College of Medicine (2008-2013); mentor Dr. Kim Tolias.
Kyongmi Um, Neuroscience PhD candidate, Baylor College of Medicine (2007-2012); mentor Dr. Kim Tolias.
Brian Nadin, Neuroscience PhD candidate, Baylor College of Medicine (2007-2009); mentor Dr. Paul Pfaffinger.
Lawrence Hsieh, Neuroscience PhD candidate, UCONN Health Center (2006-2007); mentor Dr. Eric Levine.
Zhou Han, Neuroscience PhD candidate, UCONN Health Center (2004-2007); mentor Dr. David Papermaster.
Jacqueline Sobota, Neuroscience DMD/PhD candidate, UCONN Health Center (2004-2007); mentor Dr. Richard Mains.
Jason Hinman, Biochemistry MD/PhD candidate, Boston University School of Medicine (2002-2005); mentor Dr. Carmela Abraham.
Crystal D'Sa, Neuroscience PhD candidate, UCONN Health Center (2002-2006); mentor Dr. Kent Morest.

Outside thesis reader and member of examination committee:
Ellen Wittmack, PhD candidate, Yale School of Medicine (2004); mentor Dr. Steve Waxman.

Service:

Journal Peer Reviewer:

Journal of Cell Biology, Science, Cell, Neuron, PLoS Genetics, PNAS, Nature Neuroscience, eLife, Journal of Neuroscience Research, PAIN, Journal of Neuroscience, Current Biology, Developmental Cell, Cell Reports, Scientific Reports, Nature Communications, Science Translational Medicine, Journal of Biological Chemistry, GLIA, Journal of Neurochemistry, Molecular and Cellular Neuroscience, Cellular and Molecular Neurobiology, Neurochemical Research, Journal of Comparative Neurology, Journal of Cellular Physiology, American Journal of Physiology – Cell Physiology, EMBO Journal, Developmental Biology, Experimental Neurology, Brain, Prostaglandins and Other Lipid Mediators, Journal of Physiology, Neuroscience Letters, Seminars in Cell and Developmental Biology, PLoS One, BMC Biology, Cerebral Cortex, Molecular and Cellular Proteomics, Frontiers in Cellular Neuroscience.

Associate Editor: Journal of Neuroscience (2013-present)
Review Editor: Frontiers in Molecular Neuroscience
Editorial Board: Journal of Neuroscience Research

Scientific Advisory Board: Neuromab (2010-present)

<u>Baylor College of Medicine</u>

Director, Neuroscience Graduate Program (2016-present).
Chair, Neuroscience Faculty Appointments and Promotions Committee (2015-present).
Member, Baylor College of Medicine Faculty Appointments and Promotions Committee (2015-present)
Member, Medical Scientist Training Program Faculty Operating Committee (2011-present)
Co-director Neuroscience Graduate Program (2013-2016).
Chair, Neuroscience program Admissions Committee (2010-2014).
Chair, Neuroscience Faculty Search Committee (2013-2014).
Member, Neuroscience Faculty Search Committee (2008, 2014).
Member, Baylor College of Medicine Faculty Committee On Awards (2009-present).

Member, Faculty Research and Fellowship Support Committee (2009-present).
Member, Initiative for maximizing student diversity steering committee (2008-2009).
Member, Jan and Dan Duncan Neurological Research Institute Neuropathologist faculty search committee (2009-2011).
Member, Neurological Research Institute faculty search committee (2011).

UCONN Health Center

Vice Chair, Graduate Program Committee (2005-2007).
Neuroscience Graduate Program Executive Committee (2002-2007).
Chair, 1st year Graduate Student Advisory Committee (2004-2007).
Member, Education Council (2006-2007).

Chair, Society for Neuroscience, Program Subcommittee on Neural Excitability, Synapses, and Glia (2015-2017).
Member, Society for Neuroscience Program Committee (2014-2017).
Chair, Program for Annual Meeting of the American Society for Neurochemistry (2012).
Member, American Society for Neurochemistry Council (2007-2011).
Member, Presidential Advisory Committee, American Society for Neurochemistry (2006).
Member, Steering committee for Gulf Coast Pain Consortium (2008-2009).
Member, International Society for Neurochemistry program committee (2008-2009).
Member, International Society for Neurochemistry Committee on Aid and Education in Neuroscience (2009-2012).
Member, International Society for Neurochemistry School Committee (2011- present).

