KAREN L. GUNTHER, PH.D.

Professor, Department of Psychology
Wabash College, 301 W. Wabash Ave., Crawfordsville, IN 47933
e-mail: guntherk@wabash.edu phone: 765/361-6286

EDUCATION

Post-Doctoral Fellowship
Medical College of Wisconsin (Milwaukee, WI)
March 2002 – June 2003 and July 2004 – July 2006
- Eye Institute
- Research Areas: Molecular Genetic and Psychophysical Study of Color Vision
- Advisors: Jay and Maureen Neitz

Cognitive Science Interdisciplinary PhD, 2002
University of California, San Diego (La Jolla, CA)
- Primary Specialization: Psychology
- Secondary Specialization: Neuroscience
- Dissertation Title: The Mechanisms Underlying Color Vision
- Advisor: Karen R. Dobkins

M.A. in Psychology, 1997
University of California, San Diego (La Jolla, CA)
- Thesis Title: Pitch Class Circle Orientation Alignment Between the Tritone and Semitone Paradoxes
- Advisor: Diana Deutsch

B.A. in Biopsychology, 1992
Oberlin College (Oberlin, OH)
- Major: Biopsychology

ACADEMIC APPOINTMENTS

Chair, Neuroscience Minor. Wabash College (Crawfordsville, IN)
- July 2023 – present

Professor of Psychology. Wabash College (Crawfordsville, IN)
- July 2021 – present

Department Chair, Psychology. Wabash College (Crawfordsville, IN)
- July 2016 – June 2020; July 2022 – June 2023

Daniel F. Evans Associate Professor in Social Sciences endowed chair, Wabash College (Crawfordsville, IN)
- July 2018 – June 2021

Associate Professor of Psychology. Wabash College (Crawfordsville, IN)
- July 2013 – June 2021
- Courses taught in addition to those listed under Assistant Professor position: Enduring Questions (freshman colloquium), Health Psychology, Sensory Transduction, Senior Neuroscience Capstone

ACADEMIC APPOINTMENTS (continued)

Assistant Professor of Psychology. Wabash College (Crawfordsville, IN)
- July 2007 – June 2013
- Undergraduate courses taught: Freshman Tutorials (Color; Science & Pseudoscience), Introductory Psychology, Sensation & Perception, Research in Sensation & Perception, Cognitive Neuropsychology, Principles of Neuroscience, Research Methods & Statistics, Literature Review, The Cognitive Neuroscience of Music, Senior Psychology Capstone, Cultures & Traditions (sophomore colloquium)

Visiting Assistant Professor of Psychology. St. Mary's College of Maryland (St. Mary's City, MD)
- August 2006 – June 2007
- Undergraduate courses taught: Sensation & Perception, The Cognitive Neuroscience of Music, Introductory Psychology

Visiting Assistant Professor of Neuroscience. Oberlin College (Oberlin, OH)
- July 2003 – June 2004
- Undergraduate courses taught: Color (an interdisciplinary sophomore seminar course), Sensory Neuroscience, Sensory Psychophysics Lab, Introductory Neuroscience Lab
- Supervised research students.

Adjunct Faculty. Psychology Department, Carroll College (Waukesha, WI)
- September 2002 – May 2003
- Undergraduate course taught: Introductory Psychology

Preparing Professional Faculty Certification. UC San Diego. February 2002

Instructor of Record. Psychology Department, UC San Diego
- August 1999, 2000, July 2001
- Undergraduate course taught: Introduction to Statistics

Adjunct Faculty. Behavioral Sciences Department, Palomar Community College (San Marcos, CA)
- Spring 2000
- Undergraduate course taught: Statistics

Coordinator. Cognitive Science Department, UC San Diego
- Fall 1999
- Graduate course taught: Color

Teaching Assistant. UC San Diego. September 1995 - December 2001
- Cognitive Psychology; Introduction to Statistics; Introduction to Psychology; Physiological Psychology; Drugs and Behavior; Introduction to Principles of Behavior; Theories of Personality; Abnormal Psychology; Psychology and the Arts.
- Presented occasional lectures, prepared and led discussion sections, wrote and graded exams, held office hours.

RESEARCH EXPERIENCE

- **Supervision of Senior Capstone Research Projects** and **Summer Interns**, Wabash College, 2008 - present
- Hosted **mGluRs, the Midwest/Great Lakes Undergraduate Research Symposium in Neuroscience**, Sept. 2013 & 2014. This is a one-day conference for undergraduates to share their research, plus faculty and student break out sessions, and a keynote speaker.

