

## CURRICULUM VITAE

### VICKI J. VOLBRECHT

#### ADDRESS

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#### EDUCATION

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- 1988 Ph.D. Psychology, University of Colorado, Boulder  
Dissertation: "The Induction of Blackness"
- 1984 M.A. Psychology, University of Colorado, Boulder  
Thesis: "Induced Blackness is Inversely Related to the  
Luminosity Function"
- 1979 B.A. Psychology, University of Wisconsin, Madison

#### POSITIONS

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Professor, Colorado State University, Ft. Collins, Department of Psychology, 2002 to present

Associate Chair, Colorado State University, Ft. Collins, Department of Psychology, 2004 to 2008

Associate Professor, Colorado State University, Ft. Collins, Department of Psychology, 1995 to 2002

Assistant Professor, Colorado State University, Ft. Collins, Department of Psychology, 1989 to 1995

Visiting Assistant Professor, University of Colorado, Boulder, Department of Psychology, Summer 1991

Postdoctoral Fellow, University of California, Berkeley, School of Optometry, 1988-1989

Teaching and Research Assistant, University of Colorado, Boulder, 1981-1983, 1985-1988

Visiting Researcher, Neurology and Neurophysiology Clinic, Freiburg, Germany, 1984

## **PROFESSIONAL ASSOCIATIONS**

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Association for Research in Vision and Ophthalmology  
Front Range Neuroscience Group  
International Colour Vision Society  
Inter-Society Color Council  
Optical Society of America  
Sigma Xi

## **FUNDING**

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Nerger, J.L. and Volbrecht, V.J. (2006, not funded) "Rod Influence on Human Color Perception", National Science Foundation (collaborative proposal with Steve Buck at the University of Washington, Seattle).

Nerger, J.L. and Volbrecht, V.J. (2001, not funded) "Color Vision in the Peripheral Retina", National Science Foundation.

Volbrecht, V.J. and Nerger, J.L. (1997-2001) "Color Vision in the Peripheral Retina", National Science Foundation (IBN-9603613) \$316,847

Loomis, R., Nerger, J.L. and Volbrecht, V.J. (1992-1993) "Visibility Assessment", Cooperative Institute for Research in the Atmosphere, \$65,500.

Nerger, J.L. and Volbrecht, V.J. (1992-1993) Career Enhancement Award, Colorado State University Provost Office, \$6750.

Nerger, J.L. and Volbrecht, V.J. (1990-1991) Career Enhancement Award, Colorado State University Provost Office, \$7684.

Nerger, J.L. and Volbrecht, V.J. (1990-1991) Instructional Funds, Colorado State University College of Natural Sciences, \$14,000.

Volbrecht, V.J. (1990) "Neural Processes Mediating Anomalous Color Vision", National Institutes of Health Biomedical Research Support Grant, \$2500.

Volbrecht, V.J. (1989-1990) Career Enhancement Award, Colorado State University Provost Office, \$3500.

## **CURRENT RESEARCH**

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Peripheral color vision and color vision models

## **PUBLICATIONS**

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Troup, L.J., Pitts, M.A., Volbrecht, V.J. and Nerger, J.L. (2005) Effect of stimulus intensity on the sizes of chromatic perceptive fields. **Journal of the Optical Society of America A** **22**, 2137-2142.

Pitts, M.A., Troup, L.J., Volbrecht, V.J. and Nerger, J.L. (2005) Chromatic perceptive field sizes change with retinal illuminance. **Journal of Vision** **5**, 435-443.

Imhoff, S.M., Volbrecht, V.J. and Nerger, J.L. (2004) A new look at the Bezold-Brücke hue shift in the peripheral retina. **Vision Research** **44**, 1891-1906.

Nerger, J.L., Volbrecht, V.J., and Haase, K.A. (2003) The influence of rods on color naming during dark adaptation. In J. Mollon, J. Pokorny and K. Knoblauch (eds), **Normal and Defective Color Vision**. Oxford University Press, Chapter 19.

Volbrecht, V.J. Shrago, E.E., Schefrin, B.E. and Werner, J.S. (2001) Ricco's areas for the S- and L-cone mechanisms across the retina. **Color Vision and Research Application** **26**, 32-35.