NIH Study Section ad hoc Reviewer:

Member, Cellular and Molecular Biology of Glia (2011-2017).
Clinical Neuroimmunology and Brain Tumors [CNBT] (2004, 2006).
Developmental Biology Subcommittee [CHHD-C] (2004, 2005, 2006).
Hypersensitivity, Autoimmunity, and Immune-mediated Diseases [HAI] (2004).
Special emphasis panel [MDCN-C] (2005).
Neurological Sciences and Disorders A [NSD-A] (2006, 2007).
Cellular and molecular biology of Glia [CMBG] (2008, 2009).
Special emphasis panel [MDCN-G(02)] (2009).

Other:

Reviewer: Howard Hughes Medical Institute Research Training Fellowship for Medical Students Program (initial reviewer, 2009-2010).
Reviewer: National Multiple Sclerosis Society (member review committee A, 2006-2012).
Reviewer: Association Francaise contre les Myopathies (2006, 2007, 2010).
Reviewer: Alzheimer's and Related Diseases Research Award Fund (2006).
Reviewer: Wellcome Trust (2007-present).
Reviewer: Multiple Sclerosis Society of Canada (2009-present).
Reviewer: Israel Science Foundation (2010).
Reviewer: Agence Nationale de la Recherche (2011-present).
Reviewer: Fast Forward (2011).
Reviewer: Shriners Foundation (2013-present).

Papers (*indicates senior corresponding author)

1. V Amor, C Zhang, A Vainshtein, A Zhang, DR Zollinger, Y Eshed-Eisenbach, PJ Brophy, **MN Rasband***, and E Peles*. The paranodal cytoskeleton clusters Na+ channels at nodes of Ranvier. *eLife* 6:e21392 (2017).
2. T Yoshimura, SR Stevens, C Leterrier, MC Stankewich, and **MN Rasband***. Developmental changes in expression of βIV spectrin splice variants at axon initial segments and nodes of Ranvier. *Frontiers in Cellular Neuroscience,* 10:304 (2017).
3. K Chen, TS Ho, G Lin, KL Tan, **MN Rasband**, and HJ Bellen. Loss of Frataxin activates the iron/sphingolipid/PDK1/Mef2 pathway in mammals. *eLife* 5:e20732. (2016).
4. YM Huang and **MN Rasband***. Organization of the axon initial segment: actin like a fence. *Journal of Cell Biology,* 215:9-11 (2016).
5. MA Marin, S de Lima, HY Gilbert, RJ Giger, L Benowitz, and **MN Rasband***. Reassembly of excitable domains after CNS axon regeneration. *Journal of Neuroscience,* 36:9148-60 (2016).
6. K Chen, G Lin, NA Haelterman, TS Ho, T Li, Z Li, L Duraine, BH Graham, M Jaiswal, S Yamamoto, **MN Rasband**, and HJ Bellen. Loss of Frataxin induces iron toxicity, sphingolipid synthesis, and Pdk1/Mef2 activation, leading to neurodegeneration. *eLife,* 5:e16043 (2016).
7. C Zhang and **MN Rasband*.** Cytoskeletal control of axon domain assembly and function. *Current Opinion in Neurobiology,* 39:116-121 (2016).
8. KW Ko, **MN Rasband**, V Meseguer, RH Kramer, and NL Golding. Serotonin modulates spike probability in the axon initial segment through HCN channels. *Nature Neuroscience,* 19:826-34 (2016).
9. MA Marin, J Ziburkus, J Jankowsky, and **MN Rasband*.** Amyloid-β plaques disrupt axon initial segments. *Experimental Neurology,* 281:98-8 (2016).
10. K Susuki, Y Otani, **MN Rasband**. Submembranous Cytoskeletons stabilize nodes of Ranvier. *Experimental Neurology,* in press (2016).
11. **MN Rasband***. Glial contributions to neural function and disease. *Molecular and Cellular Proteomics,* 15:355-61 (2015).
12. DR Zollinger, K Baalman, and **MN Rasband***. The ins and outs of polarized axonal domains. *Annual Reviews in Cell and Developmental Biology,* 31:647-67 (2015)
13. DR Zollinger, KJ Chang, K Baalman, S Kim, and **MN Rasband*.** The polarity protein Pals1 regulates radial sorting of axons. *Journal of Neuroscience*, 35:10474-84 (2015).
14. **MN Rasband** and E Peles. The nodes of Ranvier: molecular assembly and maintenance. *Glia: Cold Spring Harbor Perspectives in Biology,* 221-236 (2015).
15. M Hirono, Y Ogawa, K Misono, DR Zollinger, JS Trimmer, **MN Rasband***, and H Misonou. BK channels localize to the paranodal junction and regulate action potentials in myelinated axons of cerebellar Purkinje cells. *Journal of Neuroscience,* 35:7082-94 (2015).
16. HK Lee, LS Chaboub, W Zhu, DR Zollinger, **MN Rasband**, SPJ Fancy , and B Deneen. Daam2-PIP5K is a novel regulatory pathway for Wnt signaling and therapeutic target for remyelination in the CNS. *Neuron,* 85:1227-43 (2015).
17. EA Normand and **MN Rasband*.** Subcellular patterning: axonal domains with specialized structure and function. *Developmental Cell,* 32:459-468 (2015).
18. K Baalman, MA Marin, TS Ho, M Godoy, L Cherian, C Robertson, and **MN Rasband***. Axon initial segment associated microglia. *Journal of Neuroscience*, 35:2283-2292 (2015).
19. SA Smith, AC Sturm, J Curran, CF Kline, SC Little, IM Bonilla, VP Long, M Makara, I Polina, LD Hughes, TR Webb, Z Wei, P Wright, N Voigt, D Bhakta, KG Spoonamore, C Zhang, R Weiss, PF Binkley, PM Janssen, A Kilic, RS Higgins, M Sun, J Ma, D

