**Julie A. Mocko, Ph.D.**

*Curriculum Vita*

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**EDUCATION**

2010-2017 **Ph.D. in Physiological Optics and Vision Science**

**University of Houston**, Houston, TX

*Honors*: Graduate Teaching Assistant of the Year, 2011-2013

Presidential Scholarship, 2010-2013; Training Grant, 2013-2016

GPA: 4.0

2005-2009 **B.S. in Behavioral Neuroscience**

**Northeastern University**, Boston, MA

*Honors*: Summa Cum Laude (GPA: 3.9)

Alex Skavinsky Award for Excellence in Behavioral Neuroscience

**PROFESSIONAL EXPERIENCE**

2017-present ***Post-doctoral Research Fellow*** Circadian rhythms, development, opsins

**Cincinnati Children’s Hospital Medical Center**, Cincinnati, OH

Research: The role of atypical opsins (Opn3, Opn4, Opn5) in development and circadian rhythms.

2010-2017 ***Graduate Student Research Assistant*** Retinopathy of Prematurity (ROP)

**University of Houston**, Houston, TX

Research: The effects of vitamin A treatment in a rat model of retinopathy of prematurity.

2010-2017 ***Volunteer Graduate Tutor and Editor***

**College of Optometry, University of Houston**, Houston, TX

Tutored Ph.D. students in vision science, experimental design, quantitative methods, and statistics. Coached students for seminar and conference presentations. Proofread grant proposals, presentations, and dissertations.

2010-2013 ***Optometry Teaching Assistant***Ocular Anatomy Laboratory, Neuroanatomy Laboratory

**College of Optometry, University of Houston**, Houston, TX

Taught ocular anatomy and neuroanatomy of graduate optometry students.

2009-2010 ***Research Assistant*** Retinitis Pigmentosa (RP)

**Atlanta Veteran’s Affairs Hospital**, Atlanta, GA

Research: Characterized two genetic rodent models of retinitis pigmentosa (RP), and investigated the therapeutic potential of subretinal electrical stimulation to slow retinal degeneration in rodent models of RP.

2006-2009 ***Research Assistant*** Retinopathy of Prematurity (ROP)

**Children’s Hospital Boston, Department of Ophthalmology**, Boston, MA

Research: The neurovascular relations during retinal development and pathogenesis of ROP. Investigated the therapeutic potential of a visual cycle modulator to mitigate the severity of ROP in rodent models.

**PROFESSIONAL AFFILIATIONS**

Member, American Academy of Optometry, 2012-present

Member, American Association for the Advancement of Science, 2010-present

Member, Association for Research in Vision and Ophthalmology, 2007-present

**HONORS, AWARDS AND FELLOWSHIPS**

2015 **American Academy of Optometry Best Student Presentation**; American Academy of Optometry; Awarded to one student from all scientific paper of poster presentations at the annual AAO meeting based on novelty, scientific merit, quality of writing, and presentation.

2015 **Alcon Foundation Ezell Fellowship**; American Optometric Foundation; Graduate prospectus prize and two student travel fellowships to the 2015 American Academy of Optometry and 2016 Association for Research in Vision and Ophthalmology annual meetings.

2014 **Alcon Foundation Ezell Fellowship**; American Optometric Foundation; Graduate prospectus prize and two student travel fellowships to the 2014 American Academy of Optometry and 2015 Association for Research in Vision and Ophthalmology annual meetings.

2013, 2014 **Graduate Student Presentation of the Year Award**; Awarded to one student in the Physiological Optics and Vision Science program annually.  
College of Optometry, University of Houston, Houston, TX.

2013 **Minnie Flaura Turner Memorial Fund Award**; The Minnie Flaura Turner Memorial Fund for Impaired Vision Research, “The effects of vitamin A treatment on a rat model of ROP.” Graduate prospectus prize and certificate of merit.

2013 **Student Travel Fellowship**; American Academy of Optometry, “Effects of vitamin A on a rat model of retinopathy of prematurity.” Association for Research in Vision and Ophthalmology annual meeting, Seattle, WA.

