

## *Curriculum Vita*

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### **Personal Information**

Born: August 21, 1954  
Atlanta, GA USA

### **Academic History**

1976. The University of the South, Sewanee, TN. B.S. in Psychology (with honors).
1980. Georgia Institute of Technology, Atlanta GA. M.S. in Psychology.
1983. Georgia Institute of Technology. Ph.D. in Psychology. Major field: Sensation and Perception. Minor field: Physiology. Ph.D. thesis: White-noise Analysis of Human Spatial Vision. (Thesis director: Edward J. Rinalducci).

### **Professional Experience**

- 2002- Professor of Psychology, Northeastern University.
- 1995-2002 Associate Professor of Psychology, Northeastern University.
- 1990-1995 Assistant Professor of Psychology, Northeastern University.
- 1986- 1990 Research Associate in Biomedical Physics, Harvard University.
- 1983-1986 National Eye Institute Postdoctoral Fellow (N.R.S.A.), Center for Human Information Processing, University of California at San Diego. (Sponsor: Robert M. Boynton).
- 1981-1983 Graduate Research Assistant, Georgia Institute of Technology. (Supervisor: Edward J. Rinalducci).

## Major Administrative Experience

- Chair, Department of Psychology, Northeastern University (7/2007 – 12/2009 )
- Acting Chair, Department of Psychology, Northeastern University (Fall semester, 2005 )
- Vice-Chair (2006), Grants Program Director (2003-2006), and Member of the Board, Melanoma Research Foundation (2002-2007).
- Co-Chair (with Wayne Knox, Lucent Technologies, Inc.), Annual Meeting of the Optical Society of America, 2000 (Providence, Rhode Island), and member of the Executive Committee of the Technical Council of OSA (1999-2000).
- Graduate Coordinator and Chair of the Graduate Committee, Department of Psychology, Northeastern University (June 1995- May 1997).
- Chair of the Vision and Color Division, and member of the Executive Committee of the Technical Council, Optical Society of America (1994-1996).

## Awards and Honors

- Palmer Lecturer, Colour Group of Great Britain, 2017
- Robert M. Boynton Lecturer, Vision and Color Group of the Optical Society of America, 2001
- Phi Kappa Phi, 2001-
- Fellow of the Optical Society of America, 2000
- Distinguished Teacher Award, Department of Psychology, Northeastern University, 1991.
- Monie A. Ferst Award for Ph.D. thesis in Science 1984-1985, awarded by the Georgia Tech chapter of Sigma Xi, June 1985.

## Grants

- National Eye Institute, "Cone Sensitivity to Temporal Changes in Color and Luminance and the Development of Myopia", R01EY023281, 12/4/2014-11/31/2019 (Co-Investigator; F. Rucker, New England College of Optometry, Principal Investigator).
- National Science Foundation, "Understanding Higher Order Color," BCS-1353338, 2/1/2014- 1/31/2017 (in a no-cost extension until 1/31/2018).
- Northeastern University, "Visual impairment and rehabilitation: Personality characteristics associated with outcome success ", Tier 1 Grant, 7/1/2012-6/30/2013. Co-PI (PI: Randall Colvin).
- National Eye Institute, "Post-receptor color channels, R01 EY09712 (a "First" Award, R29 EY09712, for the initial funding period), 1993-2004.
- Northeastern University, "Color appearance and detection", Research and Scholarship Development Fund, 1993.
- Air Force Office of Sponsored Research, "The effects of luminance boundaries on color perception", AFOSR-89-0304 (Co-investigator; Richard E. Kronauer, Harvard University, Principal Investigator). 1989-1992.

- National Eye Institute, "Limits of spatial integration of signals from blue cones," EY05728 (National Research Service Award, individual postdoctoral fellowship grant). 1983-1986.

