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## BIOGRAPHICAL SKETCH

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NAME Matthew M. Harper, Ph.D.	Biological Scientist		
eRA COMMONS USER NAME			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Iowa State University	B.S.	2003	Biology
Iowa State University	Ph.D.	2007	Neuroscience
Iowa State University	Postdoc	2007-2009	Molecular Ophthalmology

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Please refer to the application instructions in order to complete sections A, B, and C of the Biographical Sketch.

### **A. Positions and Honors.**

#### **Positions and Employment**

2003-2007 Graduate studies at Iowa State University, Ames Iowa. Advisor: Prof. D.S. Sakaguchi

2007-2009 Postdoctoral Scholar, Veterinary Clinical Sciences, Iowa State University

2009-Present Research Scientist, Veterans Administration Center for the Prevention and Treatment of Vision Loss

2010-Present Assistant Professor, Veterinary Clinical Sciences, Iowa State University

#### **Honors and Awards**

Professional Advancement Grant, Iowa State University (2004)

#### **Other Experience and Professional Memberships**

Society for Neuroscience, (2004- Present)

Association for Research in Vision and Ophthalmology (2007-Present)

Iowa Center for Advanced Neurotoxicology (2009-Present)

Veterans Administration Center for the Prevention and Treatment of Vision Loss (2009-Present)

## B. Selected peer-reviewed publications (in chronological order).

1. Functional and structural changes in a canine model of hereditary primary angle-closure glaucoma. Grozdanic, Kecova H, Harper MM, Nilaweera W, Kuehn MM and Kardon RH. Invest Ophthalmol Vis Sci. 2010 Jan;51(1):255-63
2. Brain-derived neurotrophic factor released from engineered mesenchymal stem cells attenuates glutamate- and hydrogen peroxide-mediated death of staurosporine differentiated RGC-5s M.M. Harper, L. Adamson, B. Blits, M.B. Bunge, S.D. Grozdanic, D.S. Sakaguchi Exp Eye Res. 2009 Oct;89(4):538-48
3. Integrins contribute to initial morphological development and process outgrowth in adult hippocampal progenitor cells. (2009) M.M. Harper, C. Blong, E. Ye, M.L. Jacobson, D.S. Sakaguchi (2009) J Mol Neurosci. 2009 Jun 5. [Epub ahead of print]
4. Antibody mediated retinopathies in canine patients – mechanism, diagnosis and treatment modalities. (2008) S.D. Grozdanic, M.M. Harper, H. Kecova, Vet. Clin. North Am. Small Anim. Pract. Mar; 38(2):361-87, vii
5. Cell birth and death in the developing retina of the Brazilian opossum, *Monodelphis domestica*, (2008) D.S. Sakaguchi, S. Van Hoffelen, M.H.W. Greenlee, M.M. Harper, D.T. Au. Brain Research. Feb 21; 1195C: 28-42
6. Transplantation of neural progenitor cells into the developing retina of the Brazilian opossum: An *in vivo* system for studying neural progenitor cell plasticity. (2004) D.S. Sakaguchi, S..J. Van Hoffelen, E. Theusch, E. Parker, J. Orasky, M.M. Harper, A. Benediktsson and M.J. Young Developmental Neuroscience.;26(5-6):336-45
7. Exogenous modulation of intrinsic optic nerve neuroprotective activity. S.D. Grozdanic, T. Lazic, Kuehn MM, M.M. Harper, RH Kardon, E. Lavik, Y.H.Kwon, and D.S. Sakaguchi (Submitted to Graefe's Archive for Clinical and Experimental Ophthalmology)
8. Characterization of visual and structural retinal and optic nerve parameters in the laboratory opossum, *Monodelphis domestica*. M.M. Harper, S. Grozdanic, H. Kecova, D.S. Sakaguchi (Submitted to Experimental Eye Research)
9. Functional Preservation of the Neural Retina using BDNF Secreting Mesenchymal Stem Cells in the Chronic Ocular Hypertension Rat Model. M.M. Harper, S. Grozdanic, B. Blits, M. Keuhn D. Zamzow, J. Buss, R. Reger, Y. Kwon, D. Prockop, M.B. Bunge, R.H. Kardon, D.S. Sakaguchi (Submitted to Investigative Ophthalmology and Visual Sciences)
10. Characterization of functional and structural retinal ganglion cell parameters in healthy mouse eyes. M.M. Harper, K. Mohan, H. Kecova, EA Ye, T Lazic, D.S. Sakaguchi, R.H. Kardon, S.D. Grozdanic (Submitted to Investigative Ophthalmology and Visual Sciences)

## C. Research Support

### Active

- 2009-2014 Department of Veterans Affairs Center of Excellence for The Prevention and Treatment of Visual Loss. Role: Investigator \$5,000,000.00
- 2009-2011 Iowa Center for Advanced Neurotoxicology. Retinal diagnostic imaging in rodent models of Parkinson's disease Role: PI. \$16,000.00

### Pending

- 2010-2013 Veterans Administration Career Development Award. Characterization of a novel model of traumatic brain injury. Role: PI. \$400,000.00
- 2010-2014 Veterans Administration Merit Award. Prevention of hemorrhage and death after traumatic brain injury. Role: Co-I \$1,069,240.00
- 2010-2014 Department of Defense. Synthetic platelets to halt bleeding following blast injuries. Role: Co-I \$1,813,005.00