

AMY CATHERINE NAU

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EDUCATION AND TRAINING:

Undergraduate:

St. Michael's College, Winooski, VT
BA, History 1990

Graduate:

Harvard University, Cambridge MA Health Careers Program, 1995 New England College of Optometry, Boston MA O.D., 2000

Postgraduate:

Boston VA Health System, W. Roxbury MA, 2001 Residency, ocular disease

POSITIONS AND HONORS

01/01/2023-Founder, Eyewell, Inc.

10/2015-present Adjunct faculty, Assistant Clinical Professor, New England College of Optometry

7/2014- present Partner, Korb and Associates, Boston MA

7/2014- 7/2015 Assistant Professor, University of Pittsburgh, Department of Ophthalmology

6/2012- 6/2014 Director, Telemedicine UPMC Eye Center

6/2011- 6/2014 Executive Committee, UPMC Eye Center

3/2004- 6/2014 Director, Optometric, Medical Contact Lens and Low Vision Services
Department of Ophthalmology, University of Pittsburgh

1/2010- 6/2014 Director and Founder, Sensory Substitution Laboratory, UPMC Eye Center/ Fox Center for Vision Restoration

6/2004-6/2014 Director, UPMC Eye Center Optical Shops (six locations) 6/2003-6/2014

Assistant Professor, UPMC Eye Center/Department of Ophthalmology, University of Pittsburgh, secondary appointment at the McGowan Center for Regenerative Medicine

6/2003 -7/2011 Course Director, Optics and Contact Lenses courses for

University of Pittsburgh, Department of Ophthalmology

7/2001 -12/2003 Staff Optometrist, Department of Ophthalmology, Beth Israel Deaconess Medical Center, Boston, MA

2000 - 2003 Sub-Investigator, Ophthalmic Research Associates, Andover, MA 2000 -

2001 Per diem optometrist, For Eyes, Boston MA

1994 - 1998 Research Assistant, Ocular Research of Boston, Boston MA

LICENSURE

Commonwealth of Massachusetts 2000-2003, 2014 - present
State of Pennsylvania 2003-2014

HONORS/AWARDS

2013 Honorable Mention, ocular photography contest *Boston Keratoprosthesis with contact lens and fungal infiltrate*. American Academy of Optometry meeting, Seattle WA, 2013.

2012 American Optometric Association Summer Research Retreat, invited participant

2008 Western Pennsylvania Optometric Society "Young OD of the Year" 2002-08

New England College of Optometry Alumni Board, *member*

2000 Bausch and Lomb Excellence in Contact Lens Award

1996-00 Beta Sigma Kappa (Optometric Honor Society), Co-president 1997, President 1998

1996-00 American Academy of Optometry Student Member, New England College of Optometry Student Representative, 1999

1999 Baeder Outstanding Student Scholarship Award

1999 Bausch and Lomb American Academy of Optometry Travel Grant Award 1996-99

New England College of Optometry Student Ethics Committee Representative, *President*, 1999

1996-99 Student Affairs Committee, student representative

1998 Vistakon American Academy of Optometry Travel Grant Award 1997 New England Chapter, American Academy of Optometry Travel Grant Award

PROFESSIONAL ACTIVITIES

2022- present Fellows Doing Research section American Academy of Optometry; member Steering Committee

2022- present Diplomate, American Academy of Optometry Cornea Contact Lens and Refractive Technology section

2020-present American Academy of Optometry Section on Cornea, Contact Lenses and Refractive Technologies , Program Committee

2020-present American Academy of Optometry Task Force Clinical Investigator Certification Course Committee and Lecturer

2019- present International Keratoconus Academy, Member

2017-2020 Editorial Board, Primary Care Optometry News

2016- present Tear Film and Ocular Surface Society, Member

2015-present SCOPE (Scleral lenses in Current Ophthalmic Practice: an Evaluation) Research Group: Executive Committee Member

2013- 2014 Medical Contact Lens and Ocular Surface Association (MCLOSA) 2012- 2014 University of Pittsburgh, First Experiences in Research Mentor

2012 – 2020 American Academy of Optometry, Education Quality Assurance volunteer
 2010 – 2014 National Association for University Based Optometry, Executive Committee
 2010 – present Eye and Contact Lens Association, Inc./ formerly Contact Lens Association of Ophthalmologists, member
 2010 – 2014 Medical student Scholarly Research Project Mentor, University of Pittsburgh
 2010 – present Scleral Lens Education Society, member
 2010 – 2014 Ophthalmology resident Scholarly Research Project Mentor, UPMC Eye Center
 2007 – 2011 Disabilities Resource Center Council Member, UPMC
 1999 – present Association for Research in Vision and Ophthalmology, Member
 2005 – 2009 American Academy of Optometry, Membership Committee
 2005 – 2014 Pennsylvania Optometric Association, Member
 2005 – present American Optometric Association, Member
 2004 – 2008 Optometric Retina Society, Member
 2001 – present American Academy of Optometry, Fellow
 2001 – 2007 New England College of Optometry - Student Mentor

MANUSCRIPTS

Schornack MM, Nau CB, Harthan J, Shorter E, Nau A, Fogt J. Current Trends in Scleral Lens Prescription, Management, and Evaluation. *Eye Contact Lens*. 2023 Feb 1;49(2):56-62. doi: 10.1097/ICL.0000000000000957. Epub 2022 Nov 10. PMID: 36694309; PMCID: PMC9881749.

Schornack MM, Nau CB, Harthan J, Shorter E, Nau A, Fogt J. Survey-based estimation of corneal complications associated with scleral lens wear. *Eye Contact Lens*. 2023 Jan 4. Doi: 10.1097/ICL0000000000000972.

Shorter E, Fogt J, Nau C, Harthan J, Nau A, Schornack M. Prescription habits of scleral lenses for the management of corneal irregularity. *Eye Contact Lens*. 2022 Dec 14. doi: 10.1097/ICL.0000000000000963. PMID: 36517221.

Nau CB, Harthan JS, Shorter ES, Fogt JS, Nau AC, Hochwald AP, Hodge DO, Schornack MM. Trends in Scleral Lens Fitting Practices: 2020 Scleral Lenses in Current Ophthalmic Practice Evaluation Survey. *Eye Contact Lens*. 2022 Nov 21. doi: 10.1097/ICL.0000000000000960. Epub ahead of print. PMID: 36440667.

McLeod A, Nau A. Anterior Blepharitis: The Front Line of Ocular Surface Disease. Review of Optometry, November 15, 2021.

Schornack MM, Fogt J, Nau A, Nau CB, Harthan JS, Cao D, Shorter E. Scleral lens prescription and management practices: Emerging consensus. *Cont Lens Anterior Eye*. 2021 Aug 26:101501. doi: 10.1016/j.clae.2021.101501. PMID: 34456112.

Shorter E, Harthan J, Nau A, Fogt J, Cao D, Schornack M, Nau C. Dry Eye Symptoms in Individuals With Keratoconus Wearing Contact Lenses. *Eye Contact Lens*. 2021 Sep 1;47(9):515-519. doi: 10.1097/ICL.0000000000000802. PMID: 34424225; PMCID: PMC8385958.

Harthan J, Schornack M, Nau C, Nau A, Fogt J, Shorter E. Current U.S. based optometric scleral lens curricula and fitting recommendations: SCOPE educators survey. *Contact Lens and Anterior Eye*. 2021 June 44(3), 101353.

Nau A, Rawal R, Nau O. Dry eye in children: an occult public health crisis exacerbated by the COVID-19 pandemic. *ACTA Scientific Ophthalmology*. 4.5 (2021): 85-86.

Nau A, Shorter ES, Harthan JS, Fogt JS, Nau CB, Schornack M. Multicenter review of impression-based scleral devices. *Cont Lens Anterior Eye*. 2020 Nov 13:S1367-0484(20)30193-4. doi: 10.1016/j.clae.2020.10.010.

Fogt, Jennifer Swingle; Nau, Cherie B.; Schornack, Muriel; Shorter, Ellen; Nau, Amy; Harthan, Jennifer S. Comparison of Pneumatometry and Transpalpebral Tonometry Measurements of Intraocular Pressure during Scleral Lens Wear. *Optometry and Vision Science*. 97(9):711-719, September 2020.