Dobrev, M Zhang, CA Carnes, M Vatta, **MN Rasband**, TJ Hund, PJ Mohler. Dysfunction in the βII spectrin-dependent cytoskeleton underlies human arrhythmia. *Circulation*, 131:695-708 (2015).

20. TS Ho, DR Zollinger, KJ Chang, M Xu, EC Cooper, MC Stankewich, V Bennett, and **MN Rasband***. A hierarchy of ankyrin/spectrin complexes clusters sodium channels at nodes of Ranvier. *Nature Neuroscience,* 17:1664-72 (2014).
21. KJ Chang, DR Zollinger, K Susuki, DL Sherman, MA Makara, PJ Brophy, EC Cooper, V Bennett, PJ Mohler and **MN Rasband***. Glial ankyrins facilitate paranodal axoglial junction assembly. *Nature Neuroscience,* 17:1673-81 (2014).
22. R Frischknecht, KJ Chang, **MN Rasband**, C Seidenbecher. Neural ECM molecules in axonal and synaptic homeostatic plasticity. In Alexander Dityatev, Bernhard Wehrle-Haller, Asla Pitkänen, editors: Brain Extracellular Matrix in Health and Disease. *Progress in Brain Research,* 214: 81-100 (2014).
23. T Yoshimura and **MN Rasband*.** Axon initial segments: diverse and dynamic neuronal compartments. *Current Opinion in Neurobiology,* 27C:96-102 (2014).
24. SH Shahmordian, MR Galiano, C Wu, S Chen, **MN Rasband**, WC Mobley, and W Chiu. Preparation of primary neurons for visualizing neuritis in a frozen-hydrated state using cryo-electron tomography. *Journal of Visual Experiments* (84), e50783, doi:10.3791/50783 (2014).
25. DR Lesniak, KL Marshall, SA Wellnitz, BA Jenkins, Y Baba, **MN Rasband**, GJ Gerling, EA Lumpkin. Computation identifies structural features that govern neuronal firing properties in slowly adapting touch receptors. *eLife* 2014;3:e01488 (2014).
26. C Zhang, K Susuki, DR Zollinger, JL Dupree, and **MN Rasband***. Membrane domain organization of myelinated axons requires βII spectrin. *Journal of Cell Biology*, 203:437-43 (2013).
27. H Kaphzan, SA Buffington, AB Ramaraj, JB Lingrel, **MN Rasband**, E Santini, and E Klann. Genetic reduction of the α1 subunit of the Na/K-ATPase corrects multiple hippocampal phenotypes in Angelman Syndrome. *Cell Reports* , 4:405-12 (2013).
28. SI Choi, SS Gao, A Xia, R Wang, FT Salles, PD Raphael, H Abaya, J Wachtel, J Baek, D Jacobs, **MN Rasband**, and JS Oghalai. Mechanisms of hearing loss after blast injury to the ear. *PLOS One* 8(7):e67618 (2013).
29. K Susuki, KJ Chang, DR Zollinger, Y Liu, Y Ogawa, Y Eshed-Eisenbach, MT Dours-Zimmermann, J Oses-Prieto, AL Burlingame, C Seidenbecher, DR Zimmermann, T Oohashi, E Peles, and **MN Rasband***. Three mechanisms assemble central nervous system nodes of Ranvier. *Neuron*, 78:469-482 (2013).
30. SA Buffington and **MN Rasband*.** Na+ channel-dependent recruitment of Navβ4 to axon initial segments and nodes of Ranvier. *Journal of Neuroscience*, 33:6191-202 (2013).
31. JD Hinman, **MN Rasband**, ST Carmichael. Remodeling of the axon initial segment after focal cortical and white matter strok. *Stroke*, 44:182-9 (2012).
32. JK Ng, J Malotka, N Kawakami, T Derfuss, M Khademi, T Olsson, C Linington, M Okada, B Tackenburg, H Pruss, JM Schwab, L Harms, H Harms, C Sommer, **MN Rasband**, Y Eshed-Eisenbach, E Peles, R Hohlfeld, N Yuki, K Dornmair, and E Meinl. Neurofascin as a target for autoantibodies in peripheral neuropathies. *Neurology,* 79:2241-2248 (2012).
33. KL Baalman, RJ Cotton, SN Rasband, and **MN Rasband*.** Blast wave exposure impairs memory and decreases axon initial segment length. *Journal of Neurotrauma*, 30:741-751 (2012).
34. JKM Ng, J Malotka, N Kawakami, T Derfuss, M Khademi, T Olsson, C Linington, M Odaka, B Tackenberg, H Prüss, JM Schwab, L Harms, H Harms, C Sommer, **MN Rasband**, Y Eshed-Eisenbach, E Peles, R Hohlfeld, N Yuki, K Dornmair, E Meinl.