Nerger, J.L. and Volbrecht, V.J. (2000) **Sensation and Perception Laboratory Manual**. New York: Thomson Learning Custom Publishing.

Volbrecht, V.J., Shrago, E.E., Schefrin, B.E.. and Werner, J.S. (2000) Spatial summation in human cone mechanisms from 0° to 20° in the superior retina. **Journal of the Optical Society of America A** **17**, 641-650.

Volbrecht, V.J., Nerger, J.L., Imhoff, S.M. and Ayde, C.J. (2000) Effect of the short-wavelength-sensitive-cone mosaic and rods on the locus of unique green. **Journal of the Optical Society of America A** **17**, 628-634.

Nerger, J.L., Volbrecht, V.J., Ayde, C.J., and Imhoff, S.M. (1998) Effect of S-cone mosaic and rods on red/green equilibria. **Journal of the Optical Society of America A** **15**, 2816-2828.

Volbrecht, V.J. and Kliegl, R. (1998) The perception of blackness: An historical and contemporary review. In **Color Vision-Perspectives from Different Disciplines**. W. Backhaus, R. Kliegl, and J.W. Werner (eds). Berlin: De Gruyter.

Volbrecht, V.J., Nerger, J.L. and Harlow, C.E. (1997) The bimodality of unique green revisited. **Vision Research** **37**, 407-416.

Nerger, J.L., Volbrecht, V.J. and Ayde, C.J. (1995) Unique hue judgments as a function of test size in the fovea and at 20-deg temporal eccentricity. **Journal of the Optical Society of America A** **12**, 1225-1232.

Bieber, M., Volbrecht, V.J. and Werner, J.S. (1995) Spectral efficiency measured by heterochromatic flicker photometry is similar in human infants and adults. **Vision Research** **35**, 1385-1392.

Volbrecht, V.J., Schneek, M.E., Adams, A.J., Linfoot, J.A. and Ai, E. (1994) Diabetic short-wavelength sensitivity: Variations with induced changes in blood glucose level. **Investigative Ophthalmology and Visual Science** **35**, 1243-1246.

Volbrecht, V.J. (1993) Perceptual learning meets associative learning. **New Ideas in Psychology** **11**, 285-286.

Schneck, M.E., Adams, A.J., Volbrecht, V.J. and Linfoot, J.A. (1993) Acute changes in blood glucose and their effects on color vision function in diabetes. In **Colour XI**, B. Drum (ed). Dordrecht, The Netherlands: Kluwer Academic Publishers.

Sharpe, L.T. and Volbrecht, V.J. (1990) Estimating middle-wavelength and long-wavelength cone sensitivity with large, long-duration targets and small, brief targets. **Perception** **19**, 745-757.

Schneck, M.E., Adams, A.J., Volbrecht, V.J. and Haegerstrom-Portnoy, G. (1990) LWS cone effects on rod threshold and saturation in achromats with residual cone function. **Vision Research** **30**, 973-983.

Volbrecht, V.J., Werner, J.S. and Cicerone, C.M. (1990) Additivity of spatially-induced blackness. **Journal of the Optical Society of America A** **7**, 106-112.

Volbrecht, V.J. and Werner, J.S. (1989) Temporal induction of blackness: 2. Spectral efficiency and tests of additivity. **Vision Research** **29**, 1437-1455.

Volbrecht, V.J., Werner, J.S. and Wooten, B.R. (1989) Temporal induction of blackness: 1. Color appearance. **Vision Research** **29**, 1425-1436.

Volbrecht, V.J., Aposhyan, H.M. and Werner, J.S. (1988) The perception of electronic display colours as a function of retinal illuminance. **Displays** **9**, 56-64.

Volbrecht, V.J. and Werner, J.S. (1987) Isolation of short-wavelength-sensitive cone photoreceptors in 4-6 week-old human infants. **Vision Research** **27**, 469-478.

Cicerone, C.M., Volbrecht, V.J., Donnelly, S.K. and Werner, J.S. (1986) The perception of blackness. **Journal of the Optical Society of America A** **3**, 432-436.

Kliegl, R., Volbrecht, V.J. and Werner, J.S. (1984) Influences of variation in lenticular and macular pigmentation on dichromatic neutral points. In **Colour VII**. G. Verriest (ed). The Hague, The Netherlands: Dr. W. Junk Publishers.