Shorter, Ellen, Schornack, Muriel, Harthan Jennifer, Nau Amy, Fogt Jennifer , Cao, Dingcai Nau, Cherie. Keratoconus Patient Satisfaction and Care Burden with Corneal Gas-permeable and Scleral Lenses. *Optometry and Vision Science*: September 2020 - Volume 97(9): 790-796.

Nau, A. Better manage nocturnal lagophthalmos for dry eye patients. *Optometry Times Journal*, March Digital Edition February 28, 2020. Volume 12, Issue 3.

Schornack MM, Fogt J, Harthan J, Nau CB, Nau A, Cao D, Shorter E. Factors associated with patient-reported midday fogging in established scleral lens wearers. *Cont Lens Anterior Eye*. 2020 Mar 20;S1367-0484(20)30048-5. doi: 10.1016/j.clae.2020.03.005

Nau A. Medical application of contact lens technology. *Advances in Ophthalmology and Optometry*. Volume 4, August 2019, Pages 1-12.

Ellen Shorter, Jennifer Harthan, Cherie B Nau, Amy Nau, Joseph T Barr, David O Hodge, Muriel M Schornack. Scleral Lenses in the Management of Corneal Irregularity and Ocular Surface Disease. *Eye Contact Lens*. 2018 Nov;44(6):372-378. doi: 10.1097/ICL.0000000000000436.

Harthan J, Nau C, Fogt J, Shorter E, Nau A, Schornack M, Zhuang X. Scleral Lens Fitting and Assessment Strategies. *Contact Lens and Anterior Eye* . 2019 Feb;42(1):9-14. doi: 10.1016/j.clae.2018.10.020. Epub 2018 Oct 31.

Schornack M, Nau C, Nau A, Harthan J, Fogt J, Shorter E. Visual and physiological outcomes of

scleral lens wear. Cont Lens Anterior Eye. 2018 Aug 8. pii: S1367-0484(18)30858-0. doi: 10.1016/j.clae.2018.07.007.

Nau C, Shorter E, Nau A, Harthan J, Fogt J, Schornack M. How to deal with Keratoconus - are there Contact Lens Related Problems in Sclerals? Acta Ophthalmologica 95(S259). August 2017. DOI: 10.1111/j.1755-3768.2017.03574.

Caitlin O'Connell, Arash Mahboobin, Scott Drexler, Mark Redfern, Subashan Perera, Amy Nau, Raki Cham. Effects of acute peripheral/central vision loss on standing balance. *Experimental Brain Research* Exp Brain Res. 2017 Nov;235(11):3261-3270.

Schornack, M, Nau CB, Harthan J, Shorter E, Nau A, Hodge DO. Scleral Lenses in the Management of Corneal Irregularity and Ocular Surface Disease". Eye Contact Lens. 2017 Sep 29. doi: 10.1097/ICL.0000000000000436

Nau CB, Harthan J, Shorter E, Barr J, Nau A, Chimato NT, Hodge DO, Schornack MM. Demographic Characteristics and Prescribing Patterns of Scleral Lens Fitters: The SCOPE Study. Eye Contact Lens. 2017 Jun 14. doi: 10.1097/ICL.0000000000000399.

Harthan J, Nau CB, Barr J, Nau A, Shorter E, Chimato NT, Hodge DO, Schornack MM. Scleral Lens Prescription and Management Practices: The SCOPE Study. Eye Contact Lens. 2017 Apr 6. doi: 10.1097/ICL.0000000000000387.

H. Christiaan Stronks, Ellen Mitchell, Amy Nau, Nick Barnes. Visual task performance in the blind with the BrainPort V100. Expert Review of Medical Devices 2016 Oct 21;14(1):166.

Matthew C Murphy, Amy C Nau, Christopher Fisher, Seong-Gi Kim, Joel S Schuman, Chan KC. Top-down Influence on the Visual Cortex of the Blind during Sensory Substitution *Neuroimage*. 2016 Jan 15;125:932-40

Patricia Grant, Lindsey Spencer, Aimee Arnoldussen, Rich Hogle, Amy Nau, Janet Szlyk, Jonathan Nussdorf, Don Fletcher, Keith Gordon, William Seiple, The Functional Performance of the BrainPort V100® Device in Persons Who Are Profoundly Blind. Journal of Visual Impairment & Blindness, March-April, 2016, p. 77-88.

Nau AC, Murphy MC, Chan KC (2015) Use of sensory substitution devices as a model system for investigating cross-modal neuroplasticity in humans. Neural Regen Res 10(11):1717-1719. September 2015.

Zambelli AM, Brothers KM, Hunt KM, Romanowski EG, Nau AC, Dhaliwal DK, and Shanks RM. Diffusion of Antimicrobials Across Silicone Hydrogel Contact Lenses. Eye and Contact Lens. 2015 Sep;41(5):277-80.

Yabiao Gao, Rahul Chandrawanshi, Amy Nau, Zion Tsz Ho Tse. Wearable Virtual White Cane Network for navigating people with visual impairment. Proc Inst Mech Eng H. 2015 Sep;229(9):681-8.

Stronks HC, Nau AC, Ibbotson MR, Barnes N. The role of visual deprivation and experience on the performance of sensory substitution devices. Brain Res. 2015 Jul 14. pii: S0006-8993(15)00515-6. doi: 10.1016/j.brainres.2015.06.033.

Nau AC, Pinter C, Arnoldussen A, Fisher C. Acquisition of Visual Perception in Blind Adults Using the BrainPort Artificial Vision Device. Am J Occup Ther. 2015 Jan-Feb;69(1):6901290010p1-8.

Murphy MC, Nau AC, Fisher C, Kim SG, Schuman JS, Chan KC. Top-down Influence on Visual Cortex of Blind during Sensory Substitution. Proc. Intl. Soc. Mag. Reson. Med. 2022, p 579. 2014.

Kimberly M Brothers; Amy C Nau; Eric G Romanowski; Robert Shanks . Dexamethasone diffusion across contact lenses is inhibited by Staphylococcus epidermidis biofilms in vitro. Cornea. 2014 Oct;33(10):1083-7.

Lee VK, Nau AC, Laymon C, Chan KC, Rosario BL, Fisher C. Successful visual sensory substitution use functions independently of visual pathway integrity. Front Hum Neurosci. 2014 May 13;8:291.

Nau A, Drexler S, Dhaliwal DK, Mah F, Raju L, Deschler E. Contact Lens Fitting and Long Term Management for the Boston Keratoprosthesis. Eye Contact Lens. 2014 May;40(3):185-9. doi: 10.1097/ICL.0000000000000021.

Nau A, Pinter C, Fisher C, Jeong J-H, Jeong KH. A Standardized, Portable Obstacle Course for Assessment of Visual Function in ultra low vision and artificial vision. J Vis Exp. 2014 Feb 11;(84)

Kowalski RP, Abdel Aziz S, Romanowski EG, Shanks RM, Nau AC, Raju LV. Development of a practical complete-kill assay to evaluate anti-acanthamoeba drugs. JAMA Ophthalmol. 2013 Nov 1;131(11):1459-62.

Nau A, Bach M, Fisher C. Assessment of Visual Perceptions Enabled by Sensory Substitution (BrainPort). Translational Vision Science and Technology. Special Issue: Regenerative Medicine in Ophthalmology, <http://tvstjournal.org/doi/abs/10.1167/tvst.2.3.1> 2013.

Legarreta JE, Nau AC, Dhaliwal DK. Acanthamoeba keratitis associated with tap water use during contact lens cleaning: manufacturer guidelines need to change. Eye Contact Lens. 2013 Mar; 39(2):158-61.

Nau AC. A Contact Lens Model to Produce Reversible Visual Field Loss in Healthy Subjects. Optometry Vol 83 (6) p 278, June 2012

Nau AC, Hertle R, Yang D. Effect of tongue stimulation on nystagmus eye movements in blind patients. Brain Struct Funct. 2012 Jul;217(3):761-5.

Nau. AC. "A comparison of Synergeyes versus traditional rigid gas permeable lens designs for patients with irregular corneas" Eye & Contact Lens: Science & Clinical Practice. 34(4):198-200, July 2008.

Troilo D, Boisvert N, Nau A. How is accommodation related to refractive state? Evidence from experimental studies using animal models. In: Thorn F, Troilo D, Gwiazda J (Eds.) Myopia 2000. Proceedings of the VIII International Conference on Myopia. Myopia 2000, Inc. Boston 254-258 (2000).

