

BIOGRAPHICAL SKETCH

| NAME Bryan William Jones | | POSITION TITLE Research Assistant Professor | |
|---|----------------------------------|--|--------------------|
| EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i> | | | |
| INSTITUTION AND LOCATION | DEGREE <i>(if applicable)</i> | YEAR(s) | FIELD OF STUDY |
| University of Utah | BS | 1996 | Biology, Chemistry |
| University of Utah | Ph.D. | 2003 | Neurophysiology |
| Huntsman Cancer Institute | Post-Doctoral | 2003-2004 | Cell biology |
| Moran Eye Center | Post-Doctoral | 2004-2005 | Ophthalmology |
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A. Positions

Employment

1997-2003 Graduate Student University of Utah Department of Physiology

2003-2004 Post Doctoral Fellow, Huntsman Cancer Institute

2004-2005 Post Doctoral Fellow, Moran Eye Center

2006- Research Assistant Professor, Moran Eye Center

Experience

Awards:

National Eye Institute (NEI) Travel Fellowship Grant, 2002.

Young Investigator Award RD2004.

Research Prevent Blindness Career Development Award. 2006.

Moran Eye Center Tiger Team Translational Medicine Award. 2009.

USTAR Technology commercialization grant. 2010.

Edward N. and Della L. Thome Memorial Grant Foundation. 2010.

Winner Scientific Visualization Challenge, NSF/Science 2012.

Winner Scientific Visualization Challenge, FASEB 2013

Committees:

Chair: Student Tenure Review Committee Moran Eye Center 2001-2004

Member: Faculty review committee. Dept. of Bioinformatics University of Utah School of Medicine 2001-2002.

Member: Medical Student Application Committee. 2004-2014.

Reviewer: Vision Research, Experimental Neurology, Journal of Comparative Neurology, Experimental Eye Research

Editor/Webmaster: Webvision <http://webvision.med.utah.edu/>

Teaching:

Physiology Lab: Epilepsy, Sleep EEG and neurodiagnostics to first and second year medical students: University of Utah School of Medicine 1997-2010.

Teaching digital imagery and image analysis: Marc Lab 1998-2014.

Graduate and Undergraduate Student Mentoring: 2004-2014.

Principal Investigator/Program Director (Last, First, Middle):

Publications:

Peer reviewed manuscripts:

- Retinal Remodeling in Human Retinitis Pigmentosa. B.W. Jones, C.B. Watt, K. Rapp, H. Wang, M.V. Shaw, J-H Yang, M. Marmor, J. Anderson, R.E. Marc. (in preparation)
- The All Amacrine Cell Connectome: A Dense Network Hub. R.E. Marc, J.R. Anderson, B.W. Jones, C. Sigulinsky and J. Scott Lauritzen. *Frontiers in Neuroscience*. Accepted for publication.
- Synapse Classification and Localization in Electron Micrographs. V. Jagadeesh, J. Anderson, B.W. Jones, R.E. Marc, S. Fisher and B.S. Manjunath. *Pattern Recognition Letters*. Vol. 43, 1 July 2014. pp. 17-24
- Quantitative Analyses of Retinal Vascular Area and Density after Different Methods to Reduce VEGF in a Rat Model of Retinopathy of Prematurity. Wang H, Yang Z, Jiang Y, Flannery JG, Hammond S, Kafri T, Vemuri SK, Jones B, Hartnett ME. *Invest Ophthalmol Vis Sci*. 2014 Jan 14. pii: iovs.13-13429v1. doi: 10.1167/iov.13-13429. [Epub ahead of print]
- Robust Segmentation based Tracking using an Adaptive Wrapper for Inducing Priors. Vignesh Jagadeesh, James Anderson, B.W. Jones, Robert E. Marc, Steven K Fisher and B.S Manjunath. *IEEE Transactions Image Processing*. Volume:22, Issue 12 2013
- Retinal Connectomics: Towards Complete, Accurate Networks. Marc RE, Jones BW, Watt CB, C. Sigulinsky, Anderson JR, Lauritzen JS. 2013 *Prog Ret Eye Res*, 2013.
- Synapse classification and localization in Electron Micrographs. V Jagadeesh, J Anderson, B Jones, R Marc, S Fisher, BS Manjunath. *Pattern Recognition Letters* 7/18/2013
- Alternative Complement Pathway Deficiency Amerliorates Chronic Smoked-Induced Functional And Morphological Ocular Injury. 2013. A. Woodell, B. Coughlin, K. Kunchithapautham, S. Casey, T. Williamson, W.D. Ferrell, C. Atkinson, B.W. Jones, B. Rohrer. *PLoS One* 8(6), e67894
- Restoration of Retinal Structure and Function After Selective Photocoagulation. A. Sher, B.W. Jones, P. Huie, Y. Paulus, L.S. Leung, H. Nomoto, R.E. Marc, D. Palanker. *J. Neurosci*. 2013 Apr 17;33(16):6800-8. doi: 10.1523/JNEUROSCI.1044-12-2013.
- The Role of ELOVL4 And Very Long Chain Polyunsaturated Fatty Acids In Mouse Models of Stargardt Type 3 Retinal Degeneration. P. Barabas, A. Liu, W. Xing, C-K. Jason Chen, Z. Tong, C. B. Watt, B.W. Jones, P. S Bernstein, D. Križaj. *Proc Natl Acad Sci USA* 2013. Mar 26;110(13):5181-6. doi: 10.1073/pnas.1214707110 Epub 2013 Mar 11.
- ON cone bipolar cell axonal synapses in the OFF inner plexiform layer of the rabbit retina. Lauritzen JS, Anderson JR, Jones BW, Watt CB, Mohammed S, Hoang JV, Marc RE. *J Comp Neurol* 2013 doi: 10.1002/cne.23244. [epub ahead of print]
- Retinal Connectomics: A new era for connectivity analysis. Marc RE, Jones BW, Lauritzen JS, Watt CB, Anderson JR. 2013 *New Visual Neurosciences*. MIT Press. ISBN 9780262019163.
- Building retinal connectomes. Marc RE, Anderson JR, Jones BW, Watt CB 2012 *Current Opinion in Neurobiology* 22:568-574.
- Retinal Remodeling. B.W. Jones, M. Kondo, H. Terasaki, Y. Lin, M. McCall, R.E. Marc. *Jpn J Ophthalmol*. 2012 Jul;56(4):289-306. Epub 2012 May 30.
- Computational molecular phenotyping of retinal sheet transplants to rats with retinal degeneration. Seiler MJ, Jones BW, Aramant RB, Yang PB, Keirstead HS, Marc RE. *Eur J Neurosci*. 2012 Jun;35(11):1692-704. Epub 2012 May 17.
- 2012 Building retinal connectomes. Marc RE, Anderson JR, Jones BW, Watt CB. *Current Opinion in Neurobiology*, 2012 Apr 10. [Epub ahead of print]
- Rapid glutamate receptor 2 trafficking during retinal degeneration. Lin Y, Jones BW, Liu A, Vazquez-Chona FR, Lauritzen JS, Ferrell WD, Marc RE. *Mol Neurodegener*. 2012 Feb 10;7;7.
- Online parameter estimation in dynamic Markov Random Fields for image sequence analysis. V Jagadeesh, BS Manjunath, J Anderson, B Jones, R Marc, SK Fisher. *Image Processing (ICIP)*, 2012 19th IEEE International Conference on, 301-304
- Dysmorphic Photoreceptors in a P23H Mutant Rhodopsin Model of Retinitis Pigmentosa are Metabolically Active and Capable of Regenerating to Reverse Retinal Degeneration. D. Lee, F.V-Chona, W. Ferrell, B. Tam, B.W. Jones, R.E. Marc, O. Moritz. 2011 *J. Neurosci*. 2012 Feb 8;32(6):2121-8.
- Generation of an inbred miniature pig model of retinitis pigmentosa. Ross JW, Fernandez de Castro JP, Zhao J, Samuel M, Walters E, Rios C, Bray-Ward P, Jones BW, Marc RE, Wang W, Zhou L, Noel JM, McCall MA, DeMarco PJ, Prather RS, Kaplan HJ. *Invest Ophthalmol Vis Sci*. 2012 Jan 31;53(1):501-7.
- Retinoid Receptors Trigger Neuritogenesis in Retinal Degenerations. Y. Lin, B.W. Jones, A. Liu, J.F. Tucker, K. Rapp, L. Luo, W. Baehr, P.S. Bernstein, C.B. Watt, J-H Yang, M.V. Shaw, R.E. Marc. *FASEB J*. 2011 Sep. 22. [epub ahead of publication]
- Retinal Remodeling in the Tg P347L Rabbit, a Large-Eye Model of Retinal Degeneration. B.W. Jones, M. Kondo, H. Terasaki, C.B. Watt, K. Rapp, J. Anderson, Y. Lin, M.V. Shaw, J-H Yang, R.E. Marc. *J Comp. Neurol.* (Cover) 2011 Oct 1; 519(14):Spc1. doi: 10.1002/cne.22737.
- Exploring the retinal connectome. J.R. Anderson, B.W. Jones, C.B. Watt, M.V. Shaw, J-H. Yang, D. DeMill, J.S. Lauritzen, Y. Lin, Kevin D. Rapp, D. Mastronarde, P. Koshevoy, B. Grimm, T. Tasdizen, R. Whitaker, R.E. Marc. 2010 *MolVis* 17:355-379.
- Automatic mosaicking and volume assembly for high-throughput serial-section transmission electron microscopy. T. Tasdizen, P. Koshevoy, B. Grimm, J. Anderson, B.W. Jones, R.T. Whitaker, R.E. Marc. *J Neurosci Methods*. 2010 Aug 14.
- Detection of neuron membranes in electron microscopy images using auto-context. Medical Image analysis: Jurrus E, Paiva ARC, Watanabe S, Jorgensen EM, Anderson JR, Jones BW, Whitaker R, Marc R, Tasdizen T 2010. *Medical Image Analysis* 14:770-783.