Healy, A.F., Volbrecht, V.J. and Nye, T.R. (1983) The effects of perceptual condition on proofreading for misspellings. **Memory and Cognition** **11**, 528-538.

Rajecki, D.W., Nerenz, D.R., Hoff, S.J., Newman, E.R. and Volbrecht, V.J. (1981) Early development of aggression in chickens: The relative importance of pecking and leaping. **Behavioural Processes** **6**, 239-248.

Volbrecht, V.J. and Schwartz, M. (1979) Transfer effects in a deductive reasoning problem. **Bulletin of the Psychonomic Society** 14, 347-350.

## **PRESENTATIONS**

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Baker, L.S., Trujillo, A.R., Volbrecht, V.J. and Nerger, J.L. Does foveal-like peripheral color appearance exist? **Annual Meeting: Association for Research in Vision and Ophthalmology**, April 2008, Fort Lauderdale, Florida.

Baker, L.S. Trujillo, A.R., Youngpeter, K., Nerger, J.L. and Volbrecht, V.J. Changes in peripheral color appearance linked to changes in rod input. **Front Range Neuroscience Group**, December 2007, Fort Collins, Colorado.

Baker, L.S., Trujillo, A.R., Youngpeter, K., Nerger, J.L. and Volbrecht, V.J. As time goes by: Peripheral color appearance following photobleaching. **Fall Vision Meeting**, September 2007, Berkeley, California (Abstract published in **Journal of Vision**, 2007, **7(15)**, 9a)

Dakin, M.A, Volbrecht, V.J. and Nerger, J.L. Bezold-Brücke hue shifts derived from hue-naming functions. **Fall Vision Meeting**. October 2005, Tucson, Arizona. (Abstract published in **Journal of Vision**, 2005, **5(12)**, 56a)

Pitts, M.A., Volbrecht, V.J., Troup, L.J., Nerger, J.L. and Dakin, M.A. Color appearance in the peripheral retina as a function of stimulus size and intensity under rod-bleach conditions. **Annual Meeting: Vision Science Society**. May 2005, Sarasota, Florida. (Abstract published in **Journal of Vision**, 2005, **5(8)**, 276a)

Troup, L.J., Pitts, M.A., Volbrecht, V.J. and Nerger, J.L. Chromatic perceptive field sizes: Changes with adaptation and intensity. **Annual Meeting: Front Range Neuroscience Group**. November 2004, Fort Collins. Colorado.

Pitts, M.A., Troup, L.J. , Volbrecht, V.J., Ferguson, T. and Janice L. Nerger. Effects of adaptation and stimulus intensity on chromatic perceptive field sizes. **Annual Meeting: Rocky Mountain Region Neuroscience Group**. June 2004, Denver, Colorado.

Volbrecht, V.J., Dakin, M.A., and Nerger, J.L. The use of color-naming functions to evaluate Bezold-Brücke hue shifts in the peripheral retina. **Annual Meeting: Association for Research in Vision and Ophthalmology**. May 2004, Ft. Lauderdale, Florida.

Troup, L.J., Pitts, M.A., Volbrecht, V.J. and Nerger, J.L. Effects of adaptation and stimulus intensity on perceptive field sizes. **Annual Meeting: Association for Research in Vision and Ophthalmology**. May 2004, Ft. Lauderdale, Florida.

Pitts, Michael A., Troup, Lucy J., Baker, Lucinda .L., Volbrecht, Vicki J. and Nerger, Janice L. Changes in Perceptive Field Size with Intensity: Implications for Rod Contribution to Color Appearance in the Peripheral Retina. **Molecular, Cellular, and**

**Integrative Neuroscience Group Poster Session, Colorado State University.**  
February 2004, Ft. Collins, Colorado.

Troup, Lucy J., Pitts, Michael A., Volbrecht, Vicki J., Baker, Lucinda L., Nerger, Janice L. Changes in Perceptive Field Size with Intensity: Implications for Rod Contribution to Color Appearance in the Peripheral Retina. **Front Range Neuroscience Group Meeting**, December 2003, Fort Collins, Colorado.