2012, 2013 **Teaching Assistant of the Year Award.**

College of Optometry, University of Houston, Houston, TX.

2010-2013 **University Presidential Fellowship**.

College of Optometry, University of Houston, Houston, TX.

2009 **Alex Skavinsky Award for Excellence in Behavioral Neuroscience**; Awarded to one student in the Behavioral Neuroscience program each graduating class. Northeastern University, Boston, MA.

2007 **Summer Student Fellowship**; Fight for Sight, “The molecular basis for neurovascular abnormalities in retinopathy of prematurity.” Undergraduate summer research grant.

**TEACHING EXPERIENCE**

**COURSES TAUGHT AT UNIVERSITY OF HOUSTON - ASSISTANT**

2014 **Texas Optometry Career Opportunities Program (TEXOCOP)**

Designed and team taught inquiry activity on pinholes and optics

2010 - 2013 **Optometry Teaching Assistantships**

OPTO 6224 Visual Perception  
OPTO 5135 Ocular Anatomy Laboratory  
OPTO 5134 Neuroanatomy Laboratory

**COURSES TAKEN ON TEACHING**

Fall 2010 Secondary School Science Methods (SEDE 6324)   
College of Education, University of Houston, Houston, TX

**ADDITIONAL TEACHING TRAINING**

2014 **ISEE Professional Development Program**; Annual evidence based teaching training program held by the Institute for Scientist and Engineer Educators for selected applicants to learn how to teach through inquiry.  
University of California, Santa Cruz, CA.

2013 **ASCO 2nd Annual Future Faculty Program**; Annual conference held by the Association of Schools and Colleges of Optometry for fifteen selected applicants intending to pursue careers in optometric academia.  
Washington University Medical Center, St. Louis, MO.

**PUBLICATIONS**

**PEER REVIEWED PUBLICATIONS**

**In Preparation**

1. **Mocko J.A.**, Wei Y., Frishman L.J., Otteson, D.C., Couroucli X.I., (2018) Effects of high dose vitamin A supplementation on a rat model of oxygen induced retinopathy, *Investigative Ophthalmology & Vision Science.* Expected submission: Summer 2018.

**In Review**

1. Vemaraju S, Nayak G, Buhr E.D., Odaka Y, Zhang K.X., **Mocko J.A.**, Smith A.N., Upton B.A., Zhan J.J., Borra V.J., Bernhard E., Murakami K., Nguyen M.T., Gordon S.A., Wu G., Schmidt R., Mei X., Petts N.T., Batie M., Rao S., Hogenesch J.B., Nakamura T., Van Gelder R.N., Lang R.A. (2018) A light-opsin 3 pathway in adipocytes regulates the circadian clock and neonatal energy balance, *Nature.* Currently in review.