Neurofascin as a target for autoantibodies in peripheral neuropathies. *Neurology*, 79:2241-8 (2012).
35. MR Galiano, S Jha, TS Ho, C Zhang, Y Ogawa, KJ Chang, MC Stankewich, PJ Mohler, and **MN Rasband***. A distal axonal cytoskeleton forms an intra-axonal boundary that controls axon initial segment assembly. *Cell* 149:1125-1139 (2012).
36. A Gasser, TS Ho, X Cheng, KJ Chang, S Waxman, **MN Rasband**, and S Dib-Hajj. An ankyrinG-binding motif is necessary and sufficient for targeting Nav1.6 sodium channels to axon initial segments and nodes of Ranvier *Journal of Neuroscience* 32:7232-43 (2012).
37. SA Buffington, JM Sobotzik, C Schultz, and **MN Rasband*.** IkBa is not required for axon initial segment assembly. *Molecular and Cellular Neuroscience* 50:1-9 (2012).
38. K Susuki, N Yuki, DP Schafer, K Hirata, G Zhang, K Funakoshi, and **MN Rasband***. Dysfunction of nodes of Ranvier: a mechanism for anti-ganglioside antibody-mediated neuropathies. *Experimental Neurology* 233:534-42 (2012).
39. H Kaphzan, S Buffington, JI Jung, **MN Rasband**, and E Klann. Alterations in intrinsic membrane properties and the axon initial segment in a mouse model of Angelman syndrome. *Journal of Neuroscience* 31:17637-48 (2011).
40. S Jha and **MN Rasband***. Di-rectifying Tau. *EMBO Journal* 30:4699-700 (2011).
41. MS Grubb, Y Shu, H Kuba, **MN Rasband**, VC Wimmer, and KJ Bender. Short- and long-term plasticity at the axon initial segment. *Journal of Neuroscience* 31:16049-55 (2011).
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43. K Susuki, AR Raphael, Y Ogawa, MC Stankewich, E Peles, WS Talbot, and **MN Rasband*.** Schwann cell spectrins modulate peripheral myelination. *Proceedings of the National Academy of Sciences, USA* 108:8009-14 (2011).
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45. **MN Rasband*.** Composition, assembly, and maintenance of excitable membrane domains in myelinated axons. *Seminars in Cell and Developmental Biology* 22:178-84 (2010).
46. KJ Chang, K Susuki, MT Dours-Zimmermann, DR Zimmermann, and **MN Rasband*.** Oligodendrocyte myelin glycoprotein (OMgp) does not influence node of Ranvier structure or assembly. *Journal of Neuroscience* 30:14476-81 (2010).
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86. DP Schafer, R Bansal, KL Hedstrom, SE Pfeiffer, and **MN Rasband***. Does paranode formation and maintenance require partitioning of Neurofascin 155 into lipid rafts? *Journal of Neuroscience,* 24:3176-3185 (2004).
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88. **MN Rasband***. It's 'juxta' potassium channel! *Journal of Neuroscience Research,* 76:749-757 (2004).
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maintenance but not initiation of Nav1.6 sodium channel clustering in CNS optic nerve axons. *GLIA,* 44:173-182 (2003).

