Sara Stokes Patterson, Ph.D.

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EDUCATION

09.2015 – 07.2020 **Ph.D. in Neuroscience**, University of Washington
Thesis: Structure and function of S-cone opponent circuits in the primate retina

08.2010 – 05.2014 **B.S. in Neuroscience**, Dickinson College
Honors in Neuroscience, Minor in Psychology

RESEARCH EXPERIENCE

08.2020 – Present *Postdoctoral Fellow*, University of Rochester
Lab: David Williams, Center for Visual Science
Ganglion cell classification with adaptive optics, calcium imaging and circuit tracing

09.2016 – 07.2020 *Graduate Student*, University of Washington
Lab: Jay Neitz, Department of Ophthalmology
Primate retinal circuitry with electrophysiology and electron microscopy

08.2014 – 08.2015 *Post-baccalaureate IRTA*, National Institutes of Health
Lab: Ralph Nelson, Neural Circuits Unit, NINDS
Zebrafish retinal development using ERG and confocal microscopy

11.2010 – 05.2014 *Research Assistant*, Dickinson College
Lab: Jonathan Page, Department of Psychology
Role of V1 in mental imagery with visual evoked potentials and EEG

06.2013 – 08.2013 *Summer Intern*, National Institutes of Health
Lab: Ralph Nelson, Neural Circuits Unit, NINDS
Photoreceptor function assessment in transgenic zebrafish lines

TEACHING EXPERIENCE

07.31 – 08.04.2023 *Guest Instructor*, International Color Vision Society Summer School
Lecture on retinal processing of color, mentor for projects and outreach activities

Spring 2023 *Co-Instructor*, University of Rochester
OPTICS 489: The Retina-Brain Interface

Summer 2018-2020 *Mentor*, University of Washington
Mentored high school students in serial EM research projects

Fall 2017 *Teaching Assistant*, University of Washington
NBIO 302: Introduction to Systems Neurobiology

Summer 2015 *Mentor*, National Institutes of Health
Supervised intern who won the NINDS Exceptional Summer Intern Award

08.2013 – 05.2014 *Head Lab Assistant*, Dickinson College
Supervised and trained three new lab members in EEG and EMG

ADDITIONAL TRAINING

06.2019	Cold Spring Harbor Vision Course
08.2018	Allen Institute Dynamic Brain Summer Course in Computational Neuroscience

FUNDING

Individual Grants

Pending	**K99-EY035323**	National Eye Institute, NIH
	Title: Linking Rare Primate Ganglion Cells to Downstream Visual Functions	
	PI: Patterson, University of Rochester	Impact Score: 18
06.2021 – 06.2023	**F32-EY032318**	National Eye Institute, NIH
	Title: Foveal Ganglion Cell Function in the Living Eye	
	PI: Patterson, University of Rochester	

Positions on Institutional Training Grants

08.2020 – 06.2021	**T32-EY007125**	National Eye Institute, NIH
	PI: Tadin, University of Rochester	
06.2018 – 06.2019	**T32-EY007031**	National Eye Institute, NIH
	PI: Pasupathy, University of Washington	
06.2016 – 06.2017	**T32-NS099578**	National Institute of Neurological Disorders & Strokes
	PI: Sullivan, University of Washington	

Contributions to Funded Grants

03.2022 – 03.2025	**FA9550-22-1-0167**	Air Force Office of Scientific Research (MURI)
	Title: Single Retinal Ganglion Cells and Sensation	
	PI: Williams, University of Rochester	
03.2022 – 03.2023	**FA9550-22-1-0044**	Air Force Office of Scientific Research (DURIP)
	Title: Super Resolution Adaptive Optics Ophthalmoscope for Revealing the Retinal Code	
	PI: Williams, University of Rochester	
01.2021 – 11.2025	**R01-EY031467**	National Eye Institute, NIH
	Title: High Resolution Mapping of Foveal Receptive Fields in the Living Primate Eye	
	PI: Williams/Merigan, University of Rochester	
02.2018 – 01.2023	**R01-EY027859**	National Eye Institute, NIH
	Title: Linking Retinal Circuits to Perception	
	PI: Neitz, University of Washington	