RESEARCH EXPERIENCE (continued)

- **Postdoctoral Research** (molecular genetics and visual psychophysics), The Medical College of Wisconsin, Eye Institute (March 2002 – June 2003 and July 2004 – July 2006).
- **Independent Faculty Research** (visual psychophysics), Oberlin College, Neuroscience Department, July 2003 – June 2004.
- **Graduate Research** (visual and auditory psychophysics), UC San Diego, Psychology Department, September 1995 - February 2002.
- **Research Assistant** (neuropharmacology and behavioral neuroscience), Abbott Laboratories (Abbott Park, IL), Pharmaceutical Products Division, September 1992 - July 1995.
- **Research Assistant**, The Ohio State University (Columbus, OH), Medical School, Department of Biochemistry. Summer 1992.
- **Research Assistant** (face recognition), Oberlin College, Psychology Department, February - May 1992.
- **Independent Project** (musical Stroop), Oberlin College, Psychology Department, September 1991 - May 1992.
- **Summer Intern**, Syntex Pharmaceuticals (Palo Alto, CA), Institute of Pharmacology, Department of Neuroscience, Summer 1990.
- **Research Assistant**, Syntex Pharmaceuticals (Palo Alto, CA), Department of Immunology, January 1990.

GRANTS

- National Science Foundation, grant number BCS1753808, 6/1/18 – 7/31/23. *RUI: Stimulus Characteristics Influencing Non-Cardinal Color Mechanisms.* This project will use visual psychophysics to test the neural mechanisms underlying our ability to perceive non-cardinal colors. Although there is ample evidence that such mechanisms exist in the isoluminant plane of color space, there is less strong evidence for the two planes with luminance input (red-green/luminance and tritan/luminance). Thus, these latter two planes are a focus of the proposed studies. Non-cardinal mechanisms will be measured by the ratio of the contrast thresholds to detect the stimuli when embedded in aligned noise (same color) versus when embedded in orthogonal noise (e.g., red/green stimuli embedded in tritan noise). Stimulus attributes such as size, contrast, and gratings vs. full-field will be manipulated. In addition, perceptual learning will be used to try to strengthen these non-cardinal mechanisms.

- Great Lakes College Association New Directions Initiative. 2013 - 2014. I was awarded a grant to incorporate diversity into a new course on Health Psychology. Wabash students tend not to advance much on diversity awareness, according to the National Survey of Student Engagement (NSSE). I tested diversity awareness at the beginning and end of the course, and in a control group, a section of Introductory Psychology without a specific diversity emphasis.

- Great Lakes College Association Pathways to Learning Collegium Study of Teaching and Learning Grant. 2009 - 2011. In this grant I examined how the use of biographies and autobiographies aids in student learning, memory, and enjoyment of a Sensation and Perception course. The books were supplemented with lectures on the concepts addressed in the books and with discussions of scientific articles related to the books.

GRANTS (continued)

Sample books include *The Island of the Colorblind* (Oliver Sacks), *The Emperor of Scent* (Chandler Burr), and *Rebuilt: My Journey Back to the Hearing World* (Michael Chorost). This project resulted in the 2011 *Journal of Undergraduate Neuroscience Education* paper listed under "publications" below.

- Ruth L. Kirschstein National Research Service Award (post-doctoral fellowship), National Eye Institute, National Institutes of Health, September 2004 – July 2006. F32 EY014789 *Genetic Loci Associated with L:M Cone Ratio Variation.* Although the eye contains three types of cone, long-wavelength-sensitive (L), medium-wavelength-sensitive (M), and short-wavelength-sensitive (S), the L and M cones comprise over 90% of our cones. In the fovea, the portion of the retina used for high acuity tasks such as reading, the L:M cone ratio varies tremendously, even among people with normal color vision. The cause of this variability is presently unknown, however evidence suggests that it is inherent to the genetic mechanism that regulates expression of the L and M pigment genes, which reside on the X chromosome. I tested the hypothesis that DNA sequence polymorphisms at the X-chromosome visual pigment gene locus play a role in determining the L:M cone ratio. I sequenced regions of the L/M pigment gene array in DNA from subjects with known L:M cone ratios. Sequence differences were analyzed for correlation with cone ratio. Understanding how the L:M cone ratio is determined has important implications for understanding the neural circuitry for color vision. This project resulted in the Gunther, Neitz, & Neitz (2008) paper listed under "publications" below.
- Fight for Sight Graduate Student Fellowship, 1998.
- Association for Research in Vision and Ophthalmology/National Eye Institute Fellowship Travel Grant, 1997.