Krenzer, KL, Ousler GW, Slugg A, Nau AC. A comparison of the staining characteristics of rose bengal and lissamine green in the evaluation of the clinical signs of dry eye syndrome. IOVS,2000; 41(4). (ARVO supplement #4934).

Greiner JV, Glonek T, Korb DR, Whalen AC, Hebert E, Hearn SL, Esway JE, Leahy CD. Volume of the human and rabbit meibomian gland system. In: Sullivan DA, Dartt DA, Meneray M (eds). Lacrimal Gland, Tear Film and Dry Eye Syndromes: Basic Science and Clinical Relevance. Advances in Medicine and Biology, Plenum Press, 1998; p. 339-43.

Effect of meibomian gland occlusion on tear film lipid layer thickness.

Greiner JV, Glonek T, Korb DR, Hearn SL, Whalen AC, Esway JE, Leahy CD. Adv Exp Med Biol. 1998;438:345-8.

Greiner JV, Glonek T, Hearn SL, Whalen AC, Esway JE, Leahy CD, Korb DR. The effect of meibomian gland occlusion on tear film lipid layer thickness. In: Sullivan DA, Dartt DA, Meneray M (eds). Lacrimal Gland, Tear Film and Dry Eye Syndromes: Basic Science and Clinical Relevance. Advances in Medicine and Biology, Plenum Press, 1998; p. 345-48.

Greiner JV, Glonek T, Korb DR, Whalen AC, Hebert E, Hearn SL, Esway JE, Leahy CD. Volume of the human and rabbit meibomian gland system. Adv Exp Med Biol. 1998;438:339-43.

Human and rabbit lipid layer and interference pattern observations.

Korb DR, Greiner JV, Glonek T, Whalen A, Hearn SL, Esway JE, Leahy CD. Adv Exp Med Biol. 1998;

Korb DR, Greiner JV, Glonek T, Whalen AC, Esway JE, Hearn SL, Leahy CD. Human and rabbit lipid layer interference pattern observations. In: Sullivan DA, Dartt DA, Meneray M (eds). Lacrimal Gland, Tear Film and Dry Eye Syndromes: Basic Science and Clinical Relevance. Advances in Medicine and Biology, Plenum Press, 1998; p. 305-07.

Korb DR, Greiner JV, Glonek T, Esbah R, Finnemore VM, Whalen AC. The effect of periocular humidity on the tear film lipid layer. IOVS 1995; 3 (ARVO) supplement#4626).

Korb DR, Greiner JV, Glonek T, Esbah R, Finnemore VM, Whalen AC. The effect of periocular humidity on the tear film lipid layer of dry eye patients. Ophthalmology 1995: 100 (supplement).

Korb DR, Greiner JV, Glonek T, Esbah R, Finnemore VM, Whalen AC. The effect of periocular humidity on the tear film lipid layer. Cornea 1996 Mar; 15(2):129-34.

Korb DR, Greiner JV, Glonek T, Whalen AC, Esway JE, Hearn SH. Human and rabbit tear film lipid layer thickness and blink rate. Second International Conference on the Lacrimal Gland, Tear Film and Dry Eye Syndromes. Bermuda, November 1996.

Greiner JV, Glonek T, Korb DR, Whalen AC, Hebert E, Hearn SH, Esway JE, Leahy CDE. Human and rabbit meibomian gland secretion volume. Second International Conference on the Lacrimal Gland, Tear Film and Dry Eye Syndromes. Bermuda, November 1996.

Greiner JV, Glonek T, Hearn SH, Whalen AC, Esway JE, Leahy CD, Korb DR. The effect of meibomian gland occlusion on the tear film lipid layer thickness. Second International Conference on the Lacrimal Gland, Tear Film and Dry Eye Syndromes. Bermuda, November 1996.

Korb DR, Greiner JV, Glonek T, Esbah R, Finnemore VM, Whalen AC. The effect of periocular humidity on the tear film lipid layer. American Academy of Ophthalmology, Atlanta GA 1995.

POSTERS/MEETING PRESENTATIONS:

Shorter E, Fogt J, Nau C, Nau A, Harthan J, Schornack M. Utilization of Diagnostic, Image-Guided and Impression-Based Scleral Lenses Fitting for Patients with Keratoconus. Association for Vision Research in Ophthalmology, New Orleans, Louisiana, May 2023.

Yoon H, Harthan J, Nau A, Fogt J, Nau C, Schornack M, Shorter E. Topographical Characteristics of Patients with Ocular Surface Disease Successfully Fit in Custom Scleral Lenses. Association for Vision Research in Ophthalmology, New Orleans, Louisiana, May 2023.

Harthan J, Schornack M, Nau C, Shorter E, Nau A, Patton K, Fogt J. Scleral lens design and patient-reported mid-day fogging. Association for Vision Research in Ophthalmology, New Orleans, Louisiana, May 2023.

Nau C, Schornack M, Harthan J, Shorter E, Nau A, Patton K, Fogt J. Evaluation of scleral lens surface, tear fluid reservoir and eyelid health with reported mid-day fogging in habitual scleral lens wearers. Association for Vision Research in Ophthalmology, New Orleans, Louisiana, May 2023.

Fogt J, Schornack M, Harthan J, Nau C, Nau A, Shorter E. Dry eye in patients with Sjogren's Disease. Association for Vision Research in Ophthalmology, New Orleans, Louisiana, May 2023.

Schornack M, Nau C, Shorter E, Nau A, Harthan J, Patton K, Fogt J. Comparison of scleral lens fluid reservoir depth between image-based measurements and subjective estimates by experienced observers. Association for Vision Research in Ophthalmology, New Orleans, Louisiana, May 2023.

Yoon H, Harthan J, Skoog W, Nau A, Fogt J S, Nau C, Schornack M, Shorter E. Process and Outcomes of Fitting Corneoscleral Profilometry-Driven Scleral Lenses for Patients with Ocular Surface Disease. Global Specialty Lens Symposium, Las Vegas, 2023.

Nau C, Fogt J, Harthan J, Schornack M, Nau A, Yoon H, Shorter E. Fitting Scleral Lenses for Patients with Keratoconus: Comparison of Diagnostic, Image-guided, and Impression-based Designs. American Academy of Optometry, San Diego, 2022.

Skoog W, Harthan J, Fogt J, Nau A, Nau C, Schornack M, Shorter E. Success Rates with Free-Form Scleral Lenses for Patients with Corneal Irregularity. American Academy of Optometry, San Diego, 2022.

Yoon H, Harthan J, Skoog W, Nau A, Fogt J S, Nau C, Schornack M, Shorter E. Process and Outcomes of Fitting Corneoscleral Profilometry-Driven Scleral Lenses for Patients with Ocular Surface Disease. Global Specialty Lens Symposium, Las Vegas, 2023.

Nau C, Fogt J, Harthan J, Schornack M, Nau A, Yoon H, Shorter E. Fitting Scleral Lenses for Patients with Keratoconus: Comparison of Diagnostic, Image-guided, and Impression-based Designs. American Academy of Optometry, San Diego, 2022.

Skoog W, Harthan J, Fogt J, Nau A, Nau C, Schornack M, Shorter E. Success Rates with Free-Form Scleral Lenses for Patients with Corneal Irregularity. American Academy of Optometry, San Diego, 2022.

Harthan J, Nau C, Schornack M, Shorter E, Nau A, Patton K, Fogt J. High Contrast Visual Acuity and Fogging in Established Scleral Lens Wearers. Association for Research in Vision and Ophthalmology, Denver, 2022.

Nau C, Harthan J, Schornack M, Shorter E, Nau A, Fogt J. Patient Reported Mid-day Fogging is Not Related to Central Fluid Reservoir Clearance. Association for Research in Vision and Ophthalmology, Denver, 2022.

Schornack M, Nau C, Harthan J, Shorter E, Nau A, Patton K, Fogt J. Tear Exchange in Established Scleral Lens Wearers. Association for Research in Vision and Ophthalmology, Denver, 2022.

Shorter E, Harthan J, Fogt J, Nau A, Schornack M, Nau C. Practitioner Reported Scleral Lens Exam

Components: SCOPE (Scleral Lens in Current Ophthalmic Practice Evaluation) 2020 Survey. Global Specialty Lens Symposium, Las Vegas, 2022.