AWARDS

10.2022	Young Investigator Award, Optica Fall Vision Meeting
09.2021	Steadman Family Postdoctoral Prize for Interdisciplinary Research
07.2019	Patmalnieks Award for Best Student Talk, International Color Vision Society Meeting
07.2019	International Color Vision Society Travel Grant
05.2019	Association for Research in Vision and Ophthalmology Travel Grant
09.2018	Best Collaboration Award, Allen Institute Dynamic Brain Summer Course
05.2015	Post-baccalaureate Poster Award and Travel Grant, NINDS Annual Symposium
08.2014	McAndrews Award for Outstanding Female Scholar-Athlete, Dickinson College
08.2013	NINDS Exceptional Summer Intern Award
05.2013	Psi Chi National Honor Society
05.2012	Outstanding Research Poster Award, Dickinson Science Research Symposium
01.2011	Alpha Lambda Delta Freshman Honor Society

SERVICE

Postdoctoral Representative, Center for Visual Science Executive Committee, University of Rochester
Founder, Center for Visual Science Postdoctoral Seminar Series, University of Rochester
NeuroYES Postdoctoral Seminar Series Committee, University of Rochester
Center for Visual Science Retreat Committee, University of Rochester
Mentor, Ophthalmology Summer Scholars Internship Program, University of Washington
Internal Seminar Coordinator, Neuroscience Seminar Series, University of Washington
Neuroscience Outreach Group, University of Washington
Mentor, Expand Your Horizons, American Association of University Women
Neuroscience Student Representative, Danish Institute for Study Abroad
Student Wellness Committee, Dickinson College

REVIEW

Journal of Comparative Neurology, Journal of Modern Optics, Journal of Neuroscience, Nature Communications, Perception, Proceedings of the National Academy of Sciences

PUBLICATIONS

Key: *co-first author, †corresponding author, mentee

16. Godat, T., Cottaris, N., **Patterson, S.S.**, Kohout, K., Parkins, K., Yang, Q., Strazzeri, J.M., McGregor, J.E., Brainard, D.H., Merigan, W.H., Williams, D.R. (2022) In vivo chromatic and spatial tuning of foveolar retinal ganglion cells in Macaca fascicularis. *PLoS ONE*, 17(11), e0278261
15. Nelson, R.F., Balraj, A., Suresh, T., Elias, L.J., Yoshimatsu, T., **Patterson, S.S.** (2022) Over-expression of thyroid hormone receptor β2 in zebrafish changes the distribution of cone spectral signals. *eNeuro*, 9(6)
14. Bordt, A.S., **Patterson, S.S.**, Kuchenbecker, J.A., Mazzaferri, M.A., Yearick, J.N., Yang, E.R., Ogilvie, J.M., Neitz, J., Marshak, D.W. (2022) Synaptic inputs to displaced intrinsically photosensitive ganglion cells in macaque retina. *Scientific Reports*, 12, 15160
13. **Patterson, S.S.**†, Bembry, B.N.., Mazzaferri, M.A., Neitz, M., Rieke, F., Soetedjo, R., Neitz, J. (2022) Conserved circuits for direction selectivity in the primate retina. *Current Biology*, 32(11), 2529-2538
12. **Patterson, S.S.**, Neitz, J., Neitz, M. (2022) S-cone circuits in the primate retina for non-image-forming vision. *Seminars in Cell and Developmental Biology*, 126, 66-70
11. Bordt, A.S., **Patterson, S.S.**, Girresch, R.J., Perez, D., Tseng, L., Anderson, J.R., Mazzaferri, M.A., Kuchenbecker, J.A., Gonzales-Rojas, R., Roland, A., Tang, C., Puller, C., Chuang, A.Z., Ogilvie, J.M., Neitz, J., Marshak, D.W. (2021) Synaptic inputs to broad thorny ganglion cells in macaque retina. *Journal of Comparative Neurology*, 529(11), 3098-3111
10. **Patterson, S.S.**†, Mazzaferri, M.A., Bordt, A.S., Chang, J., Neitz, M., Neitz, J.† (2020) Another Blue-ON ganglion cell in the primate retina. *Current Biology*, 30(23), R1409-R1410
9. Neitz, A., Jiang, X., Kuchenbecker, J.A., Domdei, N., Harmening, W., Yan, H., Yeonan-Kim, J., **Patterson, S.S.**, Neitz, M., Neitz, J., Coates, D., Sabesan, R. (2020) The effect of cone spectral topography on chromatic detection sensitivity. *Journal of the Optical Society of America A*, 37(4), A245-A255
8. **Patterson, S.S.**, Kuchenbecker, J.A., Anderson, J.R., Neitz, M., Neitz, J. (2020) A color vision circuit for non-image-forming vision in the primate retina. *Current Biology*, 30(7), 1269-1274
    - Rivera, A., Huberman, A. (2020) Coloring time: A chromatic retinal circuit encodes sunrise and sunset for the brain. *Current Biology*, 30, R316-R318