## Publications

### Refereed Articles

- Shepard, T.G., Lahlaf, S., & Eskew, R.T., Jr. (in press) Labeling the lines: A test of a six mechanism model of detection.. Journal of Vision.
- Gabree, S.H., Shepard, T.G., & Eskew, R.T., Jr. (in press) Asymmetric high-contrast masking in S cone increment and decrement pathways. Vision Research.
- Shepard, T.G., Swanson, E.A., McCarthy, C.L., & Eskew, R.T., Jr. (2016) A model of selective masking in chromatic detection. Journal of Vision, 16(9), 1-17.
- Wang, Q., Richters, D.P., & Eskew, R.T. Jr. (2014) Noise masking of S-cone increments and decrements. Journal of Vision, 14(13):8; doi:10.1167/14.13.8
- Gao, X., Stine-Morrow, E.A.L., Noh, S.R., & Eskew, R.T. Jr . (2011) Visual noise disrupts conceptual integration in reading. Psychonomic Bulletin & Review, 18, 83-88.
- Livitz, G., Yazdanbakhsh, A., Eskew, R.T. Jr., & Mingolla, E. (2011) Perceiving opponent hues in color induction displays. Seeing and Perceiving, 24, 1-17.
- Eskew, R.T., Jr. (2009) Higher order color mechanisms: A critical review. Vision Research, 49, 2686-2704.
- Richters, D.P., & Eskew, R.T., Jr. (2009) Quantifying the effect of natural and arbitrary sensorimotor contingencies on chromatic judgments. Journal of Vision, 9(4):27 ; doi:10.1167/9.4.27
- Giulianini, F. & Eskew, R.T., Jr. (2007) Theory of chromatic noise masking applied to testing linearity of S cone detection mechanisms. Journal of the Optical Society of America A, 24, 2604-2621.
- Newton, J. R., & Eskew, R. T., Jr. (2003). Chromatic detection and discrimination in the periphery: a post-receptoral loss of color sensitivity. Visual Neuroscience, 20, 511-521.
- Eskew, R. T., Jr., Newton, J. R., & Giulianini, F. (2001). Chromatic detection and discrimination analyzed by a Bayesian classifier. Vision Research, 41, 893-901.
- Vaina, L.M., Cowey, A., Eskew, R., LeMay, M., & Kemper, T. (2001) Regional cerebral correlates of global motion perception: evidence from unilateral cerebral brain damage. Brain, 124, 310-321.
- McLellan, J.S., & Eskew, R.T., Jr. (2000) ON and OFF S-cone pathways have different long-wave cone inputs. Vision Research, 40, 2449-2465.
- Giulianini, F. & Eskew, R.T., Jr. (1998) Chromatic masking in the ( $\Delta L/L$ ,  $\Delta M/M$ ) plane of cone-contrast space reveals only two detection mechanisms. Vision Research, 38, 3913-3926.
- Wu, S., Burns, S.A., Elsner, A.E., Eskew, R. & He, J. (1997) Rapid sensitivity changes on flickering backgrounds: tests of models of light adaptation. Journal of the Optical Society of America A, 14, 2367-2378.

- Stromeyer, C.F. III, Ryu, A., Kronauer, R.E., Chaparro, A., & Eskew, R.T. Jr. (1995) Contribution of human long-wavelength and middle-wavelength cones to motion detection. Journal of Physiology, 485, 221-243.
- Eskew, R.T., Jr., Stromeyer, C.F. III and Kronauer, R.E. (1994) Temporal properties of the red-green chromatic mechanism. Vision Research, 34, 3127-3137.
- Eskew, R.T., Jr., Stromeyer, C.F. III and Kronauer, R.E. (1994). The time-course of the facilitation of chromatic detection by luminance contours. Vision Research, 34, 3139-3144.
- Chaparro, A., Stromeyer, C.F. III, Kronauer, R.E., & Eskew, R.T. Jr. (1994) Separable red-green and luminance detectors for small flashes. Vision Research, 34, 751-762.
- Picotte, C.J., Stromeyer III, C.F., & Eskew, R.T., Jr. (1994) The foveal color-match-area effect. Vision Research, 34, 1605-1608.
- Chaparro, A., Stromeyer, C.F. III,, Huang, E.P., Kronauer, R.E. & Eskew, R.T., Jr. (1993). Colour is what the eye sees best. Nature, 361, 348-350.
- Eskew, R.T., Jr., Stromeyer, C.F. III and Kronauer, R.E. (1992) The constancy of equiluminant red-green thresholds examined in two color spaces. Advances in Color Vision Technical Digest Series, (Optical Society of America) 4, 195-197.
- Stromeyer, C.F. III, Lee, J., & Eskew, R.T., Jr. (1992) Peripheral chromatic sensitivity for flashes: a post-receptoral red-green asymmetry. Vision Research, 32, 1865-1873.
- Eskew, R.T., Jr., Stromeyer, C.F. III, Picotte, C.J. & Kronauer, R.E. (1991) Detection uncertainty and the facilitation of chromatic detection by luminance contours. Journal of the Optical Society of America A, 8, 394-403.
- Stromeyer, C.F. III, Eskew, R.T., Jr., Kronauer, R.E., & Spillmann, L. (1991) Temporal phase response of the short-wave cone signal for color and luminance. Vision Research, 31, 787-803.
- Eskew, R.T., Jr. (1989) The gap effect revisited: Slow changes in chromatic sensitivity as affected by luminance and chromatic borders. Vision Research, 29, 717-729.
- Eskew, R.T., Jr., & Boynton, R.M. (1987) Effects of field area and configuration on chromatic and border discriminations. Vision Research, 27, 1835-1844.
- Boynton, R.M., Nagy, A.L., & Eskew, R.T., Jr. (1987) Similarity of normalized discrimination ellipses in the constant-luminance chromaticity plane. Perception, 15, 755-763.
- Nagy, A.L., & Eskew, R.T., Jr, & Boynton, R.M. (1987) Analysis of color discrimination ellipses in a cone excitation space. Journal of the Optical Society of America A, 4, 756-768.
- Boynton, R.M., Eskew, R.T., Jr., & Olson, C.X. (1985) Blue cones contribute to border distinctness. Vision Research, 25, 1349-1352.
- Rinalducci, E.J., Eskew, R.T., Jr., Hardwick, D, & Walker, J. (1985) Non-uniformities in transient adaptation I: Unrestricted background fields. Journal of the Illuminating Engineering Society, 12, 589-602.
- Eskew, R.T., Jr., Pace, M., & Rinalducci, E.J. (1984) Simple circuit for grating contrast adjustment. Behavior Research Methods, Instruments, & Computers, 16, 538-539.
- Gentry, G.D., & Eskew, R.T., Jr. (1984) Graded differential reinforcement: Response-dependent reinforcer amount. Journal of the Experimental Analysis of Behavior, 41, 27-34.