Nau A, Rawal R, Nau O, Rawal R, Rawal B. Use of SPEED Questionnaire for School Based Eye Screening. Virtual presentation, ARVO, May 2022

Ellen Shorter, Jennifer Fogt, Muriel Schornack, Amy Nau, Jennifer Harthan, Kimberly Patton, Cherie Nau. Indication for Scleral Wear and Fogging in Established Wearers. Poster A0250. ARVO, Denver CO. May, 2022

Cherie Nau, Jennifer Harthan, Muriel Schornack, Ellen Shorter, Amy Nau, Jennifer Fogt. Patient reported mid-day fogging is not related to central fluid reservoir clearance Poster A0246. ARVO, Denver CO. May, 2022.

Nau A, Nau C, Shorter E, Schornack M, Fogt J, Harthan J. Holistic Management Practices for Keratoconus. ARVO e-abstract 353757, May 2021.

Schornack M, Nau C, Harthan J, Fogt J, Shorter E, Nau A. Long-Term Management of Patients with Keratoconus. ARVO e-abstract 354638, May 2021.

Alfred M, Nau, A, McLeod A. Correlation between the Standard Patient Evaluation of Eye Dryness (SPEED) and Ocular Pain Assessment Survey (OPAS) in patients with dry eye disease. ARVO e-abstract, May 2021

Nau C, Fogt J, Harthan J, Nau A, Shorter E, Schornack M. Corneal edema after one hour of small and large diameter lens wear. ARVO e-abstract, May 2021.

Schornack M, Nau C, Nau A, Harthan J, Shorter E, Fogt J. Corneal complications associated with scleral lens wear. Global Specialty Lens Symposium (Virtual meeting), January 2020.

Schornack M, Nau C, Nau A, Harthan J, Shorter E, Fogt J. Complications Associated with Scleral Lens Wear. American Academy of Optometry (virtual), October 2020.

Harthan J, Nau C, Swingle-Fogt J, Nau A, Schornack M, Shorter E. Student Assessment of Scleral Lens Fitting and Evaluation Practices at U.S. Based Optometry Colleges and Universities. American Academy of Optometry (virtual), October 2020.

Bielski S, Quinn N, Nau A. Pediatric Dry Eye Symptoms and their Association with Screen Time Using a Modified SPEED Questionnaire. American Academy of Optometry (virtual), October 2020.

Rabkin A, Nau Y, McLeod A, Korb D, Nau A. Prevalence of Nocturnal Lagophthalmos. American Academy of Optometry (virtual), October 2020.

Nau A, Nau O, Rawal R. Increase in Dry Eye Symptoms Among Middle and High School Students After Initiation of Online Learning Due to COVID-19 Pandemic. American Academy of Optometry (virtual), October 2020.

McLeod A, Nau A, Rabkin A, Korb D. Repeated Treatment of MGD. American Academy of Optometry (virtual), October 2020.

Fogt JS, Harthan J, Nau A, Shorter E, Schornack M, Nau CB. Effect of Short-term Scleral Lens Wear of Small and Large Diameter on Intraocular Pressure. Invest Ophthalmol Vis Sci. 2020;61: ARVO E-Abstract 1480.

Schornack M, Nau A, Harthan J, Shorter E, Nau C, Fogt JS. Visual and Physiological Outcomes of Impression-Based Scleral Lens Wear. Invest Ophthalmol Vis Sci 2020;61 ARVO E-Abstract 1476.

Nau CB, Fogt JS, Harthan J, Nau A, Shorter E, Schornack M. Intraocular Pressure During Scleral Lens Wear Using Pneumatometry. Invest Ophthalmol Vis Sci. 2020;61: ARVO E-Abstract 4766.

Harthan, J, Schornack M, Nau A, Shorter E, Nau C, Fogt JS. IOP Measurements in the Peripheral Eye. Invest Ophthalmol Vis Sci 2020;61 ARVO.

Nau A, Fogt JS, Harthan J, Nau CB, Shorter E, Schornack M. Fitting Efficiency of Impression-Based Scleral Lenses. Invest Ophthalmol Vis Sci. 2020;61: ARVO E-Abstract 1481..

Schornack M, Harthan J, Nau C, Nau A, Fogt JS, Shorter E. Multi-Center Study of Impression-Based Scleral Lenses: Indications and Previous Contact Lens Experience. Global Specialty Lens Symposium, Las Vegas NV, January 2020.

Harthan J, Nau C, Nau A, Swingle-Fogt J, Schornack M, Shorter E. Optometric educators' guidelines for fitting scleral lenses. Global Specialty Lens Symposium, Las Vegas NV. January 2020.

Schornack M, Nau C, Harthan J, Swingle-Fogt J, Nau A, Shorter E. Multi-Center Study of Impression Based Scleral Lenses: Indications and Previous Contact Lens Experience. Global Specialty Lens Symposium, Las Vegas NV. January 2020.

Schornack M, Nau C, Harthan J, Swingle-Fogt J, Nau A, Shorter E. Clinical Associations with Subjective Complaints of Mid-Day Fogging with Scleral Lenses. American Academy of Optometry, Orlando FL. October 2019.

Swingle-Fogt J, Nau A, Schornack M, Nau C, Harthan J, Shorter E. Survey of Health Care Utilization and Disease Information Sourcing in a Self-Reported Dry Eye Population. American Academy of Optometry, Orlando FL. October 2019.

Nau C, Shorter E, Nau A, Fogt J, Schornack, Fogt J. Scleral lens reservoir densitometry changes in small and large diameter lenses after one hour of wear. ARVO, Vancouver Canada. May, 2019

Schornack M, Nau C, Harthan J, Fogt J, Nau A, Shorter E. Patient Reported Mid Day Fogging in Scleral Lens Wear. ARVO, Vancouver Canada. May, 2019

Nau C, Shorter E, Nau A, Fogt J, Schornack M, Harthan J. Scleral Lens Reservoir Densitometry Changes in Small and Large Diameter Lenses after One Hour of Wear. ARVO, Vancouver Canada, Program Number 6372. May, 2019

Nau A, Harthan J, McLeod A. Prevalence of Meibomian Gland Dysfunction and Lagophthalmos in Patients with Keratoconus. American Academy of Optometry, San Antonio TX, Nov 2018.

Smith K, Nau A. Meibomian Gland Dysfunction in School-Aged Children. American Academy of Optometry, San Antonio TX, Nov 2018.

Estrada G, Nau A. Use of Piggyback Modality in Conjunction with EyePrint Impression Moulded Scleral Device Protects Fragile Cornea in Case of Partial Lateral Tarsorrhaphy. American Academy of Optometry, San Antonio TX, Nov 2018

Nau C, Schornack M, Nau A, Fogt J, Harthan J, Shorter E. SCOPE Study Group. Surgical Impact on Finances and Visual Satisfaction in Keratoconus Patients. American Academy of Optometry, San Antonio TX, Nov 2018

Schornack M, Nau C, Harthan J, Fogt J, Nau A, Shorter E. SCOPE Study Group. Patient Experience with Scleral Lenses: Mid-Day Fogging. American Academy of Optometry, San Antonio TX, Nov 2018

Nau A, Stetson G. Temperature profiles of the Bruder Moist Heat Eye Mask, an ex-vivo Examination. ARVO Honolulu, HI, May 2018

Donald Korb, William Benjamin, Amy Nau. Meibomian gland structure is correlated to meibomian gland function. ARVO Honolulu, HI, May 2018

Scleral Lens Fitting Strategies of Practitioners with Various Levels of Experience. The SCOPE Study Group. ARVO Honolulu, HI, May 2018

Nau C. Patient experience with scleral lenses: wearing schedule and care regimen. The SCOPE Study Group. ARVO Honolulu, HI, May 2018

Jennifer Fogt. SCOPE Study: Comparing severity of dry eye symptoms in keratoconus patients using corneal gas permeable lenses versus scleral lenses. ARVO, Honolulu, HI, May 2018.

Cherie Nau. Scleral Lens Experience in Patients with Keratoconus (SCOPE study). Global Specialty Lens Symposium, Las Vegas NV, January 2018.