7. **Patterson, S.S.***, Bordt, A.S.*, Girresch, R.J., Linehan, C.M., Bauss, J., Yeo, E., Perez, D., Tseng, L., Navuluri, S., Harris, N.B., Matthews, C., Anderson, J.R., Kuchenbecker, J.A., Manookin, M.B., Ogilvie, J.M., Neitz, J., Marshak, D.W. (2019) Wide-field amacrine cell inputs to ON parasol ganglion cells in macaque retina. *Journal of Comparative Neurology*, 528(9), 1588-1598
6. **Patterson, S.S.**, Neitz, M., Neitz, J. (2019) Reconciling color vision models with midget ganglion cell receptive fields. *Frontiers in Neuroscience*, 13, 865
5. **Patterson, S.S.**, Kuchenbecker, J.A., Anderson, J.R., Bordt, A.S., Marshak, D.W., Neitz, M., Neitz, J. (2019) An S-cone circuit for edge detection in the primate retina. *Scientific Reports*, 9, 11913
4. Neitz, M., **Patterson, S.S.**, Neitz, J. (2019) Photopigment genes, cones and color: Disrupting the splicing code causes a diverse array of vision disorders. *Current Opinion in Behavioral Sciences*, 30, 60-66
3. Nelson, R.F., Balraj, A., Suresh, T., Torvund, M., **Patterson, S.S.** (2019) Strain variations in opsin peaks *in situ* during zebrafish development. *Visual Neuroscience*, 36, E010
2. Bordt, A.S., Perez, D., Tseng, L., Liu, W.S., Neitz, J., **Patterson, S.S.**, Famiglietti, E.V., Marshak, D.W. (2019) Synaptic inputs and connectivity of a sparsely branched ganglion cell in rabbit retina. *Visual Neuroscience*, 36, E004
1. Manookin, M.B., **Patterson, S.S.**, Linehan, C.M. (2018) Neural mechanisms mediating motion sensitivity in parasol ganglion cells of the primate retina. *Neuron*, 97, 1327-1340
    - Murphy-Baum, B.L., Awatramani, G.B. (2018) An old neuron learns new tricks: Redefining motion processing in the primate retina. *Neuron*, 97, 1205-1207

PUBLICATIONS IN PROGRESS

- Godat, T., Kohout, K., Parkins, K., Yang, Q., Strazzeri, J.M., McGregor, J.A., Merigan, W.H., Williams, D.R., **Patterson, S.S.**† (under review) Cone opponent ganglion cells in the primate fovea consistent with the psychophysical hue mechanisms. *Current Biology*
- **Patterson, S.S.***, Girresch, R.J.*, Mazzaferri, M.A., Bordt, A.S., Jesse, B.D., Perera, D.W., Schlepphorst, M.A., Teal, W.L., Kuchenbecker, J.A., Chuang, A.Z., Neitz, J., Marshak, D.W., Ogilvie, J.M. (submitted) Synaptic origins of the complex receptive field structure in smooth monostratified retinal ganglion cells.
- **Patterson, S.S.**, Neitz, M., Neitz, J. (submitted) The spectral sensitivity of neurons mediating black and white. Available on *bioRxiv* (doi: 10.1101/829051)
- **Patterson, S.S.**, Merigan, W.H., Williams, D.R. (in preparation) AOData: A data management platform for adaptive optics imaging of the eye.