Eskew, R.T., Jr., & Riche, C.V. (1982) Pacing and locus of control in a simulated quality control task. Human Factors, 24, 411-415.

### Non-refereed Publications

- Eskew, R. T., Jr. (2008). Chromatic detection and discrimination. In R. H. Masland & T. D. Albright (Eds.), The senses: a comprehensive reference. (Vol. 2: Vision II., pp. 101-117). New York: Academic Press.
- Lu, Zhong-Lin, & Eskew, R.T. Jr. (2007) A Special Issue on the Applications of Signal Detection Theory to Visual Perception (editorial). Spatial Vision, 20, 1-4.
- Eskew, R.T., Jr. (2002) review of Nassau, K. The Physics and chemistry of color. The fifteen causes of color. Color Research and Application, 27, 377-378.
- Eskew, R.T., Jr., McLellan, J.S., & Giulianini, F. (1999) Chromatic detection and discrimination. In Gegenfurtner, K., & Sharpe, L.T. (Eds.), Color vision: from genes to perception. Cambridge: Cambridge University Press. Chapter 18: pp. 345-368.
- Eskew, R.T., Jr. (1995) review of Dialogues on Perception, by Bela Julesz. MIT: Cambridge, MA 1995. Optics & Photonics News, September 1995, 50-52.
- Eskew, R.T., Jr. (1994) review of Practical Color Measurement: A primer for the beginner, a reminder for the expert, by Anni Berger-Schunn. New York: Wiley, 1994. Optics & Photonics News, October, 62.
- Eskew, R.T., Jr. (1986) Information is in the eye of the beholder. Comment on: Sayre, K. M. Intentionality and information processing: An alternative model for cognitive science. Behavioral and Brain Sciences, 46, 144.

### Published Abstracts (refereed)

- Newton, J.R., & Eskew, R.T., Jr. (2001) Peripheral chromatic contrast sensitivity functions differ for S-cone increment, S-cone decrement, red and green patterns. Investigative Ophthalmology & Visual Science (Suppl.), 43, S97.
- Eskew, R.T., Jr. Newton, J.R., & McLellan, J.S. (2000) S-cone response dynamics studied using "time-locked psychophysics." Investigative Ophthalmology & Visual Science (Suppl.), 41, S101.
- Newton, J. R., & Eskew, R.T., Jr. (2000) Spatial integration differences for the detection of "red" and "green" in the periphery. Investigative Ophthalmology & Visual Science (Suppl.), 41, S810.
- Eskew, R.T., Jr. & Kortick, P.M, (1998) Second-site chromatic desensitization increases intrinsic noise. Investigative Ophthalmology & Visual Science (Suppl.), 39, S4.
- Giulianini, F. & Eskew, R.T., Jr., (1998) Nonlinearities in the S-cone detection mechanism revealed by noise masking. Investigative Ophthalmology & Visual Science (Suppl.). 39, S4.
- McLellan, J.S., & Eskew, R.T. (1997) S-cone increment and decrement detection mechanisms have different long-wavelength inputs. Investigative Ophthalmology & Visual Science (Suppl.), 38, S891.

- Eskew, R.T., Jr. & Kortick, P.M. (1997) Unique hues in 3D cone space. Investigative Ophthalmology & Visual Science (Suppl.), 38, S454.
- Giulianini, F. & Eskew, R.T., Jr., (1997) Chromatic noise masking of Gabor patches in the equiluminant plane of cone contrast space. Investigative Ophthalmology & Visual Science (Suppl.), 38, S255.
- Giulianini, F., Lee, W., & Eskew, R.T., Jr. (1996) Chromatic masking of gabor patches in cone contrast space. Investigative Ophthalmology & Visual Science (Suppl.), 37, S427.
- McLellan, J.S., Harrington, K.K., & Eskew, R.T. (1996) S-Cone increment and decrement sensitivities differ in transient tritanopia. Investigative Ophthalmology & Visual Science (Suppl.), 37, S1062.
- Wu, S., Burns, S.A., Elsner, A.E., & Eskew, R. (1996) Rapid gain control changes on flickering backgrounds. Investigative Ophthalmology & Visual Science (Suppl.), 37, S426.
- Eskew, R.T., Jr., & Kortick, P.M. (1995) Cone contrast contributions to the yellow-blue hue mechanism. Investigative Ophthalmology & Visual Science (Suppl.), 36, S660.
- McLellan, J.S. & Eskew, R.T., Jr., (1995) Pedestal discrimination thresholds suggest independent detection of even-symmetric and odd-symmetric stimuli. Investigative Ophthalmology & Visual Science (Suppl.), 36, S663.
- Giulianini, F. & Eskew, R.T., Jr., (1995) Noise masking of chromatic and achromatic detection mechanisms. Investigative Ophthalmology & Visual Science (Suppl.), 36, S663.
- Eskew, R.T., Jr., & Kortick, P.M. (1994) Hue equilibria compared with chromatic detection in 3D cone contrast space. Investigative Ophthalmology & Visual Science (Suppl.), 35, S1555.
- McLellan, J.S., Goodman, J.B., & Eskew, R.T., Jr. (1994) Achromatic and chromatic detection of mixtures of blobs and isolated edges. Investigative Ophthalmology & Visual Science (Suppl.), 35, 1370.
- Chaparro, A., Stromeyer, C.F. III, Chen, G., Kronauer, R.E., & Eskew, R.T. Jr. (1993) Cone-selective adaptation for equiluminant red-green flashes on colored fields of moderate intensity (400 Trolands). Investigative Ophthalmology & Visual Science (Suppl.), 34, 765.
- Stromeyer, C.F., III, Kronauer, R.E., Ryu, A., & Eskew, R.T. Jr. (1993) Red-green hue mechanism: isolated with moving gratings and an explicit hue criterion. Investigative Ophthalmology & Visual Science (Suppl.), 34, 764.
- Eskew, R.T., Jr., Chaparro, A., Stromeyer, C.F. III, & Kronauer, R.E. (1992) Facilitation of red-green detection by luminance pedestals at small spot sizes. Investigative Ophthalmology & Visual Science (Suppl.), 33, 702.
- Chaparro, A., Stromeyer, C.F. III, Kronauer, R.E., & Eskew, R.T. Jr. (1992) The detection efficiency of chromatic stimuli is greater than luminance stimuli. Investigative Ophthalmology & Visual Science (Suppl.), 33, 755.
- Stromeyer, C.F. III, Kronauer, R.E., & Eskew, R.T. Jr. (1992) Relative temporal phase of L vs M cone signals within the luminance motion mechanism. Investigative Ophthalmology & Visual Science (Suppl.), 33, 756.
- Chaparro, A., Stromeyer, C.F. III, Eskew, R.T., Jr., Huang, E.P., & Kronauer, R.E. (1991).