AWARDS

- Independent Research Award, Oberlin College Psychology Department, 1992 - Musical Stroop Experiment.

PROFESSIONAL ACTIVITIES

- Human Subjects/Institutional Review Board Committee, Wabash College, 2008-present; chair 2019-2025 (except for one year of sabbatical)
- Council on Undergraduate Research: Psychology Division Councilor/Representative 2010-present (6 elected terms; title of this position changed in 2023); Psychology Division Chair 2020-present; Psychology Division Secretary 2011-2020; Diversity, Equity and Inclusion/Broadening Participation Committee member and secretary 2018-2026; reviewer of abstracts for the National Conference on Undergraduate Research; reviewer of abstracts for Posters on the Hill 2010-2016
- New Faculty Orientation Leader, 2015-2020
- Pre-Health Committee, Wabash College, 2014-2018
- McLain-McTurnan-Arnold Research Scholar granting committee, 2014-2016, chair 2016, 2025-present
- Wabash College team member to the Great Lakes College Association's Undergraduate Research in the STEM fields workshop through the Council on Undergraduate Research, 2012-2014
- Admissions Committee, Wabash College, 2009-2013, Chair 2010-2013
- Lilly Steering Committee, Wabash College (an internal granting mechanism), 2008-2009

PROFESSIONAL ACTIVITIES (continued)

- Coordinator of the Social Sciences Colloquium, Wabash College, 2008-present (except for two sabbatical years)
- Editorial Board, Brain & Cognition, 2008-2014
- Occasional reviews for: Journal of the Optical Society of America A, Journal of Vision, Visual Neuroscience, Vision Research, Attention Perception & Psychophysics, i-Perception, Psychonomic Bulletin & Review, Optics Express, CUR Quarterly, Multisensory Research, National Science Foundation, Journal of Undergraduate Neuroscience Education, Frontiers in Psychology
- St. Mary's College of Maryland Neuroscience Award Committee. 2007
- Post-doctoral Advisory Council Member. The Medical College of Wisconsin. 2005-2006.

INVITED TALKS

2012 mGluR's (Midwest/Great Lakes Undergraduate Research Symposium in Neuroscience), The College of Wooster, Wooster, OH. Co-led (with Meagen Pollock of Wooster) a faculty session on the Council of Undergraduate Research's *Characteristics of Excellence in Undergraduate Research* document.

2012 Psychology Department, University of Nevada, Reno. What Where's Waldo Can Tell Us About Visual Anatomy.

2011 Psychology Department, DePauw University, Greencastle, IN. What Where's Waldo Can Tell Us About Visual Anatomy.

2005 Basic Principles of Visual Biology, graduate level course. Cell Biology, Neurobiology, and Anatomy, The Medical College of Wisconsin.

2005 Vision Research Forum. Cell Biology, Neurobiology, and Anatomy, The Medical College of Wisconsin. Color Vision: From Behavior to Genes.

2004 Lakeshore Vision Conference, The Medical College of Wisconsin. Progress Report on the Search for the Genetic Loci of the L:M Cone Ratio.

2002 Lakeshore Vision Conference, The Medical College of Wisconsin. Preliminary Results in the Search for a Genetic Correlate of L:M Cone Ratio.

2002 Department of Ophthalmology and Visual Sciences, University of Chicago. Induceability of Luminance and Brightness.

2001 Department of Cell Biology, Neurobiology, and Anatomy, The Medical College of Wisconsin. Consequences of Asymmetries in the Relative Numbers of L versus M Cones.

2000 Interdisciplinary PhD Course, Cognitive Sciences Department, UC San Diego. Why are Colors Colored?

1998 Canyon Quilters of San Diego, San Diego, CA. Why are Colors Colored?

PROFESSIONAL ORGANIZATIONS

- Association for Psychological Science
- Council on Undergraduate Research
- International Colour Vision Society
- Vision Sciences Society
- Society for Neuroscience
- Faculty for Undergraduate Neuroscience
- Society for the Teaching of Psychology (APA Division 2)
- Review Editor for Frontiers in Psychology/Neuroscience, Perception Science (Dec. 2023 – present)

PUBLICATIONS

2024 **Gunther, K.L.** Yummy UV poppies! In T. Frankland (Ed.), *The Cherrywood Challenge 2024: Poppy* (p. 96). Cherrywood Hand Dyed Fabrics, Inc.