BOOK CHAPTERS

- Neitz, M., **Patterson, S.S.**, Neitz, J. (2020) The genetics of cone opsin based vision disorders. In: *The Senses: A Comprehensive Reference*, 2nd edition, Vol. 1, pg. 493-507

PATENT APPLICATIONS

- 17/612,061: "Systems, Methods, and Devices for Stimulating Circadian Rhythms"

TALKS

04.23.2023	Association for Research in Vision and Ophthalmology. New Orleans, LA
10.21.2022	Optica Fall Vision Meeting. Rochester NY
10.13.2022	AFOSR Cognitive and Computational Neuroscience Program Review. Arlington, VA

09.16.2022 NINDS Festschrift for Ralph Nelson. Bethesda, MD
08.13.2022 Optica Summer Data Blitz. Virtual
07.18.2022 Air Force Office of Scientific Research MURI Workshop. Virtual
07.07.2022 Integrative Seminar in Chronobiology and Visual Neuroscience. Munich, Germany (virtual)
06.23.2022 FASEB Retinal Neurobiology and Visual Processing. Southbridge, MA
05.01.2022 Association for Research in Vision and Ophthalmology. Denver, CO
03.25.2022 Center for Visual Science Annual Retreat. Rochester, NY
10.14.2022 OSA Fall Vision Meeting. Seattle, WA (virtual)
05.03.2022 Association for Research in Vision and Ophthalmology. Virtual
12.11.2020 AOIP Young Investigator Seminar Series. Milwaukee, WI (virtual)
05.05.2020 University of Washington Spring Neuroscience Retreat. Seattle, WA
07.06.2020 International Color Vision Society Meeting. Riga, Latvia
04.28.2019 Association for Research in Vision and Ophthalmology. Vancouver, BC
04.10.2019 Janelia Farm Color Vision: Circuits and Behavior. Ashburn, VA
05.07.2018 Association for Research in Vision and Ophthalmology. Honolulu, HI
10.14.2017 OSA Fall Vision Meeting. Washington, DC

OPEN SOURCE SOFTWARE

- SBFSEM-tools: Data analysis and 3D visualization for serial electron microscopy (RRID: SCR_017350)
- AOData: Framework for managing data, metadata and code for adaptive optics imaging experiments
- OCT-tools: Semi-automatic segmentation of choroid from OCT
- h5tools-matlab: Toolbox of high-level functions for working with HDF5 files in MATLAB

CONFERENCE ABSTRACTS

28. **Patterson, S.S.**, Godat, T., Yang, Q., Merigan, W.H., Williams, D.R. (2022) Receptive field diversity in the primate foveal retina. *Investigative Ophthalmology & Visual Science*, 63(7), 4561
27. Kohout, K., **Patterson, S.S.**, Walker, A., Strazzeri, J., Williams, D.R., Merigan, W.H. (2022) In vivo and ex vivo characterization of macaque retinal ganglion cells projecting to the superior colliculus. *Investigative Ophthalmology & Visual Science*, 63(7), 4573
26. Usamani, H., **Patterson, S.S.**, Giarmarco, M.M., Neitz, M., Neitz, J., Kuchenbecker, J.A. (2022) Electrophysiological evidence for GABA-mediated feed-forward as a major cone signal ON pathway. *Investigative Ophthalmology & Visual Science*, 63(7), 4561
25. Marshak, D.W., Bordt, A.S., **Patterson, S.S.**, Kuchenbecker, J.A., Neitz, J. (2022) OFF bipolar cell inputs to ipRGCs in macaque retina. *Investigative Ophthalmology & Visual Science*, 63(7), 45
24. Godat, T., Cottaris, N.P., **Patterson, S.S.**, Kohout, K., Parkins, K., Yang, Q., Strazzeri, J.M., McGregor, J.E., Brainard, D.H., Merigan, W.H., Williams, D.R. (2022) In vivo calcium imaging reveals L/M opponent ganglion cells consistent with single cone receptive field centers at the macaque center fovea. *Investigative Ophthalmology & Visual Science*, 63(7), 4573
23. **Patterson, S.S.** (2021) The S-cone connectome of the primate retina. *Journal of Vision*, 22(3), 47
22. **Patterson, S.S.**, Bembry, B.N., Mazzaferri, M.A., Neitz, M., Rieke, F., Soetedjo, R., Neitz, J. (2021) Conserved neural mechanisms for direction selectivity in the primate retina. *Investigative Ophthalmology & Visual Science*, 62 (8), 1460-1460