- Relative sensitivity of red-green and luminance mechanisms for small spots. Investigative Ophthalmology & Visual Science (Suppl.), 32, 1093.
- Eskew, R.T., Jr., Stromeyer, C.F. III and Kronauer, R.E. (1990) An illusory-contour luminance pattern can facilitate equiluminant chromatic discrimination. Investigative Ophthalmology & Visual Science (Suppl.), 31, 264.
- Stromeyer, C.F. III, Eskew, R.T., Jr., & Kronauer, R.E. (1990). The most sensitive motion detectors in humans are spectrally-opponent. Investigative Ophthalmology & Visual Science (Suppl.), 32, 1094.
- Eskew, R.T., Jr., Stromeyer, C.F. III and Kronauer, R.E. (1989) Uncertainty reduction fails to account for facilitation of chromatic detection by luminance contours. Investigative Ophthalmology & Visual Science (Suppl.), 30, 129.
- Stromeyer, C.F. III, Eskew, R.T., Jr., & Kronauer, R.E. (1989) Chromatic facilitation by a luminance edge. Investigative Ophthalmology & Visual Science (Suppl.), 30, 220.
- Eskew, R.T., Jr., Stromeyer, C.F. III and Kronauer, R.E. (1988) Chromatic impulse response measured by a two-pulse perturbation technique. Investigative Ophthalmology & Visual Science (Suppl.), 29, 164.
- Stromeyer, C.F. III, Eskew, R.T., Jr., & Kronauer, R.E. (1988) Relative S to L cone phase functions show S cones feed separate luminance-motion and chromatic mechanisms. Investigative Ophthalmology & Visual Science (Suppl.), 29, 328.
- Eskew, R.T., Jr. (1987) A chromatic gap effect. Investigative Ophthalmology & Visual Science (Suppl.), 28, 214.
- Eskew, R.T., Jr. (1986) Spatial integration and chromatic discrimination. Investigative Ophthalmology & Visual Science (Suppl.), 27, 75.
- Eskew, R.T., Jr. & Boynton, R.M. (1985) Isoluminant chromatic discrimination as functions of field height and width. Investigative Ophthalmology & Visual Science (Suppl.), 26, 183.
- Eskew, R.T., Jr. (1984) Wiener analysis of suprathreshold human spatial vision. Investigative Ophthalmology & Visual Science (Suppl.), 25, 144.

Published Abstracts (non-refereed)

- Eskew, R.T., Jr., Lahlaf, S., Shepard, T.G. (2016) The hue of threshold-level tests compared to a six-mechanism model of chromatic detection. Perception, 2016, 45, suppl.
- Livitz, G., Riesen, G., Shepard, T., Mingolla, E., & Eskew, R. (2016). Afterimages and Induced Colors Have the Same Hue: Implications for Discounting Illuminants. Journal of Vision, 16(12), 1145-1145. doi:10.1167/16.12.1145
- Shepard, T., Lahlaf, S., McCarthy, C., & Eskew Jr, R. (2016). Labeling the Lines: Asymmetric Color Matches Compared to a Six Mechanism Chromatic Detection Model. Journal of Vision, 16(12), 390-390. doi:10.1167/16.12.390
- Shepard, T. G., Swanson, E. A., McCarthy, C. L., & Eskew, R. T., Jr. (2016). A model of selective masking in chromatic detection. J Vis, 16(9), 3. doi:10.1167/16.9.3
- Shepard, T. G., Taylor, C. P., Rucker, F. J., & Eskew, R. T. (2016). Sensitivity to Incremental S-cone Stimuli and the Development of Myopia. Investigative Ophthalmology & Visual Science, 57(12), 5523-5523.