**Published**

1. Mao C.A., Agca C., **Mocko-Strand J.A.**, Wang, J., Ulrich-Lüter**,** E, Pan P., Wang S.W., Arnone M.I., Frishman L.J., Klein W.H., (2016) Substituting Mouse Transcription Factor Pou4f2 with a Sea Urchin Ortholog Restores Retinal Ganglion Cell Development, *Proceedings of Royal Society B: Biological Sciences.* 283(1826): 20152978.
2. Ciavatta V.T., **Mocko J.A.**, Kim M.K., Pardue, M.T., (2013) Subretinal electrical stimulation preserves inner retinal function in RCS rat retina., *Molecular Vision*. 19:995-1005. *Cited 7 times per Google Scholar, most recent citation in 2015.*
3. **Mocko J.A.**, Kim M., Faulkner A.E., Cao Y., Ciavatta V.T., Pardue M.T., (2011) Effects of subretinal electrical stimulation in mer-KO mice*. Investigative Ophthalmology and Vision Science*. 52(7):4223-30. *Cited 10 times, most recent citation in 2016.*
4. Akula J.D., Hansen R.M., Tzekov R., Favazza T.L., Vyhovsky T.C., Benador I.Y., **Mocko J.A.**, McGee D., Kubota R., Fulton A.B., (2010) Visual Cycle Modulation in Neurovascular Retinopathy. *Experimental Eye Research.* 91(2):153-61. *Cited 14 times, most recent citation in 2015.*
5. Akula J.D., Favazza T.L., **Mocko J.A.**, Benador I.Y., Asturias A.L., Kleinman M.S., Hansen R.M., Fulton A.B., (2009) The anatomy of the rat eye with oxygen-induced retinopathy. *Documenta Ophthalmologica*. 2009; 120(1):41-50. *Cited 21 times, most recent citation in 2016.*
6. Fulton A.B., Akula J.D., **Mocko J.A.**, Hansen R.M., Benador I.Y., Beck S.C., Fahl E., Seeliger M.W., Moskowitz A., Harris M.E., Retinal degenerative and hypoxic ischemic disease. *Documenta Ophthalmologica.* 118(1):55-61. *Cited 39 times, most recent citation in 2015.*
7. Akula J.D., **Mocko J.A.,** Benador I.Y., Hansen R.M., Favazza T.L., Vyhovsky T.C., Fulton A.B., (2008) The neurovascular relation in oxygen-induced retinopathy. *Molecular Vision*. 14:2499-508. *Cited 37 times, most recent citation in 2015.*
8. Hansen R.M., Eklund S.E., Benador I.Y., **Mocko J.A.**, Akula J.D., Liu Y., Martinez-Perez M.E., Fulton A.B., (2008) Retinal degeneration in children: Dark-adapted visual threshold and arteriolar diameter, *Vision Research*. 48(3):325-31. *Cited 15 times, most recent citation in 2015.*
9. Akula J.D., **Mocko J.A.**, Moskowitz A., Hansen R.M., Fulton A.B., (2007) The Oscillatory Potentials of the Dark-Adapted Electroretinogram in Retinopathy of Prematurity, *Investigative Ophthalmology and Visual Science*. 48(12):5788-97. *Cited 46 times, most recent citation in 2015.*