21. Mazzaferri, M.A., **Patterson, S.S.**, Bordt, A., Kuchenbecker, J.A., Rezeanu, D., Barborek, R., Puller, C., Neitz, M., Neitz, J. (2021) The stellate varicose amacrine cell is positioned to provide a second layer of inhibition specific to the primate midget system. *Investigative Ophthalmology & Visual Science*, 62(8), 1458-1458
20. Neitz, J., **Patterson, S.S.**, Chang, J., Giebel, B.Q., Rieke-Wey, I., Neitz, M. (2020) Another blue-ON ganglion cell in the primate retina. *Investigative Ophthalmology & Visual Science*, 61(7), 2338
19. Marshak, D.W., Bordt, A.S., **Patterson, S.S.**, Girresch, R.J., Puller, C., Ogilvie, J.M., Neitz, J. (2020) Synaptic inputs to broad thorny ganglion cells from macaque retina. *Investigative Ophthalmology & Visual Science*, 61(7), 5139
18. Girresch, R.J., **Patterson, S.S.**, Bordt, A.S., Anderson, J.R., Kuchenbecker, J.A., Neitz, J., Marshak, D.W., Ogilvie, J.M. (2020) Synaptic input to parasol and smooth monostratified ganglion cells in central macaque retina. *Investigative Ophthalmology & Visual Science*, 61(7), 4625
17. **Patterson, S.S.**, Kuchenbecker, J.A., Anderson, J.R., Neitz, M., Neitz, J. (2019) An S-cone amacrine cell in the primate retina sets the circadian clock at sunrise and sunset. *Investigative Ophthalmology & Visual Science*, 60(9), 1373
16. Girresch, R.J., **Patterson, S.S.**, Bordt, A.S., Anderson, J.R., Kuchenbecker, J.A., Ogilvie, J., Neitz, J., Manookin, M.B., Marshak, D.W. (2019) Parasol and smooth monostratified retinal ganglion cells of the primate retina. *Investigative Ophthalmology & Vision Science*, 60(9), 5274
15. Kuchenbecker, J.A., **Patterson, S.S.**, Neitz, M., Neitz, J. (2019) The role of video display viewing in myopia. *Investigative Ophthalmology & Vision Science*, 60(9), 4267
14. **Patterson, S.S.**, Kuchenbecker, J.A., Doebley, A., Neitz, M., Neitz, J. (2018) The normal human visual system extracts about 1% of the hues possible from the L, M and S cones compared to a perfect hue encoder. *Journal of Vision*, 19(8), 81
13. Kuchenbecker, J.A., **Patterson, S.S.**, Neitz, M., Neitz, J., Manookin, M.B. (2018) Spectral density curves of the human lens inaccurate due to increased Rayleigh scatter in post-mortem eyes. *Journal of Vision*, 19(8)
12. Neitz, A., Jiang, X., Kuchenbecker, J.A., **Patterson, S.S.**, Doebley, A., Neitz, M., Neitz, J., Sabesan, R. (2018) High acuity vision corrected for chromatic and achromatic aberrations is associated with color discrimination without red-green or blue-yellow sensations. *Journal of Vision*, 19(8), 12
11. **Patterson, S.S.**, Kuchenbecker, J.A., Anderson, J.R., Linehan, C.M., Neitz, J. (2018) S-cone inputs to midget retinal ganglion cells and their implications for color vision. *Investigative Ophthalmology & Vision Science*, 59(9), 5691
10. Nelson, R., Balraj, A., Suresh, T., Torvund, M., **Patterson, S.S.** (2018) A computational method for determining opsin peak absorbance wavelengths from zebrafish PIII ERG responses. *Investigative Ophthalmology & Vision Science*, 59(9), 600
9. Kuchenbecker, J.A., **Patterson, S.S.**, Neitz, M., Neitz, J. (2018) Studying S-cone inputs to hue perception using a DLP based projector integrated with a spectrally tunable light source. *Investigative Ophthalmology & Vision Science*, 59(9), 4050
8. Neitz, A., Jiang, X., **Patterson, S.S.**, Doebley, A., Neitz, M., Neitz, J., Sabesan, R. (2018) Color detection without hue perception. *Investigative Ophthalmology & Vision Science*, 59(9), 5962
7. **Patterson, S.S.**, Kuchenbecker, J.A., Anderson, J.R., Neitz, M., Neitz, J., Manookin, M.B. (2017) Differences between S-OFF and L/M-OFF contacts inform the role of OFF midget bipolar cells in the perception of yellow. *Journal of Vision*, 17(15), 15
6. Kuchenbecker, J.A., **Patterson, S.S.**, Neitz, M., Neitz, J. (2017) Best of both worlds? A Maxwellian view visual stimulator incorporating a DLP spatiotemporal light driver with a programmable tunable spectrum source for studying human color vision. *Journal of Vision*, 17(15), 45