- Eskew, R. T., Jr, Shepard, T., and Gabree, S. (2015) Pedestal masking of S cone tests: Effects of gain control and cone combination. *Perception*, 44(S1), 288-289.
- Shepard, T.G., Eskew, Jr., R., McCarthy, C., & Ochandarena, N. (2015) Selective noise masking of L and M cone stimuli: unipolar tests reveal theoretically significant asymmetries. *Journal of Vision*, 15(12), 260. doi:10.1167/15.12.260
- Livitz, G., Riesen, G., Mingolla, E., & Eskew, R., (2015) Canceling a hue of a negative afterimage in solid and perceptually-filled color images. *Journal of Vision*, 15(12), 402-402. doi:10.1167/15.12.402.
- Riesen, G., Livitz, G., Eskew, R., Mingolla, E. (2015) Effect of achromatic afterimage on spatial chromatic induction. *Journal of Vision*, 15(12), 401-401. doi:10.1167/15.12.401
- Eskew, R.T., Jr., & Shepard, T.G. (2014) Noise masking of S+ and S- Tests: Linear cone combination model suggests detection by hue mechanisms. *Journal of Vision*, 22, 14(10):990; doi:10.1167/14.10.990
- Eskew, R.T., Jr., & Shepard, T.G. (2013) Highly-selective chromatic masking does not require large numbers of color mechanisms. *Journal of Vision*, 2013, 13, 296; doi:10.1167/13.9.296
- Shepard, T.G., Swanson, E.A., & Eskew, R.T. Jr. (2013) Color mechanisms revealed by measuring detection and discrimination. *Journal of Vision*, 2013, 13, 1013; doi:10.1167/13.9.1013
- Livitz, G., Yazdanbakhsh, A., Eskew, R, & Mingolla, E. (2009) Producing non-Hering Hue combinations using complementary chromatic induction. *Journal of Vision*, 9, 363. doi:10.1167/9.8.363.
- Eskew, R.T., Jr., & Richters, D.P. (2008) Potential mechanisms of long-term adaptation in color vision, and a failure to find evidence for them. *Journal of Vision*, 8, 26. doi:10.1167/8.17.26.
- Richters, D., Gabree, S., & Eskew, R. (2008) Hand-eye correlation: Sensorimotor learning of movement/ color pairs. *Journal of Vision*, 8, 61. doi:10.1167/8.6.61
- Richters, D., & Eskew, R. (2007) Hand-eye correlation: hand movements can alter color judgments. *Journal of Vision*, 7, 99. doi:10.1167/7.15.99
- Eskew, R.T., Jr. & Goodrich, J. (2007) The achromatic mechanisms do not combine cone signals additively: a new experimental approach. *Journal of Vision*, 7, 792. doi:10.1167/7.9.792
- Gabree, S.H. & Eskew, R.T. (2007) Asymmetric pedestal masking of S-cone increments and decrements: Does sawtooth polarity matter? *Journal of Vision*, 7, 672. doi:10.1167/7.9.672
- Eskew, R. T. Jr., Richters D, Gabree S (2007) Red and green detection contours and hue equilibria redux. *Perception* 36 ECVF Abstract Supplement
- Gabree, S. H., & Eskew, R. T., Jr., Jr. (2006). Pedestal masking of S-cone increments and decrements: Less contrast gain control in the S-OFF pathways [Abstract]. *Journal of Vision*, 6(13):7, 7a, <http://journalofvision.org/6/13/7/>, doi:10.1167/6.13.7.
- Richters, D., & Eskew, R. T., Jr., Jr. (2006). Mechanisms underlying long-term chromatic adaptation [Abstract]. *Journal of Vision*, 6(13):8, 8a, <http://journalofvision.org/6/13/8/>, doi:10.1167/6.13.8.
- Eskew, R., & Giulianini, F. (2005). Nonlinear cone combination in S cone mechanisms: Results that are independent of color representation and off-axis looking [Abstract].