Schornack M, Nau C, Fogt J, Nau A, Harthan J, Shorter E. Patient Experience with Scleral Lenses: Wearing Schedule and Care Regimen. Global Specialty Lens Symposium, Las Vegas, NV, January 2018.

Jennifer Fogt, Ellen Shorter, Cherie Nu, Amy Nau, Muriel Schornack, Joseh Barr, Jennifer Harthan. Scleral Lenses in Current Ophthalmic Practice Evaluation: Fitting Strategies Among Scleral Lens Practitioners. American Academy of Optometry, Chicago IL 2017.

Muriel Schornack, Jennifer Harthan, Cherie Nau, Jennifer Fogt, Amy Nau, Joe Barr, Ellen Shorter. SCOPE: Patient Demographics, Indications, and Lens Designs. American Academy of Optometry, Chicago IL 2017.

Patient-Reported Experience with Keratoconus. American Academy of Optometry, Chicago, IL, October 2017.

Scleral Lenses in Current Ophthalmic Practice Evaluation: Patient Demographics, Indications, and Lens Design. American Academy of Optometry, Chicago, IL, October 2017

Scleral Lenses in Current Ophthalmic Practice Evaluation: Fitting Strategies Among Scleral Lens Practitioners. American Academy of Optometry, Chicago, IL, October 2017.

Donald Korb, Caroline Blackie, Amy Nau. Prevalence of compromised lid seal in symptomatic refractory dry eye patients and asymptomatic patients. ARVO 2017, Baltimore MD

Amy Nau, Leela Raju. Modality of Contact Lens Use after Placement of Intrastromal Ring Segments for Corneal Ectasia. ARVO 2017 #A0305, Baltimore MD

Murphy M, Kashkoush J, Nau A, Chan K. "Top-down modulation in the visual cortex negatively correlates with duration of blindness and reaction time during sensory substitution". International Society of Magnetic Resonance in Medicine 2017 Annual Meeting, Honolulu Hawaii

Amy C. Nau, Christen Kenrick, Andrew McLeod, Caroline Blackie, Sabiha Alloo, Donald Korb. Prevalence of Meibomian Gland Disease in a Graduate School Population. American Academy of Optometry, Anaheim California, October 2016.

Amy C. Nau, Christen Kenrick, Andrew McLeod, Caroline Blackie, Sabiha Alloo, Donald Korb. Dry Eye Symptoms in a Graduate School Cohort as Measured by SPEED Questionnaire. American Academy of Optometry, Anaheim California, October 2016.

Donald R Korb, Caroline A Blackie, Amy C. Nau Evidence to support a “Meibomian Gland First Culture” and the role of Dynamic Meibomian Imaging . American Academy of Optometry, Anaheim California, October 2016.

Kenrick C, Nau A, McLeod A. Incomplete blinking and meibomian gland function in a graduate school cohort. Tear Film and Ocular Society Conference, Montpellier France, September 2016.

Rocco Palumbo, Lauren N Ayton, Amy Nau, Russell L Woods: Using Rasch analysis with measures of visual ability of people with ultra-low vision. ARVO 2016

Cherie Nau, Jennifer Harthan, Ellen Shorter, Joseph Barr, Amy Nau, Muriel Schornack. SCOPE Study: Demographics of Scleral Lens Fitters - Global Specialty Lens Symposium, Las Vegas NV, January 2016.

Jennifer S. Harthan, Ellen Shorter, Joseph Barr, Amy Nau, Cherie Nau, Muriel Schornack. SCOPE Study: Scleral Lens Fitting Trends Among Practitioners - J Global Specialty Lens Symposium, Las Vegas NV, January 2016.

Ellen Shorter, Jennifer Harthan, Cherie Nau, Amy Nau, Joseph Barr, Muriel Schornack. The Role of Scleral Lenses in the Treatment of Corneal Irregularity and Ocular Surface Disease. Presentation number 1475-A0155. ARVO, Seattle WA, May 2016

Amy Nau, Cherie Nau, Ellen Shorter, Jennifer Marathon, Joseph Barr, Muriel Schornack. The SCOPE Survey (Scleral lenses in Current Ophthalmic Practice: an Evaluation) Indications for Scleral Lens Wear. Global Specialty Lens Symposium, Las Vegas NV, January 2016.

Amy Nau, Jordan Davidner, Christen Kenrick, Esther Chung. The Influence of Contact Lens Modality of the Development of Meibomian Gland Dysfunction. American Academy of Optometry New Orleans LA, October 2015.

MC Murphy, AC Nau, C Fisher, SG Kim, JS Schuman, KC Chan. Relationship between visual functional connectivity and duration of blindness depends on onset of visual deprivation. 2015 Proceedings of International Society for Magnetic Resonance in Medicine, Toronto, May 30 – June 5, 2015.

MC Murphy, C Fisher, SG Kim, JS Schuman, AC Nau, KC Chan. Top down influence on the visual cortex of the blind during auditory sensory substitution. Proc. Intl'. Soc. Mag. Reson. Med. 22 (2014), 579. 2014 Proceedings of International Society for Magnetic Resonance in Medicine, Milan, May 10-16, 2014.

Nau A, Moffa D. Predicting Subject Candidacy for Artificial Vision use with Depression Screening Instruments. American Academy of Optometry Denver CO, November 15, 2014.

Nayak N, Dhaliwal D, Raju L, Kamyar R, Mammen A, Nau A, Bower T. accepted abstract submission (30039177/Sleep Position and Obstructive Sleep Apnea in Keratoconus) for AAO 2014 and Subspecialty Day in Chicago.

Kowalski RP, Abdel Aziz S, Romanowski EG, Shanks RM, Nau AC, Raju LV. abstract submission (30039934/Comparison of 10 Commercially Available Contact Lens Solutions in the Complete-Kill of Acanthamoeba Cysts) for AAO 2014 and Subspecialty Day in Chicago in October.

Yabiao Gao, Ka-Wai Kwok, Rahul Chandrawanshi, Alex Squires, Amy C. Nau, Zion Tsz Ho Tse. Investigating Safety Issues Related to Electric Vehicle Wireless Charging Technology 2014 IEEE Transportation Electrification Conference and Expo Dearborn, Michigan, USA.

Nayak N, Dhaliwal D, Raju L, Kamyar R, Mammen A, Nau A, Bower T. Sleep Position and Obstructive Sleep Apnea in Keratoconus. Presentation Number: 1584 - C0223 Session Number: 223 Session Title: Cataract and anterior segment -2014 Meeting of the Association for Research in Vision and Ophthalmology(ARVO), Orlando, May 4-8, 2014.

Murphy M, Chan K, Nau A. Functional Plasticity of the Visual System in the Blind during Sensory Substitution Task and at Rest. Presentation Number: 2163 Session Number: 265 Session Title: Ocular Nanotechnology and Regenerative Medicine 2014 Meeting of the Association for Research in Vision and Ophthalmology(ARVO), Orlando, May 4-8, 2014.

MC Murphy, C Fisher, SG Kim, JS Schuman, AC Nau, KC Chan. Top down influence on the visual cortex of the blind during auditory sensory substitution. 2014 Proceedings of International Society for Magnetic Resonance in Medicine, Milan, May 10-16, 2014.

Tenley N Bower, Divya Narendra, Amy C Nau, Regis P Kowalski, Leela V Raju, MD. Contact Lens Surveillance Cultures in Patients wearing Bandage Contact Lenses. Ocular Microbiology and Immunology Group (OMIG) 2013.

V Lee, AC Nau, KC Chan. Microstructural visual brain reorganization in the congenitally blind and acquired blind. 2013 Proceedings of International Society for Magnetic Resonance in Medicine, Salt

Lake City, Apr 20-26, 2013.

Zambelli A, Nau A, Shanks R, Brothers K, Dhaliwal D. Diffusion of Antimicrobials Across Silicone Hydrogel Soft Contact Lenses. Fall Educational Symposium on Nov. 15. Cornea Society 2013

Lee, VK, Nau A, Chan KC. Microstructural Visual Brain Reorganization in the Perinatal and Acquired Blind. Regenerative Ophthalmology Conference, Pittsburgh PA, June 2013.

Lee V, Nau AC, Chan KC. Microstructural Visual Brain Reorganization in the Congenitally Blind and Acquired Blind. Salt Lake City, UT International Society for Magnetic Resonance in Medicine 21st Annual Meeting 2013 (ISMRM 2013) April 2013.