Principal Investigator/Program Director (Last, First, Middle):

- The Viking viewer for connectomics: scalable multi-user annotation and summarization of large volume data sets. Anderson JR, Mohammed S, Grimm B, Jones BW, Koshevoy P, Tasdizen T, Whitaker R, Marc R 2010 J Microscopy: [doi: 10.1111/j.1365-2818.2010.03402.x] Epub ahead of print
- A Computational Framework for Ultrastructural Mapping of Neural Circuitry. Anderson JR, Jones BW, Yang J-H, Shaw MV, Watt CB, Koshevoy P, Spaltenstein J, Jurrus E, Kannan UV, Whitaker R, Mastronarde D, Tasdizen T, Marc R. 2009. PLoS Biol 7(3): e1000074 [doi:10.1371/journal.pbio.1000074]
- An Optimal-Path Approach for Neural Circuit Reconstruction. Jurrus E., Whitaker R., Jones BW, Marc R., Tasdizen T. 2009 Scientific Commons 44510622 [doi:10.1.1.140.3481].
- Effect of Shape And Coating Of A Subretinal Prosthesis On Its Integration With The Retina. Butterwick A, Huie P, Jones BW, Marmor MF, Marc RE, Palanker D. Experimental Eye Research. 2009 88(1):22-9
- Extreme Retinal Remodeling Triggered by Light Damage: Implications for AMD. Marc RE, Jones BW, Watt CB, Vazquez-Chona F, Vaughan DK, Organisciak DT. 2008. Molecular Vision 14: 782-806.
- Neural Reprogramming in Retinal Degenerations. Marc RE, Jones BW, Anderson JR, Kinard K, Marshak DW, Wilson JH, Wensel TG, Lucas RJ. 2007. Invest. Ophthalmol. Vis. Sci. 48(7):3364-71.
- Review: Retinal Remodeling During Retinal Degeneration. Jones BW, Marc RE. Experimental Eye Research. 2005, 81: 121-244.
- Excitation Mapping With the Organic Cation AGB²⁺. Marc RE, Kalloniatis M, Jones BW. 2005. Vision Research 45: 3454-3468.
- Review: Retinal Remodeling in Retinal Degenerations. Jones BW, Watt CB, Marc RE. 2005. Clinical and Experimental Optometry 88: 282-291.
- Retinal remodeling triggered by photoreceptor degenerations. Jones BW, Watt CB, Frederick JM, Baehr W, Chen CK, Levine EM, Milam AH, LaVail MM, Marc RE. Journal of Comparative Neurology pp. 1-16 Sep, 8;464(1) 2003
- Neural Remodeling in Retinal Degeneration. Marc RE, BW Jones, CB Watt and E Strettoi. Progress in Retinal and Eye Research, Prog Retin Eye Res. pp. 607-655 Sep; 22(5) 2003
- Retinal remodeling in inherited photoreceptor degenerations. Marc RE, BW Jones Molecular Neurobiology 28: 139-148 2003.
- Molecular Phenotyping of Retinal Ganglion Cells Robert E. Marc and Bryan W. Jones. The Journal of Neuroscience. pp 413-427 Jan, 15 22(2) 2002.
- Familial advanced sleep-phase syndrome: A short-period circadian rhythm variant in humans: pp 1062-1065 CR Jones, SS Campbell, SE Zone, F Cooper, A DeSano, PJ Murphy, B Jones, L Czajkowski & Louis J. Ptacek. Nature Medicine 2000

Chapters:

- Chapter: Retinal Remodeling and Visual Prosthetics. Jones BW, Watt CB, Marc RE. Visual Prosthetics, Elsevier Press. 2011.
- Chapter: Neural Plasticity Revealed by Light-Induced Photoreceptor Lesions. Jones BW, Marc RE, Watt CB, Vaughan DK, Organisciak DT. Retinal Degenerative Diseases, Springer, (New York), pp. 405-410. 2005.

Abstracts:

- A Synaptic Basis for Small World Network Design in the ON Inner Plexiform Layer of the Rabbit Retina. J Scott Lauritzen, Noah T. Nelson, Crystal L. Sigulinsky, Nathan Sherbotie, John Hoang, Rebecca L. Pfeiffer, James R. Anderson, Carl B. Watt, Bryan W. Jones and Robert E. Marc. ARVO 2014
- Metabolic Changes Associated With Müller Cells In A Transgenic Rabbit Model Of Retinal Degeneration. Rebecca L. Pfeiffer, Bryan W. Jones, Robert E. Marc. ARVO 2014
- Retinal Remodeling in a Rat Model of the Smith-Lemli-Opitz Syndrome (SLOS). Steven J. Fliesler, Christopher C. Goulah, W. Drew Ferrell, Robert E. Marc and Bryan W. Jones. ARVO 2013.
- Pure Feedforward Amacrine Cells. Robert E. Marc, Felix R. Vazquez-Chona, John V. Hoang, Crystal Sigulinsky, Carl B. Watt, myself, James R. Anderson and J. Scott Lauritzen. ARVO 2013.
- Tiered Cross-Class Bipolar Cell Gap Junctional Coupling in the Rabbit Retina. J. Scott Lauritzen, John V. Hoang, Crystal Sigulinsky, myself, James R. Anderson, Carl B. Watt, Shoeb Mohammed and Robert E. Marc. ARVO 2013.
- Sparse Network Principles of GABAergic Amacrine Cell Heterocellular Coupling. Crystal L. Sigulinsky, J. Scott Lauritzen, John V. Hoang, Carl B. Watt, Bryan W. Jones, James R. Anderson, Shoeb Mohammed and Robert E. Marc. ARVO 2013.
- Constructive Retinal Plasticity After Selective Ablation of the Photoreceptors. Corinne N. Beier, Bryan W. Jones, Philip Huie, Yannis M. Paulus, Daniel Lavinsky, Loh-Shan B. Leung, Hiroyuki Nomoto, Robert E. Marc, Daniel V. Palanker, and Alexander Sher. ARVO 2013.
- Connectomics Analysis of Rod-Cone Interaction Networks. Lauritzen JS, Anderson JR, Watt CB, Jones BW, Marc RE. FASEB Retina 2012.
- Diffusely-Stratified OFF Cone Bipolar Cell Inputs to Amacrine Cells in the ON Inner Plexiform Layer. Lauritzen JS, Jones BW, Watt CB, Mohammed S, Anderson JR, Marc RE. ARVO 2012.
- Retinal Metabolic Response to Cigarette Smoke. Butler AD, Ferrell WD, Woodell A, Atkinson C, Rohrer B, Marc RE, Jones BW. ARVO 2012.
- Histologic Correlation of OCT With Diseased Retina In Humans. Ferrell WD, Williams L, Watt CB, Anderson JR, Marc RE, Jones BW. ARVO 2012.
- The Synaptic Basis of Rod-Cone Pathway Interactions. Marc RE, Lauritzen JS, Jones BW, Watt CB, Anderson JR. ARVO 2012.
- Metabolic Profiling of Activated Retinal Glia F.R. Vazquez-Chona, W.D. Ferrell, E.M. Levine, B.W. Jones, R.E. Marc. Society for Neuroscience 2011.

Principal Investigator/Program Director (Last, First, Middle):