- Journal of Vision, 5(12), 25a, <http://journalofvision.org/5/12/25/>, doi:10.1167/5.12.25.
- Richters, D.P., & Eskew, R.T., Jr. (2005). Evaluation of a Liquid Crystal on Silicon (LCOS) Display for Vision Research. [Abstract]. Journal of Vision, 4(11), 78a, <http://journalofvision.org/4/11/78/>, doi:10.1167/4.11.78.
- Eskew, R., Jr., Wang, Q., & Richters, D. P. (2004). A five-mechanism model of hue sensations [Abstract]. Journal of Vision, 4(8), 315a, <http://journalofvision.org/4/8/315/>, doi:10.1167/4.8.315.
- Eskew, R.T., Wang, Q., Richters, D.P. (2003) Color detection, discrimination, and hue scaling in (S,M) and (S,L) planes of color space. Perception, ECVF Abstracts, 2003..
- Wang, Q., Richters, D. P., & Eskew, R. T., Jr. (2003). Interactions of S cone increments and decrements with L and M cone signals [Abstract]. Journal of Vision, 3(9), 449a, <http://journalofvision.org/3/9/449/>, doi:10.1167/3.9.449.
- Eskew, R. T., Jr., Wang, Q., & Giulianini, F. (2002). Spectral asymmetries in detection mechanisms fed by S cone increments and decrements. [Abstract]. Journal of Vision, 2(10), 52a, <http://journalofvision.org/2/10/52/>, doi:10.1167/2.10.52.
- Eskew, R. T., Jr., Wang, Q., & Richters, D. P. (2003). Colour detection, discrimination, and hue in the (S,M) and (S,L) planes of colour space. Perception, 32 (Suppl.), 39.
- Newton, J.R., & Eskew, R.T., Jr. (2000). Color detection mechanisms in the periphery. Society for Neuroscience Abstracts, 26, 138.
- Newton, J.R., & Eskew, R.T. (2000) Peripheral color detection mechanisms. OSA Annual Meeting Program, 79.
- Eskew, R.T., Jr., & Newton, J.R. (1999) Counting color mechanisms: implications from threshold-level discriminations. OSA Annual Meeting Program, 96.
- Giulianini, F. & Eskew, R.T., Jr. (1996) Effect of spatiochromatic characteristics of noise masks on equiluminant detection. OSA Annual Meeting Program, 66
- McLellan, J.s. & Eskew, R.T., Jr. (1996) Asymmetries in S-cone increment and decrement detection. OSA Annual Meeting Program, 66.
- Giulianini, F. & Eskew, R.T., Jr. (1995) Noise masking of detection mechanisms in cone contrast space. OSA Annual Meeting Program, 80.
- Eskew, R.T., Jr. (1994) Tests of a cone contrast model of color discrimination and color appearance. Optics & Photonics News, Suppl., 5, 112.
- Eskew, R.T., Jr., Stromeyer, C.F. III, Chaparro, A., & Kronauer, R.E. (1992) Why is chromatic sensitivity greater than luminance sensitivity? Technical Digest, 23, Optical Society of America, 17.
- Eskew, R.T., Jr., Stromeyer, C.F. III, & Kronauer, R.E. (1990) Cone-contrast comparison of luminance and chromatic sensitivities for movement, flicker, and flashes. Technical Digest, 15, Optical Society of America, 148.
- Eskew, R.T., Jr., Stromeyer, C.F. III and Kronauer, R.E. (1987) Facilitation of chromatic discrimination by a temporally-displaced luminance pedestal. Optical Society of America Technical Digest Series, 22, 63.
- Eskew, R.T., Jr. (1985) Flash enhancement of isoluminant chromatic discrimination. Optical Society of America Technical Digest Series, 20, 23.
- Nagy, A.L., Eskew, R.T., Jr., & Boynton, R.M. (1985) Color discrimination contours in a cone excitation space. Optical Society of America Technical Digest Series, 20, 23.

- Eskew, R.T., Jr., Boynton, R.M., & Nagy, A.L. (1984) Chromatic discrimination in the R-B constant-luminance chromaticity plot. Optical Society of America Technical Program, P98.
- Boynton, R.M., & Eskew, R.T., Jr. (1984) Blue cones contribute to contour in small fields. Optical Society of America Technical Program, P98.

### **Invited Presentations**

- "Mechanisms of color: detection, discrimination, and appearance" Palmer Lecture, Colour Group of Great Britain, City University of London, January 11, 2017
- "The nature and number of color detection mechanisms." "Invited Special Speaker", International Workshop: Level-processing of color vision – optics, cone, and color perception. Tokyo Institute of Technology, March 4, 2015
- "Psychophysical studies of short-wavelength sensitive cones: increases and decreases are not always simply opposites." New England College of Optometry, December 1, 2009.
- "Potential mechanisms of long-term adaptation in color vision, and a failure to find evidence for them. "OSA Fall Vision Meeting, Rochester NY October 26, 2008. (with David Richters)
- "The red / green color mechanisms: detection, linearity, and adaptation, New England College of Optometry, Boston, MA, March 29, 2007.
- "Bayesian model of chromatic mechanism combination," Smith Kettlewell Eye Research Institute, San Francisco CA, February 20, 2003.
- "Bayesian model of chromatic discrimination", Schepens Eye Research Institute, Boston, MA, January 28, 2002.
- "Odds and Ends: Asymmetric and unipolar chromatic mechanisms." Vision and Color Satellite Meeting, Optical Society of America, UC Irvine, October 14, 2001 (Robert M. Boynton Lecture)
- "Higher order color mechanisms", Invited presentation, Workshop on Color Detection Models, Annual Meeting of the Optical Society of America, Providence RI, October 24 2000.
- "Mechanisms of Color Vision." Invited colloquium, Neuroscience Seminar Series, Northeastern University, Boston, MA February 17, 2000.
- "Color appearance". Invited presentation, Center for Cognitive and Neural Systems, Boston University, Boston, MA November 7, 1996.
- "Hue classification and human color vision." Invited presentation, Schepens Eye Research Institute, Harvard Medical School, Boston MA, January 9, 1996.
- "Space wars: cone contrast vs. tristimulus space". Invited presentation, Workshop on Orthogonality in Color Spaces, Annual Meeting of the Optical Society of America, Portland OR, September 10, 1995.
- "Tests of a cone contrast model of color discrimination and color appearance." Invited presentation, Symposium on Color Appearance and Color Discrimination, Annual Meeting of the Optical Society of America, Dallas TX, October 5, 1994.
- "Edge-color Interactions." Invited presentation, Symposium on Color Psychophysics, International Brain Research Organization, Third World Congress of Neuroscience,

