

Eric S. Seemiller, PhD

Contact Information

Eric.seemiller@gmail.com
(814) 215-8439

Indiana University School of Optometry
800 East Atwater Ave
Bloomington, IN, 47405

Current Appointment

2019 - Research Associate, Indiana University School of Optometry - Borish Center for Ophthalmic Research, Clinical Optics Research Lab

Previous Appointments

2018 – Postdoctoral Fellow, University of Texas at Austin - Center for Perceptual Systems

Education

2017 – PhD – Vision Science and Physiological Optics, Indiana University
Dissertation: *Disparity-Driven Eye Movements in Young Infants*
Advisor: T. Rowan Candy
2011 – MA – Anthropology, Kent State University
2009 – BS – Biological Anthropology, Penn State University

Expertise

Programming: MATLAB, Psych Toolbox, R, SPSS, Minitab
Methods: Visual psychophysics, perceptual neuroscience, eye-tracking, image analysis, wavefront analysis, photorefraction, optical modelling, computational modelling
Statistical Methods: Univariate & multivariate hypothesis testing, data mining and machine learning, natural image processing, regression, spatial statistics

Eric S. Seemiller, PhD

Publications

Sebastian S*, Seemiller ES*, Geisler WG. (In prep). Local reliability weighting explains identification of partially-masked objects in natural images. *Proceedings of the National Academy of Sciences*.

Meier K, Sell D, Seemiller ES, Giaschi D, Wilcox LM, Candy TR. (In prep). The typical relationship between eye alignment and binocular single vision in early childhood in humans. *Proceedings of the National Academy of Sciences*.

Seemiller ES, Port NL, Candy TR. (2018). The gaze stability in 4- to 10-week-old infants. *Journal of Vision* 18(8):15, doi:10.1167/18.8.15.

Seemiller ES, Cumming BG, Candy TR. (2018). Human infants can generate vergence responses to retinal disparity by 5- to 10-weeks of age. *Journal of Vision* 18(6):17, doi:10.1167/18.6.17.

Seemiller ES, Wang J, Candy TR. (2016). Vergence sensitivity in 5- to 10-week-old infants. *Journal of Vision* 16(3):20, 1-12, doi:10.1167/16.3.20.

Seemiller ES, Thibos LN, Candy TR. (In prep). The potential for binocular image alignment in the human infant visual system.

*- Co-first author

Conference Presentations

Seemiller ES, Bradley A, Kollbaum PS (2019). Optical manipulations effecting blur detection in one or both eyes. *OSA Fall Vision Meeting*. Washington, DC. Poster.

Seemiller ES, Geisler WS (2019). Reliability-Weighted Template Matching Predicts Human Detection Performance in Natural Scenes. *Vision Sciences Society*. St. Pete Beach, FL. **Presented Paper**.

Seemiller ES, Sebastian SP, Geisler WS (2018). Local reliability weighting predicts trial-by-trial responses in a natural detection task. *OSA Fall Vision Meeting*. Reno, NV. **Presented Paper**.

Geisler WS, Sebastian SP, Seemiller ES (2018). Decision-variable Correlation. *Vision Sciences Society*. St. Pete Beach, FL. Poster.

Seemiller ES, Candy TR (2017). Vergence responses to changing disparity in 5 to 10 week old human infants. *Vision Sciences Society*. St. Pete Beach, FL. Poster.

Downey CO, Pace GC, Seemiller ES, Candy TR, Cormack LK (2017). Dynamic characteristics of 5 to 22 week-old infants' accommodation and vergence