- Retinoid Receptors Trigger Neuritogenesis In Retinal Degenerations. Y. Lin, B.W. Jones, A. Liu, J.F. Tucker, K. Rapp, L. Luo, W. Baehr, P.S. Bernstein, C.B. Watt, J-H Yang, M.V. Shaw, R.E. Marc. Society for Neuroscience 2011.
- Bipolar Cell "Accessory ON" Input to Amacrine Cells in the OFF Inner Plexiform Layer. J.S. Lauritzen, B.W. Jones, C.B. Watt, S. Mohammed, J.R. Anderson, R.E. Marc. Ophthalmology, Moran Eye Center, Univ. of Utah, Salt Lake City, UT. ARVO 2011.
- Visual Restoration And Circuitry-Retinal Sheet Transplants To Rats With Retinal Degeneration. R.B. Aramant, B.W. Jones, M. Seiler, P.B. Yang, H.S. Keirstead, R.E. Marc. Anatomy & Neurobiology UC Irvine., Ophthalmology, Moran Eye Center, Univ. of Utah, Salt Lake City, UT. ARVO 2011.
- Short and Long-Term Changes in the Retina of a *Xenopus laevis* P23H mutant rhodopsin model of retinitis pigmentosa. D.C. Lee, B.M. Tam, F.V-Chona, W.D. Ferrell, B.W. Jones, R.E. Marc, O.L. Moritz. Ophthalmology & Visual Sciences, VGH Eye Care Centre, University of British Columbia, Ophthalmology, Moran Eye Center, Univ. of Utah, Salt Lake City, UT. ARVO 2011.
- Low-Level Gestational Lead Exposure Induces Metabolic Changes in Developing Mouse Retina. W.D. Ferrell, S. Chaney, D.A. Fox, R.E. Marc, B.W. Jones. College of Optometry, University of Houston, Ophthalmology, Moran Eye Center, Univ. of Utah, Salt Lake City, UT. ARVO 2011.
- CaMKII Signaling is Contributive to Neuritogenesis in Light-Induced Retinal Degeneration. Y. Lin, B.W. Jones, K. Rapp, M.V. Shaw, J-H Yang, C.B. Watt, R.E. Marc. Ophthalmology, Moran Eye Center, Univ. of Utah, Salt Lake City, UT. ARVO 2011.
- Neural Activity in the Inner Retina After Photocoagulation. B.W. Jones, P. Huie, H. Wang, A. Sher, R.E. Marc, D. Palanker. Stanford University, University of California Santa Cruz, Ophthalmology, Moran Eye Center, Univ. of Utah, Salt Lake City, UT. ARVO 2011.
- Computational Molecular Phenotyping and Excitation Mapping in a Human Patient with Retinitis Pigmentosa. B.W. Jones, R.E. Marc. Ophthalmology, Moran Eye Center, Univ. of Utah, Salt Lake City, UT. ARVO 2010.
- Metabolic Profiling of Photoreceptor Degeneration. W.D. Ferrell, F.R. Vazquez-Chona, B.W. Jones, R.E. Marc. Ophthalmology, Moran Eye Center, Univ. of Utah, Salt Lake City, UT. ARVO 2010.
- The Metabolic Response of Müller Glial Cells to Photoreceptor Degeneration. F.R. Vazquez-Chona, W.D. Ferrell, B.W. Jones, R.E. Marc. Ophthalmology, Moran Eye Center, Univ. of Utah, Salt Lake City, UT. ARVO 2010.
- Roles of Retinoic Acid Signalling in Neuritogenesis During Light-Induced Retinal Degeneration. Y-H. Lin, B.W. Jones, K. Rapp, M.V. Shaw, J-H. Yang, C.B. Watt, R.E. Marc. Ophthalmology, Moran Eye Center, Univ. of Utah, Salt Lake City, UT. ARVO 2010.
- Retinal Progenitor Sheet Transplants to Rats With Retinal Degeneration - Circuitry Between Transplant and Host. M.J. Seiler^{1A,1B}, B.W. Jones², R.B. Aramant^{1A}, R.E. Marc², H.S. Keirstead^{1A,1B}. ^AAnatomy & Neurobiol/Reeve-Irvine Res Ctr, ^BSue & Bill Gross Stem Cell Research Center, ¹UC Irvine, Irvine, CA; ²Ophthalmology, Moran Eye Center, Univ. of Utah, Salt Lake City, UT. 13th International Meeting on Neural Regeneration
