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Education

2011 — Ph.D., McMaster University, Psychology, Neuroscience & Behaviour

2001 — Hon. B.Sc. with Distinction, University of Toronto

Current position

Assosciate Professor of Optometry
New England College of Optometry
Department of Vision Science
July 2018 to the Present

Post-doctoral Experience

1. NIH Postdoctoral Fellow
   New England College of Optometry, Department of Biomedical Science and Disease
   Supervisor: Frances Rucker
   June 2015 to June 2018

2. Postdoctoral Research Scientist
   University of Reading, School of Psychology and Clinical Language Sciences
   Centre for Integrative Neuroscience and Neurodynamics
   Supervisor: Bhismadev Chakrabarti
   September 2013 to June 2015

3. NIH Postdoctoral Fellow
   Harvard Medical School, Department of Ophthalmology
   Schepens Eye Research Institute
   Supervisor: Peter J. Bex
   March 2011 to September 2013

Publications: under-revision

1. Taylor, C.P. & Hogue, W. Individual differences in ON- versus OFF-contrast pattern detection and identification in Axial Myopia. (2025)

2. Taylor, C.P. & Rucker, F.J. Altering emmetropization with visual noise. (2024)

Publications

1. Rucker F.J., Taylor C.P., Kaser-Eichberger A., Schroedl F. Parasympathetic and sympathetic control of emmetropization in chick. (2023) *Experimental Eye Research*. May 24:109508. [full-text]

2. Nickla D.L., Wang X., Rucker F., Chen W., Taylor C.P. Effects of morning or evening monochromatic blue light on the compensation to lens-induced hyperopic defocus in chick. (2023) *Optometry and Vision Science* Jan 1;100(1):33-42. [full-text]

3. Rucker F., Taylor C.P., Kaser-Eichberger A., Schroedl F. Parasympathetic innervation of emmetropization. (2022) *Experimental Eye Research*. [full-text]

4. Nickla D.L., Rucker F., Taylor C.P., Sarfare S., Chen W., Elin-Calcador J., Wang X. Effects of morning and evening exposures to blue light of varying illuminance on ocular growth rates and ocular rhythms in chicks. (2022) *Experimental Eye Research*.217:108963. [full-text]

5. Yoon H., Taylor C.P., Rucker F. Spectral composition of artificial illuminants and their effect on eye growth in chicks. (2021) *Experimental Eye Research*. 207:108602. [full-text]

6. Lewandowski, C., Andrea, T. & Taylor, C.P. (2021). Student Perceptions of Cultural Competency. *Optometric Education*, 46(2). [full-text]

7. Watts N.S., Taylor C.P., & Rucker F.J. (2020). Temporal color contrast guides emmetropization in chick. *Experimental Eye Research*, Nov 3:108331. [full-text, not open access]

8. Rucker, F.J., Eskew, R.T., & Taylor, C.P. (2020). Signals for defocus arise from longitudinal chromatic aberration in chick. *Experimental Eye Research*, 198, 108-126. [full-text, not open access]

9. Meyer, D.L., Taylor, C.P., & Kran, B.S. (2020). A new contrast sensitivity test for pediatric patients: Feasibility and inter-examiner reliability in ocular disorders and cerebral visual impairment. *Translational Vision Science and Technology*. 9(30), 1-10. [full-text]

10. Lin, G., Taylor, C., & Rucker, F. (2020). Effect of duration, and temporal modulation, of monochromatic light on emmetropization in chicks. *Vision Research*, 166, 12-19. [full-text]

11. Srinivasan, G., Russo, D., Taylor, C., Guarino, A., Tattersall, P., & Moore, B. (2019). Validity of the Spot Vision Screener in detecting vision disorders in children 6 months to 36 months of age. Journal of American Association for Pediatric Ophthalmology and Strabismus, 23(5), 278-e1. [full-text]

12. Rucker, F.J., Britton, S., & Taylor, C.P. (2018). Color and Temporal Frequency Sensitive Eye Growth in Chick. *Investigative Ophthalmology and Vision Science, 59*, 6003-6013. [full-text]

13. Taylor, C.P., Shepard, T., Rucker, F.J., & Eskew, R.T. (2018). Sensitivity to S-cone Stimuli and the Development of Myopia. *Investigative Ophthalmology and Vision Science, 59*, 4622-4630. [full-text]