Kowalski RP, Aziz SA, Shanks RMQ, Romanowski EG, Nau AC. Evaluation of a Complete-Kill Assay for Anti-Acanthamoeba Solutions. Ocular Microbiology and Immunology Group Meeting, New Orleans, Louisiana November 15, 2013

Steinbrink JM, Laymon JM, Rosario-Rivera C, Bedda L, Nau AC. The Relationship of Specific Categorical Variables with PET Scan White Matter Activation in Blind and Control Subjects Using BrainPort, In: ARVO Annual Meeting, Ft. Lauderdale, FL, 2013, E- Abstract

Nau AC, McCue M. Telerehabilitation for Artificial Vision (In: ARVO Annual Meeting, Ft. Lauderdale, FL, 2012; E-Abstract #333)

Arnoldussen A, Nau AC, Fisher C, Fisher J, Pintar C, Engleka G, Janosco K, Keifer A, Wolfe C. Perception of Depth Using the BrainPort Vision Device (In: ARVO Annual Meeting, Ft. Lauderdale, FL, 2012; E-Abstract #6327)

Nau. AC, Fisher C, Pintar C, Engleka G. Vision Based Psychophysical Tests Can be Used with Sensory Substitution Device (Brainport)- In: ARVO Annual Meeting, Ft. Lauderdale, FL 2011; E – Abstract #D1108

Friberg T, Nau AC, Pintar C, Fisher C, Chen C. “Seeing” With Your Tongue -- Sensory Substitution Using a Simple Alternative To The Retinal Chip, In: ARVO Annual Meeting, Ft. Lauderdale, FL 2011; E-Abstract #A244

Dongsheng Yang, Nau AC, Hertle RW. Effect of Tongue Stimulation On Nystagmus: Evidence Of Afferent Influence On Eye Movements In: ARVO Annual Meeting, Ft. Lauderdale, FL, 2011; E-Abstract #3020

Nau AC, Pintar C, Fisher CN. A Standardized Obstacle Course for Low Vision Mobility Assessment.

In: ARVO Annual meeting, Ft. Lauderdale, FL 2011; E-Abstract t # 3623

Nau AC, Contact lens visual rehabilitation after implantation of the Alpha-Cor keratoprosthesis. ARVO, 2007.

Nau Amy C. OD; Coan, Mark OD (OD-201) SUSPECTED OUTER RETINAL NECROSIS SECONDARY TO LASIK: Poster # 32 Optometry and Vision Science: December 2000 - Volume 77 - Issue 12 - ppg 64 Sat. Dec. 9, 2000 Clinical Education and Case Reports Northern Hemisphere C-D: PDF Only

Nau AC, Wildsoet CF, Troilo D. Hyperopic defocus from spectacle lenses alters the pattern of accommodative behavior in chicks. IOVS, 1999;40(4). (ARVO supplement #4457).

Nau AC, Troilo D, Wildsoet CF. Compensation to negative lenses in chicks is not affected by conditions which alter accommodation. IOVS, 1998; 39(4). (ARVO supplement #3238).

PAST RESEARCH SUPPORT

NIH Loan Repayment Program Recipient 2012-2014
Assessing Feasibility of TeleRehabilitation in Low Vision Patients

Role: independent contractor 5/2013-5/2014

Sponsor: Faculty Innovation Fund Award Johns Hopkins

The overarching goal of this project is to demonstrate the feasibility of using tele-rehabilitation as a platform for delivering low vision rehabilitation services. Pilot data collected through this project will lay a foundation for a randomized controlled trial grant application to be submitted to the National Eye Institute, National Institutes of Health (NIH).

Effects of Visual Fields on Standing Balance

Co-Principal Investigator 8/1/13-9/1/14

\$120,00 NIH R-03

The goal of this proposed research is to determine the importance of central and peripheral visual field loss on standing balance in older adults.

Functional MRI of Sensory Substitution in the Blind

Co-Principal Investigator 1/2013-1/2014

\$70,000 OTERO fellow Fox Center for Vision Restoration The main objective of this proposal is to identify the functional and structural connections that underlie the process of sensory substitution using advanced, non-invasive magnetic resonance imaging techniques and BrainPort. We will determine functional and structural changes in the brain before and after BrainPort training. This work will lay the foundation for the neurophysiological bases of sensory substitution. Our ultimate goal is to elucidate strategies for maximizing cross modal interactions for blind rehabilitation.

Visual Information Restoration and Rehabilitation via Sensory Substitution Technology

Co-Principal Investigator 10/2010-12/2013 30% effort \$3.2M DMDRP

The aim of this proposal is to evaluate and improve a non-surgical visual prosthetic sensory substitution device called the Brainport. The advanced interfaces developed in this project will ultimately be broadly applicable to all artificial vision devices (i.e. retinal and cortical implants) that incorporate camera technology to capture a visual scene. We will initiate hardware and software algorithm upgrades to the BrainPort vision device through an iterative process using feedback and performance measures from users who are blind. This work will lead to a proven assistive technology ready for rapid deployment to wounded warriors, veterans and civilians who are blind.

Structural and Functional Brain Reorganization for Sensory Substitution in the Elderly and Blind

Co-Principal Investigator 8/1/12-1/1/14

\$20,000 University of Pittsburgh Institute on Aging Explore how to exploit the effects of cross modal neuroplasticity in the elderly to improve their independence in living and to better connect with others, this project proposes to identify the structural and functional connections that underlie the mechanisms of cross modal brain reorganization in the aged and blind subjects at different onset ages of acquired blindness using advanced, non-invasive magnetic resonance imaging (MRI) techniques with the BrainPort device.

BrainPort FDA Safety Study

Role: Co-Investigator 10/2011-5/2013

\$35,000 Wicab, Inc.

The aim of this study is to conduct a one year efficacy and safety study for the BrainPort Vision Device.

Sensory Substitution for Enhanced Way finding in Blinded Veterans

Role: Principal Investigator 1/2009-12/2011

\$500,000 Fox Center for Vision Restoration

The BrainPort is a sensory substitution device which uses the tongue as a portal for creating a sense of vision in the blind. The aim of this study is to determine if the device represents a viable method for increasing independence of the blind outside a laboratory setting

Artificial Vision: Defining the Criteria for Ocular Cyber-Prosthetic Evaluation and Use;

Role: Principal Investigator 12/2008-6/2011

\$1M DCED State of Pennsylvania

The aim is to begin to create a standard body of knowledge regarding how to assess improvement in visual function, how to select appropriate patients, and how to measure the neuroplastic changes in the context of using the Brainport, a sensory substitution device for vision enhancement. Role: PI

Visual Rehabilitation with Artificial Devices:

Role: Principal Investigator 1/2011-1/2012

\$50,000 Fine Foundation

A major impediment to the adoption of artificial vision devices will be the lack of trained therapy professionals to work with blind patients. This project represents a collaboration with the Rehabilitation Engineering Research Center at the University of Pittsburgh to explore whether tele-rehabilitation portals will work with blind patients using artificial vision devices.

Epidemiology of Cardiovascular Risk Factors in Women (Healthy Women's Study); Lens Aging Substudy:

Role: Co- Investigator Substudy 8/2010-12/2011

This is an extension of a previous lens study (R21AG024177) to an additional epidemiological cohort with a rich data set of physiologic indices. We are seeking to determine whether certain cataractous changes can be used as a biomarker for healthy aging.

Ocular Development of the Ferret

Role: Co-Investigator

Departmental Support

The purpose of this research project is to determine the refractive errors and ocular biometry of developing ferrets, which are a commonly used animal model to study neuroplasticity. My role on the project was to take corneal measurements, perform A-scans and obtain refractive data on ferrets from birth to adulthood. We will publish our findings as well as the parameters of contact lenses that should be used on ferrets of various ages for work in neuroscience.

R21AG024177. The Genetic Basis of a Disease Free Model of Aging.

Role: Co-Investigator. 2006-2008.

The aim was to determine whether cataractous changes can be used as a biomarker for healthy aging.

Development of a Model of Reversible Visual Field Loss

Role: Principal Investigator 2008-2009

\$50,000 UPMC Health System Competitive Medical Research Fund (CMRF)

To create reversible visual field defects in normal subjects using a contact lens model.