Eric S. Seemiller, PhD

- tracking responses. *Vision Sciences Society*. St. Pete Beach, FL. Poster.
- Seemiller ES, Port NL, Candy TR (2016). The stability of fixation in depth in 5-10-week-old infants. *Vision Sciences Society*. St. Pete Beach, FL. **Presented Paper**.
- Candy TR, Seemiller ES, Downy CO, Cormack LK (2016). Infants' Dynamic Accommodation and Vergence Tracking of an Unpredictable Stimulus. *Vision Sciences Society*. St. Pete Beach, FL. Poster.
- Meier K, Giaschi D Wilcox LM, Seemiller ES, Candy TR (2016). Vergence responses to fine and coarse disparities: Adult-like tuning functions at 5 years of age. *Vision Sciences Society*. St. Pete Beach, FL. Poster.
- Seemiller ES, Candy TR (2015). Vergence sensitivity in 5-10 week old infants. *Vision Sciences Society*. St. Pete Beach, FL. **Presented Paper**.
- Candy TR, Babinsky E, Roberts T, Manh V, Seemiller ES, Wu Y, Lyon D (2015). Cues for accommodation and vergence in infancy and early childhood. *Vision Sciences Society*. St. Pete Beach, FL. Poster
- Seemiller ES, Wang J, Candy TR (2014). The sensitivity of vergence eye movements in young infants. *OSA Fall Vision Meeting*. Philadelphia, PA. Poster.
- Seemiller ES, Candy TR (2013). Interocular correlations between human retinal images at six weeks of age. *OSA Fall Vision Meeting*. Houston, TX. Poster.
- Seemiller ES, Candy TR (2013). The retinal information available to drive vergence in young infants. *Child Vision Research Society*. Waterloo, ON. **Presented Paper**.
- Seemiller ES, Teel DF, Babinsky EE, Roberts TL, Candy TR (2012). The influence of accommodation and vergence coupling during visual development. *Vision Sciences Society*. Naples, FL. Poster.
- Babinsky E, Roberts T, Seemiller ES, Candy TR (2012) Accommodation and vergence: comparing 3- month-old infant responses to oculomotor model performance. *Vision Sciences Society*. Naples, FL. Poster.

Eric S. Seemiller, PhD

Invited and Intramural Talks

Local masking properties of natural scenes. *Oxyopia Seminar*. Bloomington, IN. September 6, 2019.

Typical Monocular and Binocular Development in Young Infants. Akron Children's Hospital. Akron, OH. July 24, 2018.

Vergence stability in 5-10-week-olds. *Oxyopia Seminar*, Indiana University School of Optometry. Bloomington, IN. March 7, 2016.

Preliminary evidence of disparity driven eye movements in 5-10-week-old infants. *Development Seminar*, Indiana University Psychological and Brain Sciences. Bloomington, IN. October 20, 2015.

The sensitivity of vergence eye movements in 5-10-week-old infants. *Oxyopia Seminar*, Indiana University School of Optometry, Bloomington, IN. February 6, 2015.

The retinal information available to drive vergence in human infants. *Oxyopia Seminar*, Indiana University School of Optometry. Bloomington, IN. September 13, 2013.

Continuing Education Lectures

The Early Development of the Near Response in Humans. Bloomington, IN. August 11, 2019, 2 Hours.

Teaching Experience

V-768 Statistics for Vision Science – Instructor, Fall 2014
Indiana University School of Optometry

OPT-574 Intro to Epidemiology & Research Methods – Associate Instructor, 2011-2015
Indiana University School of Optometry
Instructor: William Swanson

OPT-889 Special Projects Course – Associate Instructor, 2011-2015
Indiana University School of Optometry
Instructor: William Swanson

ANTH 18631 Issues in Human Evolution – Instructor, 2009-2011
Kent State University Anthropology Department

ANTH 48835 Primate Ecology & Conservation – Associate Instructor, Spring 2011
Kent State University Anthropology Department

Eric S. Seemiller, PhD

ANTH 18630 Intro to Human Evolution – Associate Instructor, 2009-2010

Kent State University Anthropology Department

Instructors: Chi-hua Chiu, Marilyn Norconk, Cynthia Thompson

Awards, Grants and Recognition

2016 – Best Associate Instructor Award. Indiana University School of Optometry.

2015 – Accepted to Cold Spring Harbor Laboratory Course “Vision: Linking Circuits Perception and Behavior.” Tuition stipend awarded (\$1750).

2014 – President of IUSO Graduate Student Organization

2010 – Kent State University Graduate Student Society International Travel Grant (\$1000).

Professional Memberships and Journal Reviews

Vision Sciences Society (2011-present)

American Academy of Optometry (2012-Present)

Journal of Vision – Ad hoc reviewer

Investigative Optometry and Vision Science – Ad hoc reviewer

Field Research Experience

2010 – *Guanacaste, Costa Rica*: research on a population of mantled howling monkeys (*Alouatta palliata*). Participated in census data collection (including assistance with darting). Observed feeding behavior, measured ranging patterns with GPS, marked and mapped feeding and sleeping trees.

Updated: Sep 3, 2019