2023 **Gunther, K**. Monarch Sunrise. In T. Frankland (Ed.), *The Cherrywood Challenge 2023: Monarch* (p. 92). Cherrywood Hand Dyed Fabrics, Inc.

2022 Tompkins, N., & **Gunther, K.L.** Color vision deficiency and teaching electromagnetism. *The Physics Teacher, 60*, 466-468.

2022 **Gunther, K.L.** Non-cardinal color mechanism elicitation by stimulus shape: Bringing the S versus L+M color plane to the table. *Journal of Vision*, 22(5), Article 5, 1–15.

2020 **Gunther, K.L.**, & McKinney, M.R. Poor peripheral binding depends in part on stimulus color. *Attention, Perception, & Psychophysics, 82*(7), 3606-3617.

2017 Watson, Q.J. & **Gunther, K.L.** Trombones elicit bitter more strongly than do clarinets: A partial replication of three studies of Crisinel and Spence. *Multisensory Research, 30,* 321 – 335.

2016 **Gunther, K.L**. & Downey, C.O. Influence of stimulus size on revealing non-cardinal color mechanisms. *Vision Research, 127*, 57 – 66.

2014 **Gunther, K.L.** Non-cardinal color perception across the retina: Easy for orange, hard for burgundy and sky blue. *Journal of the Optical Society of America A, 31*(4), A274 – A282.

2014 **Gunther, K.L.** Non-cardinal color mechanism strength differs across color planes but not across subjects. *Journal of the Optical Society of America A, 31*(4), A293 – A302.

2012 Dalhaus, R.N., III (W'11), & **Gunther, K.L.** A tritan *Waldo* would be easier to detect in the periphery than a red/green one: Evidence from visual search. *Journal of the Optical Society of America A,* 29(2), A298 – A305.

2011 **Gunther, K.L.** The use of "non-fiction novels" in a sensation and perception course. *Journal of Undergraduate Neuroscience Education*, *10*(1), A14 – A23.

2008 **Gunther, K.L.**, Neitz, J., & Neitz, M. Nucleotide polymorphisms upstream of the X-chromosome opsin gene array tune L:M cone ratio. *Visual Neuroscience, 25*(3), 265 – 271.

2007 Baraas, R.C., Carroll, J., **Gunther, K.L.**, Chung, M., Williams, D.R., Foster, D.H., & Neitz, M. Adaptive-optics retinal imaging reveals S-cone dystrophy in tritan color vision deficiency. *Journal of the Optical Society of America A,* 24(5), 1438 – 1447.

2006 **Gunther, K.L.**, Neitz, J., & Neitz, M. A novel mutation in the short-wavelength sensitive cone pigment gene associated with a tritan color vision defect. *Visual Neuroscience,* 23(3-4), 403 – 409.

2005 **Gunther, K.L.** & Dobkins, K.R. Induction effects for heterochromatic brightness matching, heterochromatic flicker photometry, and minimally distinct border: Implications for the neural mechanisms underlying induction. *Journal of the Optical Society of America A,* 22(10), 2182 – 2196.

2003 **Gunther, K.L.** & Dobkins, K.R. Independence of mechanisms tuned along cardinal and non-cardinal axes of color space: Evidence from factor analysis. *Vision Research,* 43, 683 – 696.

PUBLICATIONS (continued)

2002 **Gunther, K.L.** & Dobkins, K.R. Individual differences in chromatic (red/green) contrast sensitivity are constrained by the relative number of L- versus M-cones in the eye. *Vision Research, 42*(11), 1367 – 1378.

2000 Dobkins, K.R., **Gunther, K.L.**, Peterzell, D.H. What covariance mechanisms underlie green/red equiluminance, luminance contrast sensitivity, and chromatic (green/red) contrast sensitivity? *Vision Research, 40*, 613 – 628.

1999 Kowaluk, E.A., Kohlhaas, K.L., Bannon, A., **Gunther, K.**, Lynch, J.J. III, Jarvis, M.F. Characterization of the effects of adenosine kinase inhibitors on acute thermal nociception in mice. *Pharmacology, Biochemistry and Behavior, 63*(1), 83 – 91.