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103. P Shrager, AW Custer, K Kazarinova, **MN Rasband**, and D Mattson. Nerve conduction block by nitric oxide that is mediated by the axonal environment. *Journal of Neurophysiology,* 79:529-536 (1998).

Book Chapters (*indicates corresponding author)

1. **MN Rasband** and WB Macklin. Myelin Structure and Biochemistry. In "Basic Neurochemistry:principles of molecular, cellular, and medical neurobiology." Editor Scott T. Brady. pp. 180-199. Elsevier, 8th edition. (2012).
2. **WB Macklin** and MN Rasband. Fromation and maintenance of myelin. In "Basic Neurochemistry:principles of molecular, cellular, and medical neurobiology." Editor Scott T. Brady. pp. 569-581. Elsevier, 8th edition. (2012).
3. **MN Rasband** and JS Trimmer. Action potentials: ion channel localization in axons. In "New Encyclopedia of Neuroscience." Editor, Larry R. Squire. pp 229-235 (2009).
4. **MN Rasband*** and P Shrager. Demyelination. In "Encyclopedic Reference of Pain." Editors, RF Schmidt and WD Willis. Springer-Verlag. Vol I: 535-537 (2007).
5. P Shrager and **MN Rasband**. Trafficking and localization of ion channels. In "Encyclopedic Reference of Pain." Editors, RF Schmidt and WD Willis. Springer-Verlag. Vol I: 2500-2501 (2007).
6. **MN Rasband***. Potassium channel organization of myelinated and demyelinated axons. In "Multiple Sclerosis as a Neuronal Disease." (Waxman SG, ed) pp 57-67. Academic Press. (2004).

7. **MN Rasband***. Myelin and action potential propagation. Nature Encyclopedia of Life Sciences, Nature Publishing Group (2001).

Invited Talks

2017
- Stark Neurosciences Research Institute, Indiana University-Purdue University Indianapolis (2/28/17)
- Gill Center for Biomolecular Science, Indiana University (2/27/17).
- Vollum Institute, Oregon Health Sciences University (4/27/2017).
- Cell Biology of the Neuron: Polarity, Plasticity and Regeneration, Heraklion, Crete (5/9/2017).
- ISN advanced school of Neurochemistry. Paris, France (8/16/2017).
- Shanghai Tech University, Shanghai, China (9/15/2017).
- Academica Sinica, Taipei, Taiwan (10/18/2017).
- International Symposium on Neural Regeneration (11/29/2017).
- Dept. of Neurobiology, SUNY Stony Brook, NY (12/14/2017).

2016
- Case Western Reserve University, Cleveland, Dept. of Neuroscience (10/13/2016).
- 6th Axon Degeneration Meeting at Jackson Labs, Bar Harbor, Maine (9/25-28/2016).
- University of Rochester, Dept. of Neurobiology (9/29/16).
- Burke Research Institute, Mamaronek, NY (9/20/16).
- University of Missouri Kansas City, Dept. of Pharmacology (4/28/2016).
- University of California Riverside, 9th annual symposium on glial-neuronal interactions, keynote speaker, Riverside, CA (1/8/2016).