14. Chakrabarti, B., Haffey, A., Canzano, L., Taylor, CP, & McSorley, E. (2017). Individual differences in responsivity to social rewards: Insights from two eye-tracking tasks. *PLOS ONE*, 12, 1-13. [full-text]

15. Rucker, F.J., Henriksen, M., Yanase, T., & Taylor, C.P. (2017). Temporal Frequency and Temporal Contrast as Emmtropization Cues. *Vision Research* [full-text]

16. Taylor, C.P. & Bex, P.J. (2015) On the number of perceivable blur levels in naturalistic images. *Vision Research*, 115A, October 2015, 142. [full-text]

17. Taylor, C.P., Bennett, P.J. Sekuler, A.B. (2014). Evidence for adjustable bandwidth orientation channels. *Frontiers in Perception Science*. June, 2014. [full-text]

18. Feke, G.T., Bex, P.J., Taylor, C.P., Rhee, D.J., Turalba, A.V., Chen, T.C., Wand, M. & Pasquale, L.R. (2014). Effect of Brimonidine on Retinal Vascular Autoregulation and Short-Term Visual Function in Normal Tension Glaucoma. *American Journal of Ophthalmology, 158(1)*, 105-112. [full-text]

19. Wallis, T.S.A, Taylor, C.P., Wallis, J., Jackson, M.L. & Bex, P.J. (2014). Characterisation of field loss based on microperimetry is predictive of face recognition difficulties. *Investigative Ophthalmology and Vision Science, 55(1)*, 142-153. [full-text]

20. Elze, T.E., Taylor, C.P., Bex, P.J. (2013). An Evaluation of Organic Light Emitting Diode Monitors for Medical Applications: Great Timing, but luminance artifacts. *Medical Physics, 40, (9)*. [full-text]

21. Govenlock, S.W., Taylor, C.P. Sekuler, A.B., Bennett, P.J. (2010). The effect of aging on the spatial frequency selectivity of the human visual system, *Vision Research, 50, (17)*, 1712-1719. [full-text]

22. Taylor, C.P, Bennett, P.J. Sekuler, A.B. (2009). Spatial frequency summation in visual noise. *Journal of the Optical Society of America A, 26*(11), B84-B93. [full-text]

23. Govenlock, S.W., Taylor, C.P., Sekuler, A.B., & Bennett, P.J. (2009). The effect of aging on the orientational selectivity of the human visual system. *Vision Research, 49(1)*, 164-72. [full-text]

24. Betts, L.R., Taylor, C.P., Sekuler, A.B., & Bennett, P.J. (2005). Aging reduces centre-surround antagonism in visual motion processing. *Neuron, 45*, 361-366. [full-text]

Publications: pre-prints

1. Taylor, C.P., Bennett, P.J., & Sekuler, A.B. (2015). The categorical perception of relative spatial phase. [full-text].
2. Taylor, C.P. & Bex, P.J. (2015). Perceived blur in natural scenes both in the lab and online. [full-text].

Patents

1. Rucker, F. J., Yoon, H., & Taylor, C. P. (2021) Balanced cone excitation for controlling refractive error and ocular growth to inhibit development of myopia. U.S. Patent Application No. 11,110,292.

Professional Activities

Editorial Board Member, Current Eye Research (Reviewing Editor)

Reviewer: Journal of Vision, Optica, PLoS Computational Biology, Perception, Vision Research, Experimental Eye Research, Biochemical and Biophysical Research Communications, Cortex, Canadian Journal of Experimental Psychology

Member: Association for Research in Vision and Ophthalmology, Vision Sciences Society

Conference Presentations

Taylor CP, Gawne T, Norton TT, She Z (2024) Does chromatically simulated myopic blur for the tree shrew counteract a myopiagenic environment in the chicken? *Investigative Ophthalmology & Visual Science* 65(10).

Manshul Nagpaul, Christopher Patrick Taylor, Xia Carlstedt, Frances J. Rucker, Debora L. Nickla (2024) Disruptions of emmetropization via targeted spectral and temporal modulation of evening light exposure *Investigative Ophthalmology & Visual Science* 65(10).

Detection of Image Blur across Eccentricities and Real Depth Planes in a Projection Augmented Reality System

Russo D, Taylor C. (2023) Variables impacting receipt of glasses and ophthalmology referral care for an unhoused population in Boston. In APHA 2023 Annual Meeting and Expo 2023.