1998 Holladay, M.W., Bai, H., Li, Y., Lin, N.H., Daanen, J.F., Ryther, K.B., Wasicak, J.T., Kincaid, J.F., He, Y., Hettinger, A.M., Huang, P., Anderson, D.J., Bannon, A.W., Buckley, M.J., Campbell, J.E., Donnelly-Roberts, D.L., **Gunther, K.L.**, Kim, D.J., Kuntzweiler, T.A., Sullivan, J.P., Decker, M.W., & Arneric, S.P. Structure-activity studies related to ABT-594, a potent nonopioid analgesic agent: Effect of pyridine and azetidine ring substitutions on nicotinic acetylcholine receptor binding affinity and analgesic activity in mice. *Bioorganic and Medicinal Chemistry Letters, 8*(19), 2797 – 2802.

1997 Decker, M.W., Bannon, A.W., Curzon, P., **Gunther, K.L.**, Brioni, J.D., Holladay, M.W., Lin, N-H., Li, Y., Daanen, J.F., Buccafusco, J.J., Prendergast, M.A., Jackson, W.J., Arneric, S.P. ABT-089 [2-methyl-3-(2-(s)-pyrrolidinylmethoxy) pyridine dihydrochloride]: II. A novel cholinergic channel modulator with effects on cognitive performance in rats and monkeys. *Journal of Pharmacology and Experimental Therapeutics, 283*, 247 – 258.

1996 Dornan, W.A., McCampbell, A.R., Tinkler, G.P., Hickman, L.J., Bannon, A.W, Decker, M.W., & **Gunther, K.L.** Comparison of site-specific injections into the basal forebrain on water maze and radial arm maze performance in the male rat after immunolesioning with 192-IgG-saporin. *Behavioural Brain Research, 82*, 93 – 101.

1996 Bannon, A.W., Curzon, P., **Gunther, K.L.**, & Decker, M.W. Effects of intraseptal injection of 192-IgG-saporin in mature and aged Long-Evans rats. *Brain Research, 718,* 25 – 36.

1995 Bannon, A.W., **Gunther, K.L.**, & Decker, M.W. Is epibatidine really analgesic? Dissociation of the locomotor activity, temperature and analgesic effects of (±)-epibatidine. *Pharmacology, Biochemistry and Behavior, 51*, 693 – 698.

1995 Bannon, A.W., **Gunther, K.L.**, Decker, M.W., & Arneric, S.P. The influence of BayK8644 treatment on (±)-epibatidine-induced analgesia. *Brain Research, 678*, 244 – 250.

FACILITATED WORKSHOPS

2025 Gilbert, J., Gourley, B.L., **Gunther, K.L.** Access in action: Turning ideas into effective practice. *ConnectUR*, Council on Undergraduate Research, Grand Rapids, MI.

2025 Gilbert, J., Pierszalowski, S., English, J., Gourley, B., **Gunther, K.**, & O-Neil, T. Navigating new norms: Strengthening welcoming practices. Council on Undergraduate Research. Zoom workshop, April 1, 2025.

ABSTRACTS

2026 **Gunther, K.L.**, & Hammer, B. Titrated audiovisual crossmodal congruencies. *Vision Sciences Society*, St. Pete Beach, FL.

2024 **Gunther, K.L.**, Manfred, J., Strimel, C., Klabunde, C., & Dittmann, N. The phenomenon of high-pitched yellow. *International Colour Vision Society*, Ljubljana, Slovenia.

2023 Manfred, J., Strimel, C., Klabunde, C., Dittmann, N. & **Gunther, K.L.** Kandinsky was right: Few do "express bright yellow in the bass notes, or dark lake in the treble". *Optical Society of America (newly renamed Optica) Fall Vision Meeting*, Seattle, WA.

2022 **Gunther, K.L.** Can failed Hebbian wiring explain the difficulty in finding separate non-cardinal mechanisms in the tritan/luminance color plane? *International Colour Vision Society*, Heraklion, Greece.

2022 **Gunther, K.L.** Can failed Hebbian wiring explain the difficulty in finding separate non-cardinal mechanisms in the tritan/luminance color plane? *Vision Sciences Society*, St. Pete Beach, FL.

2021 Temores, I., Naylor, A., & **Gunther, K.L.** Effect of spots versus gratings on non-cardinal color perception: Experiment 2. *Optical Society of America (Optica), Fall Vision Meeting*, virtual (due to COVID pandemic).