- Montreal, Canada, August 4, 1991.
- "Edges and Color Perception." Sigma Xi Fall 1991 Luncheon, Northeastern University, December 2, 1991.
  - "Edge-Color Interactions: Data Fusion in Human Vision?" Invited colloquium, the M.I.T.R.E. Corporation, September 1991.
  - "Luminance Edges and Red-Green Color Perception." Invited colloquium, Vision Group, University of California, San Diego, September 1989.
  - Invited participant, Conference on Color Spaces in Psychophysics and Physiology, The Neurosciences Institute, The Rockefeller University (organized by Patrick Cavanagh and Daniel Ts'o), September 25-26, 1989.
  - "Combining form and color information." Invited colloquium, Natural Information Processing Seminar, Harvard University, 1989.
  - "Edge-color interactions." Invited colloquium, Vision Lunch Series, Massachusetts Institute of Technology, 1988.
  - "The effects of luminance edges on color detection." Invited presentation to the Air Force Office of Sponsored Research Conference, Annapolis MD, October 1987.
  - "Color and form." Invited colloquium, Psychology Department, Washington University, November 1985.
  - "Nonlinear model of human spatial vision", Invited colloquium, Vision Group, University of California, San Diego, November 1983.

### **Professional Activities**

- Member, National Science Foundation Sensory Systems Review Panel (Division of Integrative Biology and Neuroscience), 2001.
- Vice-Chair (1991-1993) and Chair (1993-1994) (elected) of the Color Technical Group and Member of the Technical Council, Optical Society of America. Various OSA committees including the Fellows Committee (2006) and the Tillyer Award Committee (2007-2008).

### Editorial Experience

Managing Special Editor (Co-editors Bevil Conway, Wellesley College; Paul Martin, University of Sydney; and Andrew Stockman, University College London) of A Special Issue on Color: Cone Opponency and Beyond, Vision Research, to appear in 2017.

Co-Editor (with Zhong-Lin Lu, University of Southern California) of A Special Issue on the Applications of Signal Detection Theory to Visual Perception, Spatial Vision, 2007, volume 20.

Occasional reviewer for:

National Science Foundation	<u>Frontiers in Psychology</u>
The Welcome Trust	<u>Visual Neuroscience</u>
The Leverhulme Trust	<u>Journal of Vision</u>
Biotechnology and Biological Sciences Review Council (UK)	<u>Journal of Neuroscience</u>
<u>Proceedings of the National Academy of Sciences</u>	<u>Color Research &amp; Application</u>
<u>Investigative Ophthalmology and Visual Science</u>	<u>Vision Research</u>
<u>Journal of Experimental Psychology: Human Perception and Performance</u>	<u>Journal of the Optical Society of America, A</u>
<u>Perception and Psychophysics</u>	
<u>Fight for Sight</u>	

Membership in Professional Organizations

- Optical Society of America (OSA) (Fellow)
- Psychonomic Society
- Vision Sciences Society

Paper Sessions and Symposia Chaired

- "Connectivity & Function in the Short-Wavelength Cone Pathway", OSA Fall Vision Meeting 2005 (Organizer & Presider)
- "Rod & Cone Mechanisms", Fall Vision Meeting 2002 (Presider)
- "Millennium Tutorials" OSA 2000 (Presider)
- Tilyer Award Lecture (J.D. Mollon) OSA 2000 (Presider)
- "Cones, Resolution and Chromatic Mechanisms" ARVO 2000 (Presider)
- "Adaptation" OSA 1999 (Organizer & Presider)
- "Color mechanisms" ARVO 1998 (Presider)
- "Lightness, Brightness, and Hue" ARVO 1997 (Presider)
- "Temporal Phase Relations in Visual Channels", OSA 1994 (Organizer & Presider)
- "Color Thresholds" ARVO, 1994 (Presider)
- "Classic Color", OSA 1993 (Presider)
- "Color", ARVO 1992 (Presider)

Graduate Student Supervision

Yesenia Taveras-Cruz, ongoing.

Jingyi He, ongoing

Shepard, T. Ph.D. thesis: Detection, Color Matching, and Discrimination: An

Exploration of the Nature and Number of Chromatic Mechanisms", August 2017

Gabree, S. PhD thesis: "Asmmetries in the S-cone Increment and Decrement Pathways

- as Revealed by Pedestal Masking,” November, 2009.
- Richters, D. R. Ph.D. thesis: “Hand-eye Correlation: An Arbitrary Sensorimotor Contingency Can Alter Visual Sensitivity”, August, 2008.
- Newton, Jessica. Ph.D. thesis: “Peripheral color vision: asymmetries in chromatic mechanisms”, September 2001.
- Giulianinni, Franco. Ph.D. thesis: “The Yellow-Blue Detection Mechanism as Revealed by Chromatic Noise Masking”, September 1998.
- McLellan, James S. Recipient of a National Science Foundation Pre-Doctoral Fellowship. Ph.D. thesis: “Cone-opponent effects on S Cone Increment and Decrement Detection”, September 1997.

