Curriculum Vitae

Rebecca Maxfield Boumil, PhD

Research Scientist
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Education

B.A. in Microbiology, 1992, University of New Hampshire, Durham, NH
Ph.D. in Molecular Microbiology, 1999, Tufts University School of Medicine, Boston, MA

Positions and Honors

2008-present *Research Scientist*, The Jackson Laboratory, Bar Harbor, ME
2006-2008 *Associate Research Scientist*, The Jackson Laboratory, Bar Harbor, ME
1999-2003 *Postdoctoral Fellow*, Harvard Medical School, Massachusetts General Hospital, Department of Molecular Biology, Boston, MA

Fellowships

1999-2003 NIH NRSA Individual Fellowship, Department of Genetics at Harvard Medical School and Department of Molecular Biology at Massachusetts General Hospital, Boston, MA

Invited Speaker

2003 Guest Lecturer, Advanced Topics in Molecular Biology, Bowdoin College, Brunswick, ME, April
2010 Talk presented at the Gordon Research Conference: Mechanisms of Epilepsy & Neuronal Synchronization; A Missense Mutation in a Highly Conserved Alternate Exon of Dynamin-1 Causes Epilepsy in Fitful Mice, Waterville, ME
2014 Talk presented at the Gordon Research Conference: Mechanisms of Epilepsy & Neuronal Synchronization; Pleiotropy in a Dynamin 1 Mouse Model of Epileptic Encephalopathy, West Dover, VT

Teaching

1993 Lab Instructor, Medical Microbiology, Tufts University School of Medicine and Tufts University School of Dental Medicine, Boston, MA
1993-1995 Tutor, Medical Molecular Biology, Bowdoin College, Brunswick, ME
1994-1995 Small Group Instructor, Medical Molecular Biology, Tufts University School of Medicine, Boston, MA
1995 Teaching Assistant, Medical Molecular Biology, Tufts University School of Medicine, Boston, MA

Selected peer-reviewed publications (in chronological order)

Flatters MI, Maxfield R, Dawson D. 1995. The effects of a ring chromosome on the meiotic segregation of other chromosomes in *Saccharomyces cerevisiae*. Mol Gen Genet 249:309-316.

Ross LO, Maxfield R, Dawson D. 1996. Exchanges are not equally able to enhance meiotic chromosome segregation in *Saccharomyces cerevisiae*. Proc Natl Acad Sci 93:4979-4983.

Merriam JJ, Mathur R, Maxfield-Boumil R, Isberg RR. 1997. Analysis of the *Legionella pneumophila flil* gene: Intracellular growth of a defined mutant defective for flagellum biosynthesis. Infect Immun 65:2497-2501.

Boumil RM, Lee JT. 2001. Forty years of decoding the silence in X-chromosome inactivation. Hum Mol Genet 10:2225-2232.

Boumil RM, Kemp B, Angelichio M, Nilsson-Tilgren T, Dawson DS. 2003. Meiotic segregation of a homeologous chromosome pair. Mol Genet Genomics 268:750-760.

Kemp B, Boumil RM, Stewart MN, Dawson DS. 2004. A role for centromere pairing in meiotic chromosome segregation. Genes Dev 18:1946-1951.

Cheslock PS, Kemp BJ, Boumil RM, Dawson DS. 2005. The roles of *MAD1*, *MAD2* and *MAD3* in meiotic progression and the segregation of non-exchange chromosomes. Nat Genet 37:756-760.

Boumil RM, Ogawa Y, Sun BK, Huynh KD, Lee JT. 2006. Differential methylation of Xite and CTCF sites in Tsix mirrors the pattern of X-inactivation choice in mice. Mol Cell Biol 26:2109-2117.

Beyer B, Deleuze C, Letts VA, Mahaffey CL, Boumil RM, Lew TA, Huguenard JR, Frankel WN. 2008. Absence seizures in C3H/HeJ and knockout mice caused by mutation of the AMPA receptor subunit *Gria4*. Hum Mol Genet 17:1738-1749.

Boumil RM, Letts VA, Roberts MC, Lenz C, Mahaffey CL, Zhang ZW, Moser T, Frankel WN. 2010. A missense mutation in a highly conserved alternate exon of Dynamin-1 causes epilepsy in fitful mice. PLoS Genet 6(8):e1001046.

Neef J, Jung S, Wong AB, Reuter K, Pangrsic T, Chakrabarti R, Kugler S, Lenz C, Nouvian R, Boumil RM, Frankel WN, Wichmann C, Moser T. 2014. Modes and regulation of endocytic membrane retrieval in mouse auditory hair cells. J Neurosci 34:705-16.

Abstracts/Oral Presentations at Meetings

Maxfield, R, Dawson, D. 1995. Distributive segregation mutants in *Saccharomyces cerevisiae*, (Presented at the Gordon Research Conference: Biological Regulatory Mechanisms, June 18-23, Plymouth, NH).

Boumil, RM, Lee, JT. 2001. Differential methylation of the *Tsix* promoter region. (Presented at The National Institute of Child Health and Human Development Fourth Postdoctoral Fellows' Workshop, December 4-5, Bethesda, MD).

Boumil RM, Letts VA, Zhang Z-W, Mahaffey CL, Lenz C, Moser T, Roberts M, Frankel WN. 2009. An isoform specific mutation in dynamin-1 in a genetic model of epilepsy. (Presented at the Society for Neuroscience meeting, October 17-21, Chicago, IL).

Boumil RM, Letts VA, Zhang Z-W, Mahaffey CL, Lenz C, Moser T, Roberts M, Frankel WN. 2010. A Missense mutation in a highly conserved alternate exon of Dynamin-1 causes epilepsy in Fitful mice. (Presented at the JAX/MDIBL Joint Scientific Symposium, September 16-17, Salisbury Cove, ME)

Boumil RM, Letts VA, Zhang Z-W, Mahaffey CL, Lenz C, Moser T, Roberts M, Frankel WN. 2010. A Missense mutation in a highly conserved alternate exon of Dynamin-1 causes epilepsy in Fitful mice. (Presented at the Gordon Research Conference: Mechanisms of Epilepsy Neuronal Synchronization, August 8-13, Waterville, ME).

Boumil RM, Buckley A, Mahaffey CL, Frankel WN. 2012. Synaptic vesicle recycling defects contributes to epilepsy in Fitful Mice. (Presented at the Gordon Research Conference: Mechanisms of Epilepsy and Neuronal Sychronization, August 19-24, Waterville, NH).

Boumil RM, Asinof SK, Frankel WN. 2014. Separation of early severe seizures from general neurological impairment in a *Dynamin 1* mouse model of epileptic encephalopathy. (Presented at the Gordon Research Conference: Mechanisms of Epilepsy and Neuronal Sychronization, August 17-22, West Dover, VT).

Research Support

Ongoing Research Support

5 R01 NS073576-03 Boumil (PI) 06/01/11-05/31/15
NIH/NINDS
The Genetics and Cell Biology of the Epileptic Mouse Mutant Fitful
The goal of this project is to define the involvement of Dynamin-1 (Dnm1) in synaptic vesicle endocytosis and to provide insight into the role that genes encoding endocytic proteins play in contributing to epilepsy.
Role: Principal Investigator

Completed Research Support

5 R03 NS065255-02 Boumil (PI) 09/01/09-08/31/11
NIH/NINDS
Dynamin-1 Mutation in a Genetic Epilepsy Model: Isoform-Specific Roles
The goal of this study is to examine the consequence of normal and mutant Dnm1 isoform expression on endocytosis and on downstream