Nickla DL, Wang X, Zhang L, Taylor CP, Watson A, Stone RA, Dixon J, Iuvone PM. (2023) Evening blue light exposure stimulates eye growth and reduces the vitreal DOPAC rhythm. *Investigative Ophthalmology & Visual Science* 64(8):838.

Nickla DL, Chen W, Taylor CP, Barrau C, Villette T, Baranton K, Rucker FJ. (2021) Wearing blue-green blocking lenses in the evening inhibits ocular growth rate in chicks. *Investigative Ophthalmology & Visual Science* 62(8):1381.

Hogue, W., Taylor, C.P. (2020) Axial length is associated with individual differences in ON- and OFF-pattern detection. *Investigative Ophthalmology & Visual Science* 62(8), 2894-2894.

Nickla, D.L., Chen, W., Elin-Calcador, J., Su B., Taylor, C.P., Rucker, F.J. (2020) Varying effects of high intensity blue and white light on eye growth and lens-induced myopia, and influences of time-of-day. Investigative Ophthalmology & Visual Science, 61(7), 3407-3407.

Taylor, C., Lin, G., Watts, N., & Rucker, F. J. (2019). Species differences in emmetropization under monochromatic light rearing. Investigative Ophthalmology & Visual Science, 60(9), 3160-3160.

Kaser-Eichberger, A., Platzl, C., Taylor, C., Trost, A., Strohmaier, C., Bogner, B., Runge, C., Bruckner, D., Reitsamer, H., Rucker, F.J. & Schroedl, F., 2019. Influence of light and autonomic innervation on growth factor expression in chick choroid. Investigative Ophthalmology & Visual Science, 60(9), pp.5880-5880.

Elin-Calcador, J., Sarfare, S., Taylor, C., Rucker, F. J., & Nickla, D. L. (2019). Blue light in the evening stimulates ocular growth and alters ocular rhythms in chicks. Investigative Ophthalmology & Visual Science, 60(9), 3154-3154.

Kosteva, K. L., Lilienthal, R. A., Rozema, J. J., Taylor, C., & Rio, D. (2019). Influence of Wavefront Aberration Order on Vision Prediction and Correction. Investigative Ophthalmology & Visual Science, 60(9), 596-596.

Taylor, C.P., & Rucker, F.J. (2018). Dynamic chromatic noise promotes eye-growth. *Presented at the ARVO annual meeting in Honaluli, HI, May, 2017* [abstract]

Taylor, C.P., Leippman, B., & Rucker, F.J. (2017). Dynamic noise promotes eye-growth. *Presented at the ARVO annual meeting in Baltimore, MD, May, 2017* [abstract]

Taylor, C.P., Leippman, B., Rucker, F.J. (2016). Imaging and cross-validation of chick choroid changes with spectacle lens wear using OCT. *Presented at the ARVO annual meeting in Seattle, WA, May, 2016.*

Henriksen, M., Yanase, T., Taylor, C.P., & Rucker, F.J. (2016). Temporal Frequency and Temporal Contrast as Emmtropization Cues. *Presented at the ARVO annual meeting in Seattle, WA, May, 2016.*

Shepard, T., Taylor, C.P., Rucker, F.J., & Eskew, R. (2016). Sensitivity to Incremental S-cone Stimuli and the Development of Myopia. *Presented at the ARVO annual meeting in Seattle, WA, May, 2016.*

Elze, T.E., Taylor, C.P., & Bex, P.J. (2012). Organic light-emitting diode monitors in vision science European Conference on Visual Perception, Alghero, Italy. *Perception, 41, ECVP Abstract Supplement*, 89. [abstract]

Taylor, C.P. & Bex, P.J. (2012). Perceived blur is integrated locally in natural images. Asia-Pacific Conference on Vision *Journal of Vision, 11(15)*, 13. [abstract]

Taylor, C.P. & Bex, P.J. (2011). Efficient integration of local perceived blur in discrimination and matching. Optical Society of America Meeting, Seattle, WA. *Journal of Vision, 11(15)*, 13. [abstract]

Taylor, C.P. & Murray, R.F. (2009). Group classification images and visual attention. York Centre for Vision Research Conference on Vision in 3D Environments. Toronto, Ontario, June 23-26, 2009.