Ocular Residence Time of Artificial Tears Determined by Non-Invasive Imaging

Role: Principal Investigator 2006-2007

Departmental Support

The goal of this pilot project is to employ the Pentacam and Bioptigen imaging technologies as non-invasive methods for determining the ocular residence times of artificial tear supplements.

Incidence of Ocular Abnormalities in Patients with Alzheimer Disease.

Role Co-Investigator

Merck 2005-2007

Specific Aims included evaluation of the crystalline lenses of individuals within three groups (those with varying degrees of AD, those without AD, and those at increased risk due to having a first degree

relative with AD) and determine if there are any quantitative or qualitative changes in the lens that are potentially associated with AD or severity of AD. In addition, to quantify the retinal nerve fiber layer (RNFL) thickness of patients with the clinical diagnosis of AD and compare any retinal or optic nerve changes to the severity of Alzheimer's Disease. And finally, using segregation analysis, assess the amyloid precursor protein gene to determine if this gene is associated with the quantitative or qualitative changes in the lens that are potentially associated with AD or extent of AD.

INVITED LECTURES

Nau A, McLeod A, Estrada G. **Implementing dry eye into your practice.** ClaraVision, Madrid Spain, March 2023

Nau A. **Impression Based Scleral Lens Outcomes.** Keynote Speaker, International Forum for Scleral Lens Research, Las Vegas NV, January 2023.

Nau A, McLeod A. **Ocular Surface Disease Beyond MGD.** American Academy of Optometry, San Diego CA, November 2022.

Nau A, McLeod A. **Implementing Evaluation and Treatment of Dry Eye in Your Practice.** American Academy of Optometry, San Diego CA, November 2022.

Nau A. **Dry Eye and Ocular Surface Disease.** SOAR CCLRT Diplomate Program of the American Academy of Optometry. Virtual lecture June 2022,

Nau A. **Administrative Aspects of Clinical Research.** Clinical Investigator Certification American Academy of Optometry. Virtual lecture May, 2022

Nau A. **Meibomian Gland Dysfunction in Keratoconus.** Global Specialty Lens Symposium, Las Vegas NV. January 2022.

Nau A, Johns L, Coltarella N, Bronner A. **Therapeutics Versus Sclerals: Is the Best Defense a Good Offense?** Anterior Segment and CCLRT Joint Symposium, American Academy of Optometry Meeting. Boston November 2021.

Nau A. **Administrative Aspects of Clinical Research.** Clinical Investigator Certification American Academy of Optometry. Virtual lecture September, 2021

Nau A. **Administrative Aspects of Clinical Research.** Clinical Investigator Certification American Academy of Optometry. Virtual lecture May, 2021

Nau A, O'Dell L, Perriman L, Brimer K. **Dry Eye Patient Education Series Sponsored by Eye Eco: Episode 4: Treating Your Dry Eye. Patient Journeys in Dry Eye.** March 2021.

Nau A, O'Dell L **Dry Eye Patient Education Series Sponsored by Eye Eco: Episode 4: Treating Your Dry Eye. Patient Journeys in Dry Eye.** January 2020.

Nau A, O'Dell L, Perriman L, Brimer K. **Dry Eye Patient Education Series Sponsored by Eye Eco: Episode 3: Treating Your Dry Eye.** December 2020.

Nau A, O'Dell L, Perriman L, Brimer K. **Dry Eye Patient Education Series Sponsored by Eye Eco: Episode 2: Diagnosing Dry Eye.** November 2020

Korb D, Nau A, McLeod A. **Dry Eye: A New Paradigm Provides Clarity and Improves Treatment.** American Academy of Optometry. Virtual Meeting, October 2020.

Korb D, Nau A. Rethinking Dry Eye: **A New Paradigm and Clinical Framework for Diagnosis, Treatment, Restoration and Prevention.** New England College of Optometry. Virtual Ocular Surface Disease Symposium, September 2020.

Korb D, Nau A. **Dry Eye: a New Clinical Description and Science Based Approach Provides Effective Treatment.** Twin Cities Ocular Disease Symposium, August 2020.

Nau A. **Cosmetics, Cosmeceuticals and Ocular Surface Disease.** Twin Cities Ocular Disease Symposium, August 2020.

Nau A. **Pediatric and Adolescent Dry Eye, an Emerging Concern.** Twin Cities Ocular Disease Symposium, August 2020.

Nau A, Devries D, Bloomenstein M. **Pathways to Premium Outcomes.** Review of Optometry Review Group Program. New York NY. December 2019.

Nau A, Korb DR, McLeod A. **A Systematic Approach to Diagnose, Treat and Manage Dry Eye.** American Academy of Optometry. Orlando, FL. November 2019.

McLeod A, Nau A. **Implementing Evaluation and Treatment of Dry Eye in Your Practice.** American Academy of Optometry. Orlando, FL. November 2019.

Nau A, McLeod A. **MGD and Dry Eye Diagnostic Testing and Work-up: A Recipe for Success.** New England College of Optometry. Boston MA. July 2019.

Nau A, McLeod A. **Pediatric and Adolescent Dry Eye: An Emerging Concern.** American Academy of Optometry. San Antonio TX. November 2018.

McLeod A, Nau A. **MGD and Dry Eye Diagnostic Testing and Workup: A Recipe for Success.** American Academy of Optometry. San Antonio TX. November 2018.

Nau A. Crosslinking - **Review and Implications for Lens Use**. European Association for Eye Research, Nice France, October 2018.

Nau, A. **The Do's and Don'ts of Scleral Lens Fitting**. European Association for Eye Research, Nice France, October 2018.

Nau A. **How to Interpret Meibography**. European Society of Cataract and Refractive Surgeons (ESCRS), Vienna Austria, September 2018.

Nau A. **Dry Eye and Meibomian Gland Dysfunction: Relevance to Clinical Practice and Surgery 1980-2018**. European Society of Cataract and Refractive Surgeons (ESCRS), Vienna Austria, September 2018.

What **We Don't Know About Sclerals**. European Association for Vision and Eye Research. September 2017, Nice France.

Scleral Lens Practices: The SCOPE Studies. European Association for Vision and Eye Research. September 2017, Nice France.

Rapid Fire: Scleral Lenses in Ophthalmic Practice: The SCOPE studies. American Academy of Optometry, October 2017, Chicago, IL.

Doctor, My Eyes Turn Red When I Wear My Contacts; Therapeutic Options for Contact Lenses. Contact Lens Association for Ophthalmology (CLAO) meeting, January 2017, Naples FL.

Dry Eye: Focusing on the Sequelae Leads to Long Term Failure. Rapid Fire Lecture Series, American Academy of Optometry, November 2016. Anaheim, CA.

The Promise of Sensory Substitution. Lions Club, June 2106. Quincy MA.

The Tongue as Visual Surrogate: Experiences with Sensory Substitution for Blindness. Schepens Eye Research Institute. February 11, 2016. Boston, MA

Expanding New Dry Eye Metrics- Implications for Clinical Research. New England College of Optometry Research Lecture Series. Boston, MA December 2, 2015.

The BrainPort in Adults: Psychophysical and Neuroanatomic Findings. World Society of Pediatric Ophthalmology and Strabismus, Barcelona Spain, October 2015. Section Chair-regenerative ophthalmology section.

Aspheric and Multifocal GP Lenses. The Contact Lens Educational Summit: Exploring New Heights

in Contact Lens Management CLAO/CLSA Denver, CO May 2, 2015.

Hybrids: What is the Sweet Spot for this Modality? The Contact Lens Educational Summit: Exploring New Heights in Contact Lens Management CLAO/CLSA Denver, CO May 2, 2015.

Dry eye is the Wrong Diagnosis for Millions, Trumbull CT, March 29, 2105

Sensory Substitution for Vision: TLC Continuing Education Event, Babson College, Wellesley MA, March 29, 2105

The Tongue as Visual Surrogate: Experiences with Sensory Substitution for Blindness. VIVO Lecture Series, Schepens Eye Research Institute, Boston MA Feb 11, 2014.

Emerging Trends in the Management of Dry Eye. New England College of Optometry Boston, MA December 7, 2014.

A Review of Contact Lens Fitting Considerations for the Boston Keratoprosthesis. American Academy of Optometry, Denver CO. November 16, 2014.