Pitts, M.A., Troup, L. J., Baker, L. L., Volbrecht, V. J., Nerger, J. L. The Effect of Intensity on Perceptive Field Size, **Fall Vision Meeting**, Oct 2003, Tucson, Arizona. (Abstract published in **Journal of Vision**, 2003, **3(12)**, 35a)

Angel, C.L., Randell, C.E., Volbrecht, V.J., and Nerger, J.L. The effect of rods on perceptive field sizes at 10 degrees eccentricity in the four retinal quadrants. **Fall Vision Meeting**, October 2002, San Francisco, California. . (Abstract published in **Journal of Vision**, 2002, **2(10)**, 56a.)

Randell, C.E., Angel, C.A., Volbrecht, V.J., and Nerger, J.L. Rod effects on color appearance in the temporal retina. **Annual Meeting: Association for Research in Vision and Ophthalmology**, May 2002, Ft. Lauderdale, Florida.

Haase, K.A., Volbrecht, V.J., Nerger, J.L., and Angel, C.L. Rod influence on color naming. **Fall Vision Meeting**, October, 2001, Irvine, California.

Volbrecht, V.J. Spatial areas and color vision. **Molecular, Cellular, and Integrative Neuroscience Group, Colorado State University**. September 2001, Ft. Collins, Colorado.

Nerger, J.L., Haase, K. A., and Volbrecht, V.J. The influence of rods on color naming during dark adaptation. **XVth Symposium: International Colour Vision Society**, July 2001, Cambridge, England.

Angel, C.L., Volbrecht, V.J. and Nerger, J.L. Effect of rods on unique hue loci. **Annual Meeting: Optical Society of America**, October 2000, Providence, Rhode Island.

Imhoff, S.M., Volbrecht, V.J. and Nerger, J.L. Differences in peripheral hue perception as revealed by the Bezold-Brücke hue shift. **Annual Meeting: Association for Research in Vision and Ophthalmology**, May 2000, Ft. Lauderdale, Florida. (Abstract published in supplement to **Investigative Ophthalmology and Visual Science**, 2000, **41**, S806.)

Imhoff, S.M. Volbrecht, V.J. and Nerger, J.L. Bezold-Brücke hue shifts at 0 degrees and 8 degrees in the four retinal quadrants. **Annual Meeting: Optical Society of America**, September 1999, Santa Clara, California.

Angel, C.L., Nerger, J.L. and Volbrecht, V.J. The influence of rods on the locus of unique green. **Annual Meeting: Optical Society of America**, September 1999, Santa Clara, California.

Volbrecht, V.J., Shrago, E.E., Schefrin, B.E. and Werner, J.S. The area of complete photopic spatial summation in human cone mechanisms. **XVth Symposium: International Colour Vision Society**, July 1999, Göttingen, Germany.

Harlow, C.E., Volbrecht, V.J. and Nerger, J.L. What determines the population variability in the locus of unique green? **Annual Meeting: Association for Research in Vision and Ophthalmology**, May 1999, Ft. Lauderdale, Florida. (Abstract published in supplement to **Investigative Ophthalmology and Visual Science**, 1999, **40**, S355.)

Imhoff, S.M., Volbrecht, V.J. and Nerger, J.L. Rod contribution to the Bezold-Brücke hue shift. **Annual Meeting: Association for Research in Vision and Ophthalmology**, May 1998, Ft. Lauderdale, Florida. (Abstract published in supplement to **Investigative Ophthalmology and Visual Science**, 1998, **39**, S161.)

Volbrecht, V.J. The effect of S cones on peripheral color vision. **University of Colorado**, April 1998, Boulder, Colorado.

Imhoff, S.M., Volbrecht, V.J. and Nerger, J.L. Can the Bezold-Brücke hue shift at 0°, 1°, and 8° nasal retinal eccentricity be explained by S-cone topography? **Annual Meeting: Optical Society of America**, October 1997, Long Beach, California.

Ayde, C.J., Nerger, J.L., Volbrecht, V.J. and Imhoff, S.M. Are unique hues affected by photoreceptor distributions at different retinal eccentricities? **Annual Meeting: Association for Research in Vision and Ophthalmology**, April 1996, Ft. Lauderdale, Florida. (Abstract published in supplement to **Investigative Ophthalmology and Visual Science**, 1996, **37**, S727.)