2021 Tompkins, N., & **Gunther, K.L.** Color vision deficiency and educational diagrams. *Ides of August*, Wabash College, Crawfordsville, IN.

2021 **Gunther, K.L.**, Sikorski, T., Gourley, B.L., & Yau, E.O.Y. Diversity and inclusion in undergraduate research, scholarship, and creative activity (URSCA): Benefits and recommendations. *Ides of August*, Wabash College, Crawfordsville, IN.

2019 **Gunther, K.L.**, Dunigan, C., Powell, C., & Rodriguez, R. Cortically-stimulating gratings reveal non-cardinal colors better than do LGN-stimulating spots. *International Colour Vision Society,* Riga, Latvia.

2019 **Gunther, K.L.**, Dunigan, C., Powell, C., & Rodriguez, R. Cortically-stimulating gratings reveal non-cardinal colors better than do LGN-stimulating spots. *Vision Sciences Society,* St. Pete Beach, FL.

2018 Rodriguez, J., Dunigan, C., Powell, C., & **Gunther, K.L.** Cortically-stimulating gratings reveal non-cardinal colors better than do LGN-stimulating spots. *Optical Society of America, Fall Vision Meeting*, University of Nevada, Reno, NV.

2018 Dunigan, C., Rodriguez, J., Powell, C. & **Gunther, K.L.** Cortically-stimulating gratings reveal non-cardinal colors better than do LGN-stimulating spots. *Vision Science Day*, Indiana University School of Optometry, Bloomington, IN.

2017 **Gunther, K.L.** Organizing PSY101 Around Broad Questions, not Sub-Disciplines. *Stanford Psychology One conference*, Palo Alto, CA.

2016 Powell, C.J. & **Gunther, K.L.** Full-field Stimuli vs. Gratings to Reveal Non-Cardinal Colors. *Faculty for Undergraduate Neuroscience session, Society for Neuroscience*, San Diego, CA.

2016 **Gunther, K.L.** An integrated scaffolded research experience for psychology majors. *Council on Undergraduate Research*, Tampa, FL.

2015 **Gunther, K.L.** Improving diversity awareness through a Health Psychology course. *Ides of August*, Wabash College, Crawfordsville, IN.

ABSTRACTS (continued)

2015 **Gunther, K.L.**, & Downey, C.O. Non-cardinal color mechanisms: Stimulus size matters. *International Colour Vision Society*, Sendai, Japan.

2015 **Gunther, K.L.**, & Owens, J.K. Brightness induction reveals changes in neural response time to changes in stimulus contrast. *Vision Sciences Society*, St. Pete Beach, FL.

2014 Downey, C.O., & **Gunther, K.L.** Non-cardinal color mechanisms: Stimulus size matters. *Optical Society of America, Fall Vision Meeting*, University of Pennsylvania, Philadelphia, PA.

2014 **Gunther, K.L.**, Brown, J., Porter, L., McKinney, C., & Foote, R. URSC at Wabash. *Council on Undergraduate Research Consortial Meeting of Great Lakes College Association College STEM Faculty*, Washington, DC.

2013 **Gunther, K.L.**, Bost, P., Horton, R.S., Olofson, E.L., & Schmitzer-Torbert, N. An integrated scaffolded research experience for psychology majors. *Council on Undergraduate Research Workshop, International Society for the Scholarship of Teaching and Learning*, Raleigh, NC.

2013 **Gunther, K.L.** Non-cardinal mechanism visual search performance parallels cardinal mechanism performance across the retina, but may be weaker in the non-isoluminant planes of color space. *International Colour Vision Society*, Winchester, England.

2013 **Gunther, K.L.** Non-cardinal mechanism visual search performance parallels cardinal mechanism performance across the retina, but may be weaker in the non-isoluminant planes of color space. *Vision Sciences Society*, Naples, FL.

2012 Wu, Y.C., Goodrich, L.C., Ranschaert, D.S., & **Gunther, K.L.** L:M cone ratio affects red/green visual search for low contrast serial searches but not for high contrast popout searches. *mGluR's (Midwest/Great Lakes Undergraduate Research Symposium in Neuroscience)*, The College of Wooster, Wooster, OH.

2011 **Gunther, K.L.** & Dalhaus, R.N., III. Red/green color naming declines in the periphery. "Blue"/ "yellow" does not. What happens in visual search? *International Colour Vision Society,* Kongsberg, Norway.