**CONFERENCE PROCEEDINGS**

**Refereed Proceedings, published abstracts**

1. **Mocko J.A.**, Wei Y., Frishman L.J., Otteson, D.C., Couroucli X.I., (2015) Relationships between neural and vascular parameters in a rat model of oxygen induced retinopathy (OIR); effects of high dose vitamin A (HDVA) treatment. *Optom Vis Sci.* 92: E-Abstract 155001. (paper presentation)
2. **Mocko-Strand J.A.**, Wei Y., Frishman L.J., Otteson, D.C., Couroucli X.I., (2015) Effects of high dose vitamin A supplementation on retinal thickness in a rat model of oxygen induced retinopathy (OIR). *Invest Ophthalmol Vis Sci.* 56:3387 ARVO E-Abstract (poster presentation)
3. **Mocko-Strand J.A.**, Wei Y., Frishman L.J., Otteson, D.C., Couroucli X.I., (2014) Vascular endothelial growth factor A and hypoxia inducible factor 1α mRNA expression with vitamin A treatment in oxygen induced retinopathy (OIR). *Optom Vis Sci.* 91: E-Abstract 145315. (poster presentation)
4. **Mocko-Strand J.A.**, Wei Y., Frishman L.J., Otteson, D.C., Couroucli X.I., (2014) High dose vitamin A supplementation reduces proangiogenic gene expression in a rat model of oxygen induced retinopathy (OIR). *Invest Ophthalmol Vis Sci.* 55:5379 ARVO E-Abstract. (poster presentation)
5. **Mocko J.A.**, Wei Y., Frishman L.J., Couroucli X.I., (2013) Effects of vitamin A on a rat model of retinopathy of prematurity. *Invest Ophthalmol Vis Sci.* 54:5079 ARVO E-Abstract. (poster presentation)
6. Akula J.D., Moskowitz A., Pardue M.T., Iuvone P.M., **Mocko J.A.**, Hansen R.M., Fulton A.B., (2010) Refraction in an Oxygen-Induced Retinopathy (OIR) Rat Model of Retinopathy of Prematurity (ROP): Is the "ROP Rat" a Good Model? *Invest Ophthalmol Vis Sci.* 51: ARVO E-Abstract 4477. (poster presentation)
7. Ciavatta V.T., Kim M.K., Cao Y., Aung M.H., **Mocko J.A.**, Pardue M.T., (2010) Effect of Subretinal Electrical Stimulation Dose on Growth Factor Expression in RCS Rat Retinae. *Invest Ophthalmol Vis Sci.* 51: ARVO E-Abstract 4513. (poster presentation)
8. **Mocko J.A.**, Ciavatta V.T., Kim M.K., Aung M.H., Pardue M.T., (2010) Effects of different treatment regimens of subretinal electrical stimulation on the retinal function in RCS rat retinae. *Invest Ophthalmol Vis Sci.* 51: ARVO E-Abstract 4518. (poster presentation)
9. Kim M.K., **Mocko J.A.**, Olson D.E., Thule P., Pardue M.T., Barnes C.S., (2010) Electroretinogram Changes With Scotopic Stimuli in Retinas of Diabetic Patients With and Without Retinopathy. *Invest Ophthalmol Vis Sci.* 51: ARVO E-Abstract 4685. (poster presentation)
10. **Mocko J.A**., Favazza T.L., Benador I.Y., Hansen R.M., Fulton A.B., Akula J.D., (2009) Temporal course of VEGF mRNA and protein expression in a rat model of retinopathy of prematurity. *Invest Ophthalmol Vis Sci.* 50: ARVO E-Abstract 3120. (poster presentation)
11. Favazza T., Benador I.Y., **Mocko J.A**., Vyhovsky T.C., Hansen R.M., Fulton A.B., Akula J.D., (2009) Anatomical and histological features in rat models of retinopathy of prematurity. *Invest Ophthalmol Vis Sci.* 50: ARVO E-Abstract 3125. (poster presentation)
12. **Mocko J.A**., Akula J.D., Benador I.Y., DiNardo, A., Hansen R.M., Fulton, A.B. (2008) Expression of ‘neural’ growth factors directs angiogenesis early in the course of ROP. *Invest Ophthalmol Vis Sci.* 49: ARVO E-Abstract 2633. (poster presentation)
13. Akula J.D., Asturias A.L., Dagi A.R., **Mocko J.A**., Hansen R.M., Martinez-Perez M.E., Fulton A.B., (2007) Do the rod photoreceptors and other retinal neurons predict vascular outcome in ROP? *Invest Ophthalmol Vis Sci.* 48: ARVO E-Abstract 4060. (poster presentation)

**PLATFORM PRESENTATIONS**

**CONFERENCE PRESENTATIONS**

2016. *Effects of vitamin A on a rat model of retinopathy of prematurity (ROP).* University of Houston, College of Optometry Annual Research Showcase, Houston, TX. (poster presentation).

2015. *Relationships between neural and vascular parameters in a rat model of oxygen induced retinopathy (OIR); effects of high dose vitamin A (HDVA) treatment.* American Academy of Optometry Annual Meeting, New Orleans, LA. (paper presentation)

2015. *Effects of high dose vitamin A supplementation on retinal thickness in a rat model of oxygen induced retinopathy (OIR).* Association for Research in Vision and Ophthalmology Annual Meeting, Denver, CO. (poster presentation)

2015. *Vascular endothelial growth factor A and hypoxia inducible factor 1α mRNA expression with vitamin A treatment in oxygen induced retinopathy (OIR).* University of Houston, College of Optometry Annual Research Showcase, Houston, TX. (poster presentation).

