**CURRICULUM VITAE**

**The Johns Hopkins University School of Medicine**

**Sezen Karakus, MD**

**July 2023**

**DEMOGRAPHIC AND PERSONAL INFORMATION**

**Current Appointments**

**University**

2019-present Assistant Professor of Ophthalmology, Wilmer Eye Institute, Johns Hopkins University School of Medicine, Baltimore, Maryland

**Hospital**

2019-present Attending Physician/Surgeon, Johns Hopkins Hospital, Johns Hopkins Medicine, Baltimore, Maryland

2021-present Attending Surgeon, Howard County General Hospital, Johns Hopkins Medicine, Columbia, Maryland

**Other** None

**Personal Data**

600 N. Wolfe Street, Maumenee 741

Baltimore, MD 21287

Ophthalmology

(443) 931-5237

skarakus@jhmi.edu

**Education and Training**

**Doctoral/Graduate**

2000-2006 MD, Trakya University School of Medicine, Edirne, Turkey

2019-2024 MPH, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland

**Postdoctoral**

2007-2011 Ophthalmology Residency, Beyoglu Eye Training and Research Hospital, Istanbul, Turkey

2012-2013 Advanced Specialty Training, Cornea and Refractive Surgery, Beyoglu Eye Training and Research Hospital, Istanbul, Turkey

2014-2016 Research Fellowship, Cornea and External Diseases, Wilmer Eye Institute, Johns Hopkins University School of Medicine, Baltimore, Maryland *(Primary mentor: Esen Akpek, MD)*

2016-2017 Clinical Fellowship, Cornea, External Diseases, and Refractive Surgery, Wilmer Eye Institute, Johns Hopkins University School of Medicine, Baltimore, Maryland

2017-2018 Clinical Fellowship, Advanced Anterior Segment Surgery, Wilmer Eye Institute