Sensory Substitution for Vision Restoration Twenty Ninth Symposium of the Center for Visual Science Engineering the Eye IV: Restoring Vision. University of Rochester, Rochester NY August 22-24, 2014

Contact Lens Fitting Considerations After Intrastromal Ring Placement for Keratoconus. CLAO meeting, Toronto CA June 13, 2014

Predicting Appropriate Candidates for Artificial Vision Use. McGowan Institute Retreat, Nemacolin Woodlands PA March 12, 2014

Is Seeing with Alternative Senses Realistic? University of Pittsburgh Eye and Ear Foundation Spring Fundraising Event, Naples FL, February 20, 2014

Keynote Speaker: The Tongue as Visual Surrogate: Experiences with Sensory Substitution for Vision. VisionServe Alliance Annual Meeting, Pittsburgh PA, November 6, 2013

Keynote Speaker: Gaps in Assistive Technology for the Blind: Understanding the Needs of the Disabled IEEE Workshop on Multimodal and Alternative Perception for Visually Impaired People (MAP4VIP), San Jose California July 15, 2013

A Comparison of Normal Versus Visually Deprived Brains When Using Sensory Substitution. 3rd Annual Vision Restoration: Regenerative Medicine in Ophthalmology Conference, Pittsburgh PA June 11, 2013.

The Tongue as Visual Surrogate: Experiences with Sensory Substitution for Blindness A Neurobehavioral Comparison of Normal Versus Visually Deprived Brains when Using Sensory Substitution. City University of New York, Department of Psychology, New York ,NY. April 30 2013

How the Blind Brain Reacts to Visual Input: A neurobehavioral comparison of normal versus visually deprived brains when using sensory substitution McGowan Institute Retreat, Nemacolin Woodlands Resort, PA March 9, 2013

A Taste of Vision LV Prasad Eye Institute, Hyderabad, India December 2012

A Taste of Vision. The World Through A Child's Eyes Symposium. Children's Hospital of Pittsburgh, Pittsburgh PA Nov 8, 2012

Telerehabilitation for Low Vision- Envision Conference, St. Louis MI, September 14, 2012

Artificial Vision. SILK Elsemay Bjorn Symposium, University of Tampere, Tampere Finland, August 13, 2012

A Taste of Vision. SUNY College of Optometry, New York NY February 16, 2012

Use of Anterior Segment OCT (Visante) for Fitting Scleral Lenses. Contact Lens Association of Ophthalmologist (CLAO) meeting, Las Vegas NV, January 28, 2012.

"Common Vision Disorders" Clinical Neurology and Orthopedics Course OT2108, University of Pittsburgh, Pittsburgh PA, February 3, 2012

Restoring Sight Through Non-Visual Pathways. First Annual Symposium Regenerative Rehabilitation, Pittsburgh, PA November 4, 2011.

Seeing Without Eyes: Sensory Substitution for the Blind. University of Pittsburgh School of Medicine Center for Continuing Education in the Health Sciences on- line CE series
UPMCPPhysicianResources.com/ophthalmology

Low Vision Intervention- a Glimpse into the Future, GRECC Conference Series, Veteran's Administration Hospital, Pittsburgh PA September 30, 2011

A Survey of Demographic Traits and Assistive Device Use in a Blind Cohort, Envision Conference, St. Louis MI September 23, 2011

The BrainPort Vision Device: A Visual Information Prosthetic for the Blind Envision Conference,

St. Louis MI September 23, 2011

No Barriers Summit: “Update on Clinical Experience with BrainPort Vision Device”, Winter Park CO, July 3, 2011.

Promises and Pitfalls for Restoring Vision Through Non-visual Pathways, Pittsburgh PA, May 27, 2011.

Soffer Memorial Lecture: Seeing Without Eyes Sensory Substitution for the Blind, Pittsburgh, PA, May 25, 2011

“The BrainPort; Alternative to Retinal Chip for Vision Restoration” Military Surgery Conference, , Bournemouth, England May 12, 2011

NEI/FDA Endpoints Symposium: Use of Functional Vision Endpoints in Visual Prostheses Product Development, Outcomes Assessments with BrainPort: What Worked and What Didn’t: Wish List for Additional Outcomes May 6, 2011, Bethesda, Maryland

“Seeing Without Eyes: Sensory Substitution for the Blind. McGowan Institute for Regenerative Medicine, University of Pittsburgh, August 2011

Sensory Substitution for the Blind. Medical and Health Science Foundation, Pittsburgh 10/26/11

Sensory Substitution for the Blind. University of Pittsburgh Alumni Association “Strength through Partnership: Our Military and Beyond” series, Pittsburgh PA 1/9/11

Advances in Contact Lenses. Pittsburgh Ophthalmological Society Annual Meeting Pittsburgh PA. May, 2011

Seeing Without Eyes; Sensory Substitution for the Blind, American Academy of Optometry, San Francisco CA, Nov 2010

Common Vision Disorders. Clinical Neurology and Orthopedics Course OT2108, University of Pittsburgh, Pittsburgh PA, February 2011

A Taste of Vision for Those Without Sight, New England College of Optometry, Boston MA February 2011

Innovations in Vision Restoration Lecture Series: A Taste of Vision for Those Without Sight. Louis J. Fox Center for Vision Restoration, Pittsburgh PA. March 2011

Advances in Contact Lens Fitting. Pittsburgh Ophthalmology Society, Pittsburgh PA March 2011

UPMC Eye Center Ophthalmology Residency Program Optics Lecture Series:

Astigmatic Lenses 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014 Contact Lenses: Clinical Function and Practical Optics 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013

Accommodation, Fusion and Binocularity 2005, 2006, 2007, 2008

Fusion and Binocularity 2010

Magnification 2004, 2005, 2007, 2009, 2010

Contact Lenses and Thick Lens systems 2012

Mirrors 2004, 2005, 2006, 2007

Optical Aberrations 2004, 2005, 2006, 2007, 2008, 2009

Introduction to Contact Lenses 2013

Optical Considerations for Contact Lenses 2005

Optical Prescribing 2007, 2008

Optical Prescriptions 2005

Optics of Ophthalmic Instruments 2007, 2008, 2009

Optics of Refractive Procedures 2006, 2007, 2008, 2010

Prisms 2008, 2009

Optical Aberrations 2007, 2010,

Properties of Light and Visual Function 2004, 2005, 2006, 2007, 2008, 2009

Reflection and Refraction of Light 2005, 2006, 2007, 2008, 2009, 2010

Reflection of Light 2013

Refraction at Curved Surfaces 2006

Refraction by the Eye 2005, 2008

Refraction 2004

Clinical Pearls of Refraction 2005

Troubleshooting the Subjective Refraction 2005

Spherical Lenses 2004

Refraction at Curved Surfaces and Prism 2008, 2012

Reflection and Mirrors 2007

Thick lenses and Refraction by the Eye 2010

OTHER RESEARCH RELATED ACTIVITIES

Ad hoc journal reviewer

Investigative Ophthalmology and Visual Science

Translational Vision Science and Technology

Cornea

Mentorship and Training Activities

OTERO Fellow

Matthew Murphy- neurobiological effects of sensory substitution use

Ophthalmology Resident Scholarly Project Mentor

Wendy Chen- Visual evoked potentials in blind subjects using artificial vision devices

Allison Zambelli- penetration of topical ophthalmic drugs through contact lenses

Interns First Experience in Research Mentor

Courtney Elvin- diffusion tensor imaging analysis of brain activation with sensory substitution use

David Moffa III- analysis of depression screens to determine candidacy for BrainPort use Myles

Nightingale- multisensory integration of artificial vision inputs for obstacle avoidance

Research Scholarly Project (medical students)

Julie Steinbrink- Correlation of PET derived activation of visual cortex with behavioral outcomes

Daniel Chen- diffusion tensor imaging analysis of brain activation with sensory substitution use

Summer Reserch Interns

Mathis Mateus

Tobin Vijayin

Jenna Sembrat

Alex Keifer

Cody Wolfe

Kathleen Janesco

Myles Nightingale

Other (graduate level mentoring (M.S. / Ph.D.)

Kimberly Brothers- effect of biofilms on drug penetration through contact lenses Justin Kaiser-

Orientation and mobility training in outdoor environments using artificial vision. Graham

Stetson- heat tolerance of the human eyelid, ability of eyelid warming devices to attain therapeutic temperature at the inner eyelid surface.