5. **Patterson, S.S.**, Yoshimatsu, T., Suresh, T., Nelson, R.F. (2016) The role of thyroid hormone receptor β2 (trβ2) in development of photoreceptor opsin and bipolar cell connectivity. *Investigative Ophthalmology & Vision Science*, 57(12), 587
4. Kuchenbecker, J.A., **Patterson, S.S.**, Manookin, M.B., Buhr, E., Neitz, M., Neitz, J. (2016) An ex vivo electroretinogram to study spectral mechanisms and cone pathways in the retina. *Investigative Ophthalmology & Vision Science*, 57(12)
3. **Patterson, S.S.**, Nelson, R.F. (2015) Spectral properties of a zebrafish transgenic with L-opsin expression in all cone types. *Investigative Ophthalmology & Vision Science*, 56(7), 994
2. Nelson, R.F., Abraham, R.R., **Patterson, S.S.**, Syrykowski, J.L., Li, L., Burgess, H.A., Connaughton, V.P. (2014) Zebrafish transgenic reports musashi1 (msi1) in retinal neurons. *Investigative Ophthalmology & Vision Science*, 55(13), 2369
1. Vitrano, D., Emery, A.C., **Patterson, S.S.**, Page, J.W. (2013) Imagine that! Comparing brain responses to imagining and perceiving novel stimuli. *Journal of Cognitive Neuroscience*, 264

CONFERENCE PRESENTATIONS

21. **Patterson, S.S.**, Godat, T., Kohout, K., Yang, Q., Merigan, W.H., Williams, D.R. "Functional classification of foveal ganglion cells in the living primate eye." *Society for Neuroscience Meeting*, November 2022
20. **Patterson, S.S.**, Godat, T., Kohout, K., Yang, Q., Merigan, W.H., Williams, D.R. "Functional classification of foveal ganglion cells in the living primate eye." *FASEB Retinal Physiology & Visual Processing*, June 2022
19. Godat, T., Cottaris, N.P., **Patterson, S.S.**, Kohout, K., Parkins, K., Yang, Q., Strazzeri, J.M., McGregor, J.E., Brainard, D.H., Merigan, W.H., Williams, D.R. "In vivo calcium imaging reveals L/M opponent ganglion cells consistent with single cone receptive fields at the macaque foveal center." *FASEB Retinal Neurobiology and Visual Processing,* June 2022
18. Cai, Y., Williams, D.R., Fienup, J.R., **Patterson, S.S.**, McGregor, J.E., Merigan, W.H. "Image scanning microscopy for *in vivo* ganglion cell classification." *Center for Visual Science Annual Retreat*, March 2022
17. Baez, H., Xu, Z., Kunala, K., **Patterson, S.S.**, Gullapalli, V., DiLoreto, D., McGregor, J.E. "Accelerating photoreceptor replacement therapy with *in vivo* cellular imaging in primates." *Center for Visual Science Annual Retreat*, March 2022
16. Godat, T., Cottaris, N.P., **Patterson, S.S.**, Kohout, K., Parkins, K., Yang, Q., Strazzeri, J.M., McGregor, J.E., Brainard, D.H., Merigan, W.H., Williams, D.R. "In vivo calcium imaging reveals L/M opponent ganglion cells consistent with single cone receptive fields at the macaque foveal center." *Center for Visual Science Annual Retreat*, March 2022
15. Kohout, K., **Patterson, S.S.**, Walker, A., Strazzeri, J.M., Williams, D.R., Merigan, W. "In vivo and ex vivo characterization of macaque ganglion cells projecting to the superior colliculus." *Center for Visual Science Annual Retreat*, March 2022
14. **Patterson, S.S.**, Neitz, M., Neitz, J. "The neural substrates encoding black, white and hue sensations." *International Color Vision Society*, July 2019
    - Received Latvijas Universitates Patmalnieks Award
13. Sabesan, R., Neitz, A., Jiang, X., Kuchenbecker, J., **Patterson, S.S.**, Neitz, M., Neitz, J., Coates, D. "Effect of cone spectral topography on achromatic and chromatic detection sensitivity." *International Color Vision Society Meeting*, July 2019
12. **Patterson, S.S.**, Kuchenbecker, J.A., Doebley, A., Neitz, M., Neitz, J. "The human visual system extracts 1% of the hues possible compared to a perfect hue encoder." *Gained In Translation Meeting*, September 2018