2015
- University of Texas Houston Medical School, Integrated Biology Program, Houston, TX (11/30/2015)
- University of Massachusetts Medical School, Dept. Of Neurobiology, Worcester, MA. (10/15/2015)
- University of Chile, Santiago, Chile (10/6/2015)
- National Institutes of Health, Bethesda, NIH. (9/21/2015)
- University of Texas, Southwestern, Dept. Of Physiology, Dallas, TX (9/11/2015)
- International Society for Neurochemistry Myelin Satellite meeting, Cairns, Australia (9/24/2015)
- Richard P. Bunge Lecture, Peripheral Nerve Society meeting, Quebec City, CA (6/29/2015)
- Grand Rounds, Pediatric Neurology, Baylor College of Medicine, Houston, TX (5/20/2015)
- University of Virginia, Charlottesville, VA (5/7/2015)
- International Neuroscience Winter Conference, Solden, Austria (4/10/2015)
- Gladstone Institute, University of California San Francisco, San Francisco, CA (3/26/2015)
- Weizmann Institute of Science, Rehovot, Israel (2/2/2014)

2014
- University of Edinburgh, Edinburgh, Scotland (2/4/2014)
- King's College London, London, England (2/6/2014)
- Netherlands Institute for Neuroscience, Amsterdam, Netherlands (5/21/2014)
- Endo/Neuro/Psycho Conference, Lunteren, Netherlands (5/23/2014)
- Training course in PNS development, Lecce, Italy (7/3/2014)
- International symposium on Mass Spectrometry, San Franscisco, CA (8/19/2014)
- Johns Hopkins University, Baltimore, MD (9/18/2014)
- University of California San Francisco, San Francisco, CA (10/16/2014)
- Harvard Medical School, Boston, MA (10/27/2014)

2013
- University of Texas Austin, Department of Neuroscience, Austin, TX (1/14/2013)
- Temple University, Philadelphia, PA (2/27/2013)
- Keystone Meeting on Axon Biology, Lake Tahoe, CA (3/11/2013)
- International Society for Neurochemistry Advanced School, Cancun Mexico (4/17/2013)
- Leibniz Institute for Neurobiology, Magdeburg, Germany (7/2/2013)
- Euroglia, Berlin, Germany (7/4/2013)
- University of Miami, Miami Project to Cure Paralysis, Miam, FL (10/2/2013)
- Brigham Young University, Program in Neurobiology, Provo, UT (10/17/2013)

2012
- Ohio State University, Department of Neuroscience, Columbus, OH (1/30/2012).
- Cajal Institute, Madrid Spain (10/29/2012)
- Centro de Biologia Molecular Severo Ochoa, Madrid Spain (3/30/2012)
- Myelin Gordon Research Conference, Il Ciocco, Italy (5/3/2012).
- FENS 2012, Barcelona Spain (7/16/2012).
- Cold Spring Harbor Meeting: Glia in Health and Disease. Cold Spring Harbor, NY (7/19/2012)
- University of Utah, Snowbird Symposium. (11/2/2012)
- Bevill Conference on Glial Biology, University of Alabama, Birmingham (11/5/2012)
- Washington University in St. Louis, Department of Developmental Biology (12/3/2012)

2011
- Baylor College of Medicine, Department of Physiology and Molecular Biophysics, Houston, TX (1/11/2011).
- University of Connecticut, Department of Neurobiology and Physiology, Storrs, CT (2/16/2011).
- UCLA, Department of Neurology, Los Angeles, CA (6/8/2011).
- ISN Satellite Myelin meeting, Crete (8/25/2011).
- Oregon Health Sciences University, Portland, OR (9/13/2011).
- University of Alabama, Birmingham, Center for Glial Biology (9/29/2011)
- Colorado State University, Department of Biochemistry and Molecular Biology, Fort Collins, CO (10/19/2011).
- University of Colorado, Denver CO (10/20/2011).
- Society For Neuroscience, symposium on axon initial segment plasticity, Washington, DC (11/15/2011)
- Brain and Spinal Cord Institute, Salpetriere Hospital, Paris, France (12/5/2011)
- Interdisciplinary center for neurosciences, Heidelberg, Germany (12/7/2011)

2010
- American Epilepsy Society annual meeting, San Antonio, TX (12/5/2010)
- Federal University of Rio de Janiero, Frontiers in Neuroscience, Buzios, Brazil (12/2/2010)
- Huffington Center on Aging, Houston, TX (9/29/2010)
- University of Houston, Houston, TX (9/9/2010)
- Weizmann Institute of Science, Rehovot, Israel (6/2/2010).
- Ion Channel Symposium, University of Copenhagen, Copenhagen, Denmark (5/27/2010).
- Galveston Brain Injury Conference, Galveston, TX (5/6/2010).
- University of California, Irvine, CA (4/28/2010).