Taylor, C.P. & Murray, R.F. (2008). Classification images reveal the effect of visual attention on shape discrimination. Annual Meeting of the Canadian Society for Brain Behaviour and Cognitive Science, University of Western Ontario, London, ON. [abstract]

Christensen, B.K., King, J.P., Barr, M. Daskalakis, Z.J, Taylor, C.P., Bennett, P.J., Sekuler, A.B. & R.P. Zipursky. (2007). Poor Orientation Tuning: Implications for GABA Mediated Neural Inhibition Deficits in the Visual Cortex of Patients with Schizophrenia. American College of Neuropsychopharmacology, Boca Raton, FL.

Taylor, C.P., Bennett, P.J., & Sekuler, A.B. (2006). Narrow-band channels optimally sum a broad band of spatial frequency information. Vision Sciences Society Conference, Sarasota, FL. *Journal of Vision, 6(6)*, 115. [abstract]

Bennett, P.J., Taylor, C.P., & Sekuler, A.B. (2006). Preservation of position-encoding mechanisms across the life span. Vision Sciences Society Conference, Sarasota, FL, *Journal of Vision, 6(6)*, 106. [abstract]

Govenlock, S.W., Taylor, C.P., Sekuler, A.B., & Bennett, P.J. (2006). Orientation tuning channels in old and young observers. Vision Sciences Society Conference, Sarasota, FL. *Journal of Vision, 6(6)*, abstract 196. [abstract]

Taylor, C.P., Bennett, P.J., & Sekuler, A.B. (2005). Noise detection: summation of high spatial frequency information. Vision Sciences Society Conference, Sarasota, FL. *Journal of Vision, 5(8)*, abstract 482. [abstract].

Taylor, C.P., Bennett, P.J., & Sekuler, A.B. (2004). Noise detection: Optimal summation of orientation information. Vision Sciences Society Conference, Sarasota, FL. *Journal of Vision, 4(8)*, 50. [abstract]

Betts, L.R., Taylor, C.P., Bennett, P.J., Sekuler, & Sekuler, A.B. (2004). Evidence for reduced inhibition in the aging visual system revealed by a motion discrimination task. Vision Sciences Society Conference, Sarasota, FL. *Journal of Vision, 4(8)*, 206. [abstract]

Betts, L.R., Taylor, C.P., Sekuler, A. B., & Bennett, P. J. (2004). Reduced inhibition in the aging human visual cortex facilitates coarse motion direction discrimination. Meeting of the Society for Neuroscience, San Diego, CA.

Taylor, C.P., Bennett, P.J., & Sekuler, A.B. (2003). Noise detection: bandwidth uncertainty and adjustable channels. Annual Vision Sciences Society Conference, *Journal of Vision, 3(9)*, 9. [abstract]

Taylor, C.P., Bennett, P.J., & Sekuler, A.B. (2000). The categorical perception of relative spatial phase. *Investigative Ophthalmology and Visual Science Supplement, 41*.

Taylor, C.P., Sekuler, A.B., & Bennett, P.J. (1999). The temporal properties of modal and amodal completion in noise. *Investigative Ophthalmology and Visual Science Supplement, 40*.

Awards and Recognition

2020 - Emerging Vision Scientist (AEVR/NAEVR)
2003 - Vision Sciences Society Travel Award
2001 - Canadian Psychological Assoication - Honours Thesis Award

Teaching Experience

McMaster University

Assistant:

Cognition, David Shore & Lee Brooks, Spring 2002.

Perception Laboratory Course, David Shore, Spring 2003.

Behavioural Neuroscience Seminar, Allison Sekuler, Spring 2004.

Sensation and Perception, Kathryn Murphy, Fall 2002–Fall 2006.

Visual Neuroscience, Gautam Ullal, Spring 2006.

Applied Statistics for the Health Sciences, Geoff Norman, Fall 2006.

Instructor:

Sensation and Perception, Summer 2004.

New England College of Optometry

Guest Lecturer:

Anatomy (Hearing), Frances Rucker, Summer 2016.

Statistics, T-35 Seminar, Summer 2017.

Instructor:

Biostatistics and Experimental Desgin I/II, Fall 2016-Present.

Visual Development (Accelerated Program), Fall 2018-Present.

Development, Strabismus, and Amblyopia, Fall 2018-2019.

Visual Development, Summer 2020-Present.