- Ultrastructural Mapping of Neural Circuitry, A Computational Framework J.R. Anderson¹, B. W. Jones¹, J-H Yang¹, M.V. Shaw¹, C.B. Watt¹, P. Koshevoy², J. Spaltenstein², E. Jurrus², U.V. Kannan², R. Whitaker², D. Mastronarde³, T. Tasdizen^{2, 4}, R. E. Marc¹ Dept. Ophthalmology, Moran Eye Center, University of Utah¹, Scientific Computing and Imaging Institute, University of Utah², The Boulder Laboratory for 3-D Electron Microscopy of Cells, University of Colorado, Boulder³, Dept. Electrical and Computer Engineering, University of Utah⁴ • IEEE ISBI 09
- Remodeled host-graft circuitry in long-term retinal progenitor transplants to rats with retinal degeneration. M.J. Seiler¹, B.W. Jones³, R.B. Aramant², H.S. Keirstead¹, R.E. Marc³. ¹Anatomy & Neurobiol/Sue & Bill Gross Stem Cell Research Center, ²Anat. & Neurobiol, UC Irvine, Irvine, CA; ³Ophthalmology, Moran Eye Center, Univ. of Utah, Salt Lake City, UT. Society for Neuroscience 2009.
- Molecular Phenotyping of Long Term Retinal Transplants to Retinal Degenerate Rats. M.J. Seiler^{1a,1b}, B.W. Jones², R.B. Aramant^{1a}, H.S. Keirstead^{1a,1b}, R.E. Marc². ^aAnatomy & Neurobiol/Reeve-Irvine Res Ctr, ^bSue & Bill Gross Stem Cell Research Center, ¹UC Irvine, Irvine, CA; ²Ophthalmology, Moran Eye Center, Univ. of Utah, Salt Lake City, UT. ARVO 2009.
- Metabolic Biomarkers of Early Retinal Oxidative Stress. W.D. Ferrell, F.R. Vazquez-Chona, Y. Lin, B.W. Jones, R.E. Marc. Ophthalmology, Moran Eye Center, Salt Lake City, UT. ARVO 2009.
- The Retinal Connectome: Networks in the Amacrine Cell Layer. J.R. Anderson¹, B.W. Jones¹, D. Mastronarde², P. Koshevoy³, C.B. Watt¹, J.H. Yang¹, T. Tasdizen³, R. Whittaker³, J Spaltenstein³, R.E. Marc¹. ¹Ophthalmology, Univ of Utah Moran Eye Center, Salt Lake City, UT; ²The Boulder Laboratory For 3-D Electron Microscopy of Cells, University of Colorado Boulder, Boulder, CO; ³Scientific Computing Institute, Univ of Utah, Salt Lake City, UT. ARVO 2009.
- Pharmacological Prevention of RAGE-Mediated RPE Damage: Implications for Age-Related Macular Degeneration. J.F. Tucker¹, C.D. Gerstner¹, T.P. Kennedy^{2a}, N.V. Rao^{2a}, G.D. Prestwich^{2b}, B.K. Ambati¹, R.E. Marc¹, B.W. Jones¹. ¹Ophthalmology, University of Utah Moran Eye Center, Salt Lake City, UT; ^aPulmonology, ^bMedicinal Chemistry, ²University of Utah, Salt Lake City, UT. ARVO 2009.
- P347L Rhodopsin Transgenic Rabbit Model of Retinitis Pigmentosa. B.W. Jones¹, R.E. Marc¹, J.R. Anderson¹, M.V. Shaw¹, J-H Yang¹, H. Terasaki², M. Kondo². ¹Ophthalmology, Moran Eye Center, Salt Lake City, UT; ²Ophthalmology, Nagoya University, Graduate School of Medicine, Nagoya, Japan. Retinal Degeneration 2008
- Rapid Ionotropic Glutamate Receptor Plasticity in Light-Induced Retinal Stress. Y. Lin, B.W. Jones, K. Rapp, J.R. Anderson, C.B. Watt, M.V. Shaw, J-H Yang, F.R. Vasquez-Chona, R.E. Marc. John A. Moran Eye Center, University of Utah School of Medicine, Salt Lake City, UT. Retinal Degeneration 2008
- Metabolic Biomarkers of Early Retinal Oxidative Stress. F.R. Vasquez-Chona, W.D. Ferrell, Y. Lin, B.W. Jones, R.E. Marc John A. Moran Eye Center, University of Utah School of Medicine, Salt Lake City, UT. Retinal Degeneration 2008
- Computational Molecular Phenotyping and Excitation Mapping in the P347L Rhodopsin Transgenic Rabbit Model of Retinitis Pigmentosa. B.W. Jones¹, R.E. Marc¹, H. Terasaki², M. Kondo². ¹Ophthalmology, Moran Eye Center, Salt Lake City, UT; ²Ophthalmology, Nagoya University, Graduate School of Medicine, Nagoya, Japan. ARVO 2008