2014. *Vascular endothelial growth factor A and hypoxia inducible factor 1α mRNA expression with vitamin A treatment in oxygen induced retinopathy (OIR).* American Academy of Optometry Annual Meeting, Denver, CO. (poster presentation)

2014. *High dose vitamin A supplementation reduces proangiogenic gene expression in a rat model of oxygen induced retinopathy (OIR).* Association for Research in Vision and Ophthalmology Annual Meeting, Orlando, FL. (poster presentation)

2013. *Effects of vitamin A on a rat model of retinopathy of prematurity (ROP).* Association for Research in Vision and Ophthalmology Annual Meeting, Seattle, WA. (poster presentation)

2010. *Effects of different treatment regimens of subretinal electrical stimulation on the retinal function in RCS rat retinae.* Association for Research in Vision and Ophthalmology Annual Meeting, Ft. Lauderdale, FL. (poster presentation)

2009. *Temporal course of VEGF mRNA and protein expression in a rat model of retinopathy of prematurity.* Association for Research in Vision and Ophthalmology Annual Meeting, Ft. Lauderdale, FL. (poster presentation)

2008. *Expression of ‘neural’ growth factors directs angiogenesis early in the course of ROP.* Association for Research in Vision and Ophthalmology Annual Meeting, Ft. Lauderdale, FL. (poster presentation)

**INVITED PLATFORM PRESENTATIONS**

2016. *Effects of High-Dose Vitamin A Supplementation on Neurovascular Development of the Retina in a Rat Model of Retinopathy of Prematurity.* Cincinnati Children’s Hospital Medical Center, Department of Pediatric Ophthalmology, Division of Chronobiology and Developmental Biology, Cincinnati, OH (research seminar)

2012. *Research in Optometry – Optometry Summer Research Program Round Table Discussion.* College of Optometry, University of Houston, Houston, TX. (panelist)

2010. *Advanced Electroretinography (ERG) Analysis Techniques.* Emory Eye Center, Department of Ophthalmology, Emory University, Atlanta, GA. (research seminar)

2010. *The rates of neural retinal degeneration in two rodent models of retinitis pigmentosa implanted with an artificial silicone retina.* Emory Eye Center, Department of Ophthalmology, Emory University, Atlanta, GA. (research seminar)

**GRANT FUNDING**

1. **Houston Area Vision Training Grant**, Sponsor: Ruth L. Kirschstein-National Service Research Award, 5T32EY007024-32;   
   SC Massey, PI. Dates: 5/1/2013 – 4/30/2017  
   Title: *High Dose Vitamin A Supplementation and Retinopathy of Prematurity: Effects and Mechanism.*Role: Pre-doctoral Trainee.

Annual award amount: $26,463.

1. **Student Vision Research Support Grant**, Sponsor: University of Houston College-based Grants Program

JA Mocko, PI. Dates: 5/16/2013–12/31/2013

Title: *The effects of vitamin A treatment on two rat models of retinopathy of prematurity (ROP).*

Role: Principal Investigator.

Award amount: $2,500.

1. **Student Vision Research Support Grant**, Sponsor: University of Houston College-based Grants Program

JA Mocko, PI. Dates: 5/16/2012–12/31/2012

Title: *The effect of eliminating inward rectifying potassium channels (Kir4.1) in Müller glia in generating the dark-adapted ERG of the mouse.*

Role: Principal Investigator.

Award amount: $6,500.

1. **Student Summer Fellowship,** Sponsor: Fight for Sight, Anne Fulton, PI.

JA Mocko. Dates: 5/1/2007- 9/1/2007

Title: *The molecular basis for neurovascular abnormalities in retinopathy of prematurity.*

Role: Undergraduate student researcher.

Award amount: $2,500.

**PROFESSIONAL SERVICE**

**SERVICE TO THE UNIVERSITY OF HOUSTON**

**College of Optometry, UH**

2011-2016 Host/Student Interviewer for Physiological Optics Graduate Program Admissions

2014-2015 President of the Physiological Optics Graduate Student Association (POGSA)

2014-2015 Officer and Founding Member of Women and Young Scientists in Eye Research (WYSER)

**SERVICE TO THE PROFESSION**

**Assistant Peer Reviewer for Scientific Journals**

*Investigative Ophthalmology & Visual Science*

**Student Volunteer, Optical Society of America**

*Fall 2013 Meeting, Houston, TX*