11. Estrada, M., **Patterson, S.S.**, Linehan, C.M., Neitz, M., Neitz, J. "Amacrine cell inputs to the S-cone pathway." *Gained In Translation Meeting*, September 2018
10. **Patterson, S.S.**, Kuchenbecker, J.A., Manookin, M.B., Neitz, M., Neitz, J. (2018) "Spatial, spectral and directional information in the small bistratified ganglion cell." *FASEB Retinal Physiology and Visual Processing*, July 2018
    - Selected for short "Data Blitz" talk
9. **Patterson, S.S.**, Neitz, M., Neitz, J., Manookin, M.B. "Midget ganglion cell circuits for achromatic and hue sensations." *Gained in Translation Meeting*, September 2016
8. **Patterson, S.S.**, Kuchenbecker, J., Neitz, M., Neitz, J., Manookin, M. "Subtypes of midget retinal ganglion cell in primate retina and their roles in color vision." *FASEB Retinal Physiology and Visual Processing*, July 2016
7. **Patterson, S.S.**, Suresh, T., Yoshimatsu, T., Nelson, R.F. (2015) Development of cone opsin expression in a transgenic line with crx-driven trβ2 expression." *Society for Neuroscience Annual Meeting*, November 2015
6. **Patterson, S.S.**, Nelson, R.F. "Spectral properties of a zebrafish transgenic with L-opsin expression in all cone types." *NINDS Annual Research Symposium*, May 2015
    - Received NINDS Post-baccalaureate Poster Award
5. **Patterson, S.S.**, Cohen, P.M., Strykowski, J.L., Burgess, H.A., Nelson, R.F. "Effects of Musashi1 in zebrafish retinal development: disruption of UV cone mosaic and ERG sensitivity." *National Institutes of Health Summer Poster Day*, August 2013
    - Received NINDS Outstanding Summer Intern Award
4. **Patterson, S.S.** "Blue color vision as a measure of dopamine levels among ADHD subtypes." *Dickinson College 29th Annual Science Research Symposium*, May 2014
    - Received Departmental Honors in Neuroscience
3. Gregory, K.A., Ludman, T., Liu, K.X., **Patterson, S.S.,** Page, J.W. "Context and rapid discrimination." *Dickinson College 29th Annual Science Research Symposium*, May 2014
2. **Patterson, S.S.** "Using synesthesia to study the role of color opponent process pathways in mental imagery." *Dickinson College Independent Psychology Research Symposium*, December 2013
1. Klyus, J., Norato, G., **Patterson, S.S.** "Developing algorithms to detect pain with EEG." *Dickinson College 27th Annual Science Research Symposium*, December 2012
    - Received Outstanding Research Poster Award