Harlow, C.E., Volbrecht, V.J. and Nerger, J.L. Distribution of unique green loci revisited. **Annual Meeting: Association for Research in Vision and Ophthalmology**, May 1994, Sarasota, Florida. (Abstract published in supplement to **Investigative Ophthalmology and Visual Science**, 1994, **35**, 2166.)

Volbrecht, V.J., Nerger, J.L. and Ayde, C.J. Unique hue judgments in the peripheral retina as a function of stimulus size, duration, and rod contribution. **Annual Meeting: Association for Research in Vision and Ophthalmology**, May 1993, Sarasota, Florida. (Abstract published in supplement to **Investigative Ophthalmology and Visual Science**, 1993, **34**, 765.)

Bieber, M., Volbrecht, V.J. and Werner, J.S. HFP spectral efficiency is similar for two-month-old infants and adults. **Annual Meeting: Association for Research in Vision**

**and Ophthalmology**, May 1993, Sarasota, Florida. (Abstract published in supplement to **Investigative Ophthalmology and Visual Science**, 1993, **34**, 1355.)

Nerger, J.L., Ayde, C.J. and Volbrecht, V.J. Unique hue judgments as a function of retinal eccentricity. **Annual Meeting: Optical Society of America**, September 1992, Albuquerque, New Mexico. (Abstract published in **Optical Society of America Technical Digest**, 1992, **23**, 100.)

Schneck, M.E., Adams, A.J., Volbrecht, V.J. and Linfoot, J.A. Acute changes in blood glucose and their effects on color vision function in diabetes. **International Symposium: International Research Group on Colour Vision Deficiencies**, June 1991, Sydney, Australia.

Volbrecht, V.J., Schneck, M.E. and Adams, A.J. Effects of blood glucose on diabetic short-wavelength sensitivity. **Annual Meeting: Association for Research in Vision and Ophthalmology**, May 1991, Sarasota, Florida. (Abstract published in supplement to **Investigative Ophthalmology and Visual Science**, 1991, **32**, 1283.)

Schneck, M.E., Volbrecht, V.J. and Adams, A.J. Immediate and significant changes in SW sensitivity accompany variations in blood glucose in diabetic observers. **Optical Society Meeting: Noninvasive Assessment of the Visual System**, Feb 1991, Santa Fe, New Mexico. (Abstract published in **Optical Society of America Technical Digest: Noninvasive Assessment of the Visual System**, 1991, 204-207.)

Schneck, M.E., Adams, A.J. and Volbrecht, V.J. Dependence of SWS sensitivity on acute blood glucose in diabetics. **Annual Meeting: American Academy of Optometry**, Dec 1990, Nashville, Tennessee.

Schneck, M.E., Adams, A.J., Volbrecht, V.J. and Haegerstrom-Portnoy, G. Residual cone functions in "rod monochromats" and the mechanisms of rod-cone interactions. **Optical Society Meeting: Noninvasive Assessment of the Visual System**, Feb 1990, Incline Village, Nevada. (Abstract published in **Optical Society of America Technical Digest: Noninvasive Assessment of the Visual System**, 1990, 204-207.)

Volbrecht, V.J., Adams, A.J., Linfoot, J.A., Hampton, S. and Nakagawa, J. Visual sensitivity and metabolic control in diabetics. **Annual Meeting: Association for Research in Vision and Ophthalmology**, May 1989, Sarasota, Florida. (Abstract published in supplement to **Investigative Ophthalmology and Visual Science**, 1989, **30**, 410.)

Schneck, M.E., Volbrecht, V.J., Adams, A.J. and Haegerstrom-Portnoy, G. Rod saturation on steady and flashed backgrounds in rod monochromats. **Annual Meeting: Association for Research in Vision and Ophthalmology**, May 1989, Sarasota, Florida. (Abstract published in supplement to **Investigative Ophthalmology and Visual Science**, 1991, **30**, 455.)



Volbrecht, V.J. and Werner, J.S. Additivity of induced blackness. **Annual Meeting: Optical Society of America**, Nov 1988, Santa Clara, California. ((Abstract published in **Optical Society of America Technical Digest**, 1988, **11**, 115.)