Principal Investigator/Program Director (Last, First, Middle):

- Excitatory Drive Patterns of TH1 Dopaminergic Polyaxonal Cells in Rabbit Retina. RE Marc, BW Jones, P Pandit, JR Anderson, TM Raleigh. Ophthalmology, School of Medicine, University of Utah Moran Eye Center, Salt Lake City, Utah. 2008.
- An optimal-path approach for neural circuit reconstruction. E. Jurrus, R. Whitaker, B. W. Jones, R. Marc, and T. Tasdizen. Biomedical Imaging: From Nano to Macro, 2008. ISBI 2008. 5th IEEE International Symposium on, pp. 1609-1612, May 2008.
- Structure and Function of Microneuromas in Retinal Remodeling. BW Jones¹, RE Marc¹, CB Watt¹, K. Kinard¹, D. DeMill¹, J-H Yang¹, T. Tasdizen², P. Koshevoy², E. Jurrus², R. Whitaker². 1Moran Eye Center. 2School of Computing/Scientific Computing Institute, University of Utah, Salt Lake City, UT. Assoc Res Vision & Ophthalmology 2007.
- Partial Circuitry Rescue By Cones In Retinitis Pigmentosa. BW Jones, K. Kinnard, DW Marshak, RE Marc. John A Moran Eye Center, University of Utah, Salt Lake City, UT. University Texas Medical School, Houston TX. Assoc Res Vision & Ophthalmology 2006.
- Visualization of Light and Ligand Activated Signaling in the Primate Retina. RE Marc^{1A}, BW Jones^{1A}, JR Anderson^{1B}, DW Marshak². A Ophthalmology, B Neuroscience Program, 1 Univ Utah, Salt Lake City, UT; 2 Neurobiology & Anatomy, Univ Texas Med Sch, Houston, TX. Assoc Res Vision & Ophthalmology 2006.
- Assembly of three-dimensional volumes from serial-section transmission electron microscopy. T. Tasdizen, P. A. Koshevoy, B. W. Jones, R. T. Whitaker, and R. E. Marc, in MIAAB, 2006, pp. 10-17.
- Large-scale computational reconstruction of three-dimensional neural connectivity. T. Tasdizen, BW Jones, P. Koshevoy, E. Jurrus, R. Whitaker, M. Hardy, C.B. Chien, RE Marc and W. Denk. NIH/NSF Collaborative Research in Computational Neuroscience (CRCNS), Washington D.C. 2006
- Retinal Migration Into 3-Dimensional Subretinal Prosthetic Implants. P Huie^{1a}, I Chan^{1b}, A Vankov^{1a}, A Butterwick^{1c}, M Marmor^{1b}, MS Blumenkranz^{1b}, BW Jones², D Palanker^{1a}. (a) Ophthalmology and Hansen Exptl. Physics Lab, (b) Ophthalmology, (c) Hansen Exptl. Physics Lab, 1 Stanford, Stanford, CA; 2 Moran Eye Center, University of Utah, UT. Assoc Res Vision & Ophthalmology 2006.
- T. Tasdizen, R. Whitaker, R. Marc and B. Jones, "Enhancement of Cell Boundaries in Transmission Microscopy Images", Proceedings of International Conference on Image Processing (ICIP), Vol. 2, pp. 129-132, September, 2005.
- Bipolar Cell Blindness: Fast, Persistent Second Order Effects of Photoreceptor Degenerations. RE Marc, CB Watt & BW Jones. Moran Eye Center, University of Utah. Salt Lake City, Ut. Ocular Cell and Molecular Biology, Assoc Res Vision & Ophthalmology 2005.
- The Chx10, p27Kip1-Double Null Retina Contains Cone Bipolar Cells, but Remains Severely Compromised in Visual Function. E.M. Levine, Y.Sauve, B.W. Jones, E.S. Green, R.Marc. John A Moran Eye Center, University of Utah, Salt Lake City, UT. Assoc Res Vision & Ophthalmology 2005.
- Cell Cycle Alterations in Chx10 Null and Chx10, p27Kip1 Double Null Retinal Progenitor Cells Reveal the Importance of Proliferation Rate in Promoting Retinal Development. T.M. Raleigh, E.S. Green, B.W. Jones, R.Marc, E.M. Levine. John A Moran Eye Center, University of Utah, Salt Lake City, UT. Assoc Res Vision & Ophthalmology 2005.
- Excitation Mapping in a Rodent Seizure Model. DK Takahashi, BW Jones, RE Marc, K Wilcox. American Epilepsy Society, 58th Annual Meeting, 2004. Abstract 1.040.
- Computational Molecular Phenotyping (CMP) of the Platyhelminth Schmidtea Mediterranea. LA Hunt, BW Jones, RE Marc. Program No. 373.3 Society for Neuroscience 2004.
- Neural plasticity revealed by light-induced photoreceptor lesions. BW Jones, RE Marc, CB Watt, DK Vaughan, DT Organisciak. Univ Utah/Moran Eye Center, Salt Lake City, UT; Biology, University of Wisconsin Oshkosh, Oshkosh, WI; Biochemistry and Molecular Biology, Wright State University, Dayton, OH. XI International Symposium on Retinal Degeneration, Perth Australia, 2004.
- Dopamine Amacrine and Interplexiform Cells Exhibit Glutamatergic Signatures. BW Jones, CB Watt, RE Marc. Ophthalmology, Univ Utah/Moran Eye Center, Salt Lake City, UT Assoc Res Vision & Ophthalmology 2004.
- Excitatory Self Signaling in Retinal Remodeling. Marc RE, BW Jones. Ophthalmology, Univ Utah/Moran Eye Center, Salt Lake City, UT Assoc Res Vision & Ophthalmology 2004.
- Complex Rewiring in Retinal Remodeling. CB Watt, BW Jones, J-H Yang, RE Marc. Ophthalmology, Univ Utah/Moran Eye Center, Salt Lake City, UT Assoc Res Vision & Ophthalmology 2004.
- Retinal Remodeling Triggered by Light Damage in the Albino Rat. B. W. Jones, C. B. Watt, R. E. Marc. Ophthalmology, Univ Utah/Moran Eye Center, Salt Lake City, UT Assoc Res Vision & Ophthalmology 2003. Marc RE, BW Jones 2003
- Phenotyping neurons with pattern recognition of molecular mixtures. R. E. Marc, B. W. Jones. IEEE, International Symposium on Signal Processing and its Applications, S1571.
- Severe remodeling of the mouse neural retina triggered by rod degeneration B. W. Jones, C. K. Chen, C. B. Watt, J. M. Frederick, W. Huang, W. Baehr, R. E. Marc. Ophthalmology, Univ Utah/Moran Eye Center, Salt Lake City, UT Assoc Res Vision & Ophthalmology 2002.
- Circuitry in the Rabbit Inner Plexiform Layer: Enhanced Analysis with Deep-Etch EM Immunogold C. B. Watt, J. Yang, B. W. Jones, M. V. Shaw, R. E. Marc. Ophthalmology, Univ Utah/Moran Eye Center, Salt Lake City, UT Assoc Res Vision & Ophthalmology 2002.
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- Molecular Phenotyping Of The Neural Retina In Retinitis Pigmentosa. (R.E. Marc¹, B.W. Jones¹, J.H. Yang¹, M.V. Shaw¹ and A.H. Milam²) Moran Eye Center, Univ Utah, Salt Lake City, UT¹; Scheie Eye Institute, Univ Penn, Philadelphia, PA². Assoc Res Vision & Ophthalmology 2001.