#### Membership on other Dissertation Committees

- Greune, Tina. Vulnerability and resilience to stressful and traumatic events: Stressor controllability, sex differences, and individual differences. 2017
- Morrison, Thomas. Adolescent anabolic steroid exposure alters anxiety-like behavior through aggression circuits in the hypothalamus. 2016
- Sherbakov, L. Computational Principles for an Autonomous Active Vision System. Boston University, 2014.
- Gunnery, S. The Deliberate Duchenne Smile: Perceptions and Social Outcomes. Northeastern University, 2012.
- Bauman, J. Anger and threat detection: Increased expectancy for emotion-relevant stimuli influences object recognition Northeastern University, 2012.
- Livitz, G. A neural model of unipolar chromatic mechanisms and detection psychophysics of non-opponent chromatic qualia. Boston University, 2010.
- Grayhem, R. J. Light adaptation: change in noise or change in gain (or both)? Northeastern University, Ph.D. expected 2010.
- Jin, Z. Is attention involved in the smooth pursuit system? Northeastern University, 2008.
- Santhi, N. The role of distractor coherence and target certainty in feature search: a signal detection approach. Northeastern University, 2000.
- D’Anguilli, A. Phenomenal and temporal aspects of visual mental image generation: Validating retrospective report on vividness through latency analysis. Northeastern University, 2000.
- Oddo, Scott. Psychophysical and computational studies of chromatic texture segregation. Center for Cognitive and Neural Systems, Boston University, 1997.
- Kjelgaard, Margaret. Can prosodic structure influence syntactic parsing attachments? Northeastern University, Dept. of Psychology, 1995.
- Fine, Elisabeth. The effects of text display format on reading for low vision and normally-sighted adults. Northeastern University, Dept. of Psychology, 1995.
- Irish, Julie. Social stigma in the medical interaction. Northeastern University, Dept. of Psychology, 1994.
- Cunningham, Tiffany. On the role of the Nucleus Accumbens in opiate-dopamine interactions: A behavioral study in the rat. Northeastern University, Dept. of Psychology, 1993.

- Rivest, Josee. Cross attribute cooperation in localization of contours. Harvard University, Dept. of Psychology, 1992.
- Sigurdardottir, Z.G. Application of stimulus equivalence: Icelandic noun classification with higher-order contextual control. Northeastern University, Dept. of Psychology, 1992.
- Yang, Jian. Bottom-up visual image processing probed with weighted Hermite polynomials. Northeastern University, Dept. of Psychology, 1991.

#### Membership on Departmental and University Committees

- College of Science Dean Search Committee, 2015-2016.
- Department Workload Advisory Committee, 2015.
- Cognition/Perception Search Committee, 2013-2014
- Chair, Faculty Senate Committee to Evaluate Dean Terry Fulmer, 2013-2014
- University Cyber-Physical Security Hiring Committee, Spring 2012
- College of Science Search Committee for Physics Chair, Spring 2012
- Chair, Tenure and Promotion Committee, Dr. Yury Petrov (2011-2012)
- Task Force on Committees and Policies in the College of Science (Fall 2009)
- Language and Cognition Search Committee, Psychology Department (2006-2007)
- Faculty mentor, Dr. Yury Petrov (2010-2012)
- Psychobiology Search Committee, Psychology Department (2006-2007)
- Social Sciences Review Committee, Northeastern University Research Scholarship and Development Fund (2006)
- Chair, Evaluation Committee, Chair of Earth & Environmental Sciences Dept. (2005)
- Chair, Vision Search Committees (two) (2004-2006)
- Departmental Workload Policy Committee (2004-2005).
- Graduate Committee, Psychology Department (1994-1995, 1998-2002, 2004-)
- Merit Raise Committee, Psychology Department (1992, 1993, 1995, 1999, 2001, 2004 -- elected; 2007, 2008, 2009 - *ex officio*)
- Psychobiology Search Committee (2003-2004)
- Interdisciplinary Neuroscience Steering Committee (1999-2003 )
- Chair, Tenure and Promotion Committee, Dr. Richard Melloni (2003)
- Chair, Social Sciences Review Committee, Northeastern University Research Scholarship and Development Fund (2002)
- Chair, third-year Review Committee for Dr. Richard Melloni (2002)
- Social Sciences Review Committee, Northeastern University Research Scholarship and Development Fund (2002)
- Third-year Review Committee for Dr. John Coley (2001).
- Faculty mentor, Dr. Richard Melloni (2000-2002)
- University Research Council (1999-2001).
- University Graduate Council (1998-2000).
- Tenure and Promotion Committee for Dr. Neal Perlmutter (2000)
- Tenure and Promotion Committee for Dr. Denise Jackson (1999) , Chair
- Tenure and Promotion Committee for Dr. Randall Colvin (1998)
- Psychology Department Neuroscience Working Group (1998-2000)

- Psychobiology Search Committee, Psychology Department (1997-1998).
- Tenure and Promotion Committee for Dr. Franklin Naarendorp (1997)
- Language and Cognition Search Committee, Psychology Department (1995-1996)
- Chair Search Committee, Psychology Department (1994)
- Undergraduate Curriculum Committee, Psychology Department (1991- 1994). Also undergraduate pool advisor.
- Faculty Advisor, Undergraduate Psychology Club, (1991-1993).
- Security Committee, Psychology Department (1991).