Volbrecht, V.J., Werner, J.S. and Wooten, B.R. Phenomenology of blackness induction. **Annual Meeting: Optical Society of America**, Oct 1987, Rochester, New York. (Abstract published in **Journal of the Optical Society A**, 1987, **4**, P120.)

Volbrecht, V.J. and Werner, J.S. Spectral efficiency of perceived blackness measured by temporal induction. **Annual Meeting: Association for Research in Vision and Ophthalmology**, May 1987, Sarasota, Florida. (Abstract published in supplement to **Investigative Ophthalmology and Visual Science**, 1987, **28**, 213.)

Volbrecht, V.J. and Werner, J.S. Isolation of short-wave cone photoreceptors in 4-6 week-old human infants. **Annual Meeting: Association for Research in Vision and Ophthalmology**, May 1986, Sarasota, Florida. (Abstract published in supplement to **Investigative Ophthalmology and Visual Science**, 1986, **27**, 264.)

Sharpe, L.T., Fach, C. and Volbrecht, V.J. Dynamic changes in sensitivity to incremental flashes during adaptation and recovery. **European Conference on Visual Perception**, September 1985, Pensacola, Spain.

Sharpe, L.T. and Volbrecht, V.J. Colour mechanisms and opponent processes: An increment threshold analysis. **German Physiological Society**, March 1985, Berlin, Germany

Cicerone, C.M., Volbrecht, V.J., Werner, J.S. and Donnelly, S.K. The perception of blackness. **Annual Meeting: Association for Research in Vision and Ophthalmology**, May 1984, Sarasota, Florida. (Abstract published in supplement to **Investigative Ophthalmology and Visual Science**, 1984, **25**, 234.)

Healy, A.F., Volbrecht, V.J. and Nye, T.R. The effects of perceptual condition on proofreading for misspellings. **Annual Meeting: Psychonomic Society**, Nov 1983, San Diego, California.

Volbrecht, V.J., Werner, J.S. and Kliegl, R. Effect of age-correlated changes in lenticular and macular pigmentation on dichromatic neutral points. **European Conference on Vision Perception**, August 1983, Lucca, Italy.

Kliegl, R., Volbrecht V.J. and Werner, J.S. Computed shifts in dichromatic neutral points associated with variation in prereceptor screening pigments. **International Symposium: International Research Group on Colour Vision Deficiencies**, June 1983, Geneva, Switzerland.

## **TEACHING**

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Undergraduate: Cognitive Psychology  
Honor's Seminar  
Sensation and Perception (Lecture Course and Supervision of Lab)

Graduate: Methods of Research (Statistics)  
Research Issues and Models - General Experimental (Research Methods)  
Seminars (Visual System and Comparative Vision)

## **PEER REVIEWS**

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British Journal of Ophthalmology	New Ideas in Psychology
Color Research and Application	Ophthalmic and Physiological Optics
Colour XI	Optometry and Vision Science
Diabetes Care	Perception
Journal of the Optical Society A	Perception & Psychophysics
Journal of Vision	Vision Research
National Science Foundation	Visual Neuroscience

## **HONORS**

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Dr. Albert William Heyer, Jr. Scholarship, University of Colorado, 1987  
Graduate School Foundation Fund Award, University of Colorado, 1986  
Supplemental Doctoral Fellowship, University of Colorado, 1983-1985  
German Academic Exchange Service Scholarship, 1984 (declined)  
Four Year Undergraduate Scholarship, Woodstock Die Casting Company, 1975-1979

## **SERVICE**

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University: Human Research Committee (1993 to 2004, chair 1998 to 2004)  
University Club Board of Directors (1995 to 2001)  
Mid-Career Development Committee (1997)

College: College Curriculum Committee (2004 to present)  
Undergraduate Scholarship Committee (1992 to present)

Department: Associate Department Chair (2004 to present)  
Department Scholarship Committee (2004 to present)  
Undergraduate Committee Chair (2004 to present)  
Experimental Psychology Coordinator (1996-1999)  
Executive Committee (1995-1999, 2004-present)  
Carol Baird Scholarship Committee (1994-1998)  
Experimental Psychology Graduate Admissions Coordinator (1993-1994)  
Search Committee Chair (1993 and 1996)  
Graduate Committee (1993-1995)  
Search Committee Member (1991, 1993, 2004, 2006, 2007)  
Seligman Award Committee (1991)