Principal Investigator/Program Director (Last, First, Middle):

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Computational Molecular Phenotyping. Visualizing cellular chemistry. RE Marc, BW Jones Moran Eye Center, Univ. of Utah, Salt Lake City, UT First International Symposium on computational Cell Biology 2001
Biochemical signature analysis of the human ganglion cell layer. BW Jones, RE Marc, CB Watt, MV Shaw and JH Yang Moran Eye Center, Univ. Utah, Salt Lake City, UT. Assoc Res Vision & Ophthalmology 2000.
Studies examining the neurotransmitter properties of horizontal cell populations in the goldfish retina. CB Watt, M Kalloniatis, BW Jones, and RE Marc. Moran Eye Center, Univ. Utah, Salt Lake City, UT. Assoc Res Vision & Ophthalmology 2000.
The molecular signature of all types of rabbit retinal ganglion cells. RE Marc, BW Jones, CB Watt, MV Shaw, and JH Yang. Moran Eye Center, Univ. Utah, Salt Lake City, UT. Assoc Res Vision & Ophthalmology 2000.
Ionotropic glutamatergic drive histories of amacrine cell layer neurons reported by 1-amino-4-guanidobutane (AGB) in vivo. BW Jones, J Howard, A Beg, CB Watt, and RE Marc. Moran Eye Center, Univ. Utah, Salt Lake City, UT. Assoc Res Vision & Ophthalmology 1999.
Neurochemical subtypes of LGNd neurons in the cat LGNd and PGN. MT Schmolesky¹, BW Jones², YC Yang², AG Leventhal¹, and RE Marc². Department of Neurobiology and Anatomy¹ and Moran Eye Center², Univ. Utah, Salt Lake City, UT. Assoc Res Vision & Ophthalmology 1999.

Technical Reports:

Tolga Tasdizen, Ross Whitaker, Robert Marc and Bryan Jones, "Automatic Correction of Non-uniform Illumination in Transmission Electron Microscopy Images", SCI Institute Technical Report, UUSCI-2005-008, University of Utah, September, 2005.

Invited Presentations:

University of Tennessee, Memphis, 2014.
University of Tübingen, Tübingen Germany, 2014.
University of Louisville, Dept. of Ophthalmology, 2014.
Janelia Farm, Lasker Conference, 2014
Utah Chapter Foundation Fighting Blindness, 2014.
Medical College of Wisconsin, 2013
American Academy of Optometry, 2013.
NIH, NEI Retinal Remodeling, 2013.
Clinical Faculty Day, University of Utah Ophthalmology, 2012.
ISER, Neural Retina, Berlin, Germany, 2012.
Neurology Grand Rounds. University of Utah, 2011.
FASEB, Retinal Cell Biology Mtg. Saxtons River, VT. 2010.
University of Louisville, Dept. of Ophthalmology, 2010.
ARUP Laboratories Institute for Clinical and Experimental Pathology, 2009.
Stanford University, Department of Ophthalmology, 2009.
The 2nd Bonn Dialogue International Symposium on Visual Prosthesis, 2009.
Apple Computer, Advanced Computational Research Group, 2009.
Torsten Wiesel Research Institute, West China Hospital, Sichuan University, 2008.
GlaxoSmithKline, 2008.
University of Texas Health Sciences Center, 2008.
Huntsman Cancer Institute, 2008.
Ophthalmic Photographers Society, Moran Eye Center, 2008.
Scientific Computing Institute, University of Utah, 2007.
University of Leicester Dept. of Toxicology, 2007.
Microscopy and Microanalysis, 2007.
Bio Image Informatics, UCSB, 2006.
USU Center for Integrated BioSystems, 2006.
NIH/NCRR Center for Integrative Biomedical Computing, 2006.
Medical University South Carolina, Dept. of Ophthalmology, 2006.
UCSB Center for Bio-Image and Informatics, 2006.
ARUP Laboratories Institute for Clinical and Experimental Pathology, 2005.
Ophthalmology Grand Rounds Moran Eye Center, 2004.
St. Louis University, Dept of Pharmacology & Physiological Science, 2004.
University of Michigan, Depts of Bioinformatics and Pharmacology, 2004.
Stanford University, Department of Ophthalmology, 2004.
University of Utah, Department of Ophthalmology Moran Eye Center, 2002.
University of Utah, Department of Bioinformatics, 2001.

Principal Investigator/Program Director (Last, First, Middle):

Current Research Support:

NIH NEI RO1 EY015128-08...12, Title: Retinal Remodeling, PI: R Marc, Co-PI BW Jones. Period: 01 April 2012...31 Mar 2016, Role & Objectives: The aims of this program are to (1) Establish an intervention for early disease in the transgenic rhodopsin P347L (Tg P347L) rabbit, a model of human autosomal dominant retinitis pigmentosa (adRP); (2) Establish optogenetic interventions for late stage adRP; (3) Build pathoconnectomes for early and late stage Tg P347L rabbit BCs and All cells; (4) Evaluate retinoic acid (RA) / retinoid (RX) analogues as blockers of remodeling.

RO1 NIH NEI RO1 EY02576-35 Marc (PI) 01/01/12-12/31/16 Structural Neurochemistry of Retinal Circuits Role: Co-Investigator