2011 **Gunther, K.L.** & Dalhaus, R.N., III Red/green color naming declines in the periphery. "Blue"/ "yellow" does not. What happens in visual search? *Vision Sciences Society*, Naples, FL.

2010 Dalhaus, R.N., III, & **Gunther, K.L.** Red/green color naming declines in the periphery. "Blue"/ "yellow" does not. What happens in visual search? *Optical Society of America, Fall Vision Meeting*, University of Rochester, Rochester, NY, abstract published in *Journal of Vision, 11*(11): 359; doi: 10.1167/11.11.359

2010 Dalhaus, R.N., III, & **Gunther, K.L.** Red/green color naming declines in the periphery. "Blue"/ "yellow" does not. What happens in visual search? *mGluR's (Midwest/Great Lakes Undergraduate Research Symposium in Neuroscience)*, Ohio Wesleyan University, Delaware, OH.

2007 Neitz, M., **Gunther, K.L.**, & Neitz, J. How nucleotide polymorphisms upstream of the X-chromosome opsin gene array tune L:M cone ratio. *International Colour Vision Society*, Belem, Brazil.

ABSTRACTS (continued)

2007 Baraas, R.C., Carroll, J., **Gunther, K.L.**, Chung, M., Williams, D.R., Foster, D.H., & Neitz, M. S-cone dystrophy in tritan color-vision deficiency revealed by adaptive-optics retinal imaging. *Association for Research in Vision and Ophthalmology Abstr.* #3180.

2006 Baraas, R.C., Carroll, J., **Gunther, K.L.**, Chung, M., Chen, L., Williams, D.R., Neitz, M., & Foster, D.H. A progressive form of tritanopia revealed with adaptive-optics retinal imaging. *Engineering the Eye II.*

2006 **Gunther, K.L.**, Neitz, M., & Neitz, J. L:M cone contribution to heterochromatic flicker photometry. *Association for Research in Vision and Ophthalmology Abstr.* #3695.

2005 **Gunther, K.L.**, Neitz, J., & Neitz, M. A novel mutation in the short-wavelength sensitive cone pigment gene associated with a tritan colour vision defect. *International Colour Vision Society*, Lyon, France.

2004 **Gunther, K.L.**, Bojar, J.A., Harrison, G.L.A., Shashidhar, V.M., Pawar, S.D., Neitz, J., Neitz, M. The role of relaxed natural selection against colorblindness in producing extreme variation in X-chromosome photopigment gene number and sequence among individuals with normal color vision. *Optical Society of America, Fall Vision Meeting*, abstract published in *Journal of Vision,* 4(11), 53a, http://journalofvision.org/4/11/53/DOI 101167/4.11.53

2004 **Gunther, K.L.** & Dobkins, K.R. Both L+M and L-M mechanisms contribute to brightness induction. *Optical Society of America, Fall Vision Meeting*, abstract published in *Journal of Vision,* 4(8), 348a, http://journalofvision.org/4/8/348, DOI 10.1167/4.8.348

2003 **Gunther, K.L.**, Neitz, J., & Neitz, M. A novel missense mutation in the S cone photopigment in a male who made tritan errors on the Neitz Test of Color Vision. *Association for Research in Vision and Ophthalmology Abstr.* #1907.

2002 Dobkins, K.R. & **Gunther, K.L.** Chromatic contrast sensitivity is constrained by the relative number of L- vs. M-cones in the eye. *Optical Society of America, Fall Vision Meeting*, abstract published in *Journal of Vision,* 2(10), 53a, http://journalofvision.org/2/10/53, DOI 10.1167/2.10.53.

2000 **Gunther, K.L.** & Dobkins, K.R. Color contrast sensitivity: Independence of the cardinal axes and influence of L:M cone ratios as determined by factor analysis. *Association for Research in Vision and Ophthalmology Abstr.,* Vol. 41(4), 4289, p. S808.

1998 **Gunther, K.L.**, Peterzell, D.H., & Dobkins, K.R. Are red/green isoluminance matches served by the same spatiotemporal *covariance* mechanisms that underlie chromatic and luminance contrast sensitivity? *Association for Research in Vision and Ophthalmology Abstr.,* Vol. 39(4), 4986, p. S1078.