2009
- American Society for Cell Biology annual meeting, San Diego, CA (12/8/09).
- Department of Neurology, Baylor College of Medicine (10/26/09).
- Wellcome Trust/Cold Spring Harbor Conference on Integrative Approaches to Brain Complexity, Cambridge, UK (10/10/09).
- Euroglia, Paris, France (9/11/09).

- University of the Mediterranean, Marseille, France (9/14/09).
- University of Pennsylvania, Mahoney Neuroscience Institute (9/30/09).
- Military Health Research Forum, Kansas City (9/3/09).
- International Society for Neurochemistry meeting, Busan, Korea (8/26/09).
- International Neurochemistry School, GyeongJu, Korea (8/21/09).
- FASEB Ion Channel Conference, Snowmass, CO (6/8/09).
- American Society for Neurochemistry meeting, Charleston, SC (3/7/09).
- Neuroscience Institute at Stanford, Stanford School of Medicine (2/26/2009).
- Division of Anesthesiology and Critical Care, MD Anderson Cancer (2/12/2009).
- Winter Brain Research Conference (1/29/2009).

2008
- Killam lecture, Montreal Neurological Institute, Montreal, Canada (12/9/2008).
- Society for Neuroscience, Symposium, Washington DC (11/19/2008).
- Tykeson research conference, National Multiple Sclerosis Society (11/6/2008).
- SUNY Stony Brook, Stony Brook, NY (5/12/2008).
- Myelin Gordon Research Conference, Il Ciocco, Italy (5/5/2008).

2007
- University of Illinois at Chicago (2007).
- Yale University, Department of Pharmacology (2007).
- Winter Brain Research conference (2007).
- Euroglia, London, England (2007).
- Biogen-Idec, Boston (2007)
- Trinity College, Hartford, CT (2007).
- University of California at Davis, Davis, CA (2007).
- University of North Carolina at Chapel Hill, Department of Cell and Mol Physiology (2007).
- Albert Einstein College of Medicine, New York, New York (2007).

2006
- Fogarty-IBRO School on Neurons and Glial Cells, Buenos Aires, Argentina (2006).
- Baylor College of Medicine, Houston, TX (2006).
- American Society for Neurochemistry, Portland, OR (2006).

2005
- Virginia Commonwealth University School of Medicine (2005).
- International Society for Neurochemistry and the European Society for Neurochemistry, Innsbruck, Austria (2005).
- Yale University, Department of Pathology (2005).
- Rutgers University, Cell Biology and Neuroscience (2005).
- Winter Brain Research Conference (2005).

2004
- Myelin Gordon Research Conference, Il Ciocco, Italy (2004).
- Joint American Pain Society and Canadian Pain Society Annual Meeting, Vancouver, British Columbia, Canada (2004).
- Brigham Young University, Department of Physiology and Developmental Biology (2004).

2003
- Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany (2003).
- World Congress of Neuroscience, International Brain Research Organization, Prague, Czech Republic (2003).
- Yale University, Neuroscience Research Center (2003)
- University of Connecticut, Storrs, Department of Physiology and Neurobiology (2003).

2002
- Wayne State University, Center for Molecular Medicine and Genetics (2002).
- American Society for Neurochemistry, Palm Beach, Florida (2002).
- "Distinct K+ channels on pain-sensing neurons," Spring Pain, Cayman Islands (2002).

2001
- UCONN Health Center, Neuroscience Retreat (2001).
- Boston University School of Medicine, Department of Biochemistry (2001).
- International Society for Neurochemistry and the American Society for Neurochemistry. Buenos Aires, Argentina (2001).
- UCONN Health Center, Department of Neuroscience (2001)
- National Institute of Physiological Sciences, Okazaki, Japan (2001).
- Brigham Young University, Neuroscience Institute (2000, 2001).

1998-2000
- Wyeth-Ayerst Research, Neuroscience Division, Princeton, NJ (2000).
- International Society for Neurochemistry and the European Society for Neurochemistry. Berlin, Germany (1999).
- Cephalon, Inc. (1998).