1997 **Gunther, K.L.**, Peterzell, D.H., & Dobkins, K.R. What mechanisms underlie red/green isoluminance matches at various spatial and temporal frequencies? *Association for Research in Vision and Ophthalmology Abstr.,* Vol. 38(4), 4170, p. S892.

ABSTRACTS (continued)

1996 Decker, M.W., Bannon, A.W., Curzon, P., **Gunther, K.L.**, Brioni, J.D., Holladay, M.W., Lin, N-H., Li, Y., Daanen, J., Buccafusco, J.J., Prendergast, M.A., Jackson, W.J., & Arneric, S.P. Effects of ABT-089, a novel cholinergic channel modulator, on cognitive performance in rats and monkeys. *Society for Neuroscience Abstr.,* Vol. 22, 502.10, p. 1263.

1996 Bannon, A.W., **Gunther, K.L.**, & Decker, M.W. Behavioral experience differentially alters the antinociceptive effect of morphine and (±)-epibatidine in mice. *Society for Neuroscience Abstr.,* Vol. 22, 541.6, p. 1366.

1995 **Gunther, K.L.**, Bannon, A.W., Decker, M.W., & Williams, M. Attenuation of (±)-epibatidine's analgesic effect with acute caffeine or theophylline treatment. *Society for Neuroscience Abstr.*, Vol. 21(3), 247.11, p. 606.

1995 Decker, M.W., **Gunther, K.L.**, & Curzon, P. Effects of continuous infusion of (-)-nicotine on activity, acoustic startle, and spatial learning in septal-lesioned rats. *Society for Neuroscience Abstr.*, Vol. 21(1), 69.8, p. 159.

1995 Bannon, A.W., Curzon, P., **Gunther, K.L.**, & Decker, M.W. Injection of 192-IgG-saporin into the medial septal area exacerbates a spatial memory deficit in aged rats. *Society for Neuroscience Abstr.*, Vol. 21(3), 763.12, p. 1946.

1995 Kowaluk, E.A., Kohlhaas, K.L., **Gunther, K.L.**, Alexander, K.M., Daanen, J., Cowart, M., Wagenaar, F., & Kerwin, J.F., Jr. A-84643 selectively inhibits brain nitric oxide synthase. *FASEB J.* 9:A680.

1994 Bannon, A.W., **Gunther, K.L.**, & Decker, M.W. Further characterization of the in vivo effects of (±)-epibatidine, a potent nicotinic ligand. *Society for Neuroscience Abstr.*, Vol. 20 (2), 467.7, p. 1135.

VOLUNTEER WORK

- League of Women Voters of Montgomery County (Indiana), Secretary & Education Fund Coordinator
  2011 – present
- Co-organizer of annual Brain Day, Carnegie Museum, Crawfordsville, IN.
  2009 – present (except 2020-22 pandemic years)
- Oberlin College Class of 1992 Vice President
  2006 – 2011
- Oberlin College Regional Alumni Coordinator
  2005 – 2006. Milwaukee, WI
  1996 – 2002. San Diego County, CA
  1998 Regional Alumni Coordinator of the Year
- Oberlin College Alumni Recruiter
  1994 – 2016
- Quilt Guild Board Member
  2010 – 2011 & 2013 – 2014. President. Sugar Creek Quilters (Crawfordsville, IN)
  2009 – 2010 & 2025 – 2026. Vice President. Sugar Creek Quilters (Crawfordsville, IN)
  2005 – 2006. Secretary. Falls Quilters (Menomonee Falls, WI)
  2002 – 2003. Secretary. West Suburban Quilters (Brookfield, WI)
  1995 – 2001. Canyon Quilters (San Diego, CA): representative to the Southern California Council of Quilt Guilds (1998 – 2001), secretary (1999 – 2001), philanthropic committee (1996 – 1998)

VOLUNTEER WORK (continued)

- NPR Fund Drive Volunteer
  2008 – 2015. WFYI (Indianapolis, IN)
  Promoted to WFYI Fund Drive Supervisor April 2013.
  2006 – 2007. WAMU (Washington, DC)
  2003 – 2004. WKSU (Kent, OH)
  1996 – 2002. KPBS (San Diego, CA)
  1993 – 1995. WBEZ (Chicago, IL)
- Oberlin Senior's, Inc. (Oberlin, OH). 1990 – 1992. Four hours per week weaving and teaching others in the craft room, performing occasional concerts (violin), and creating topics for and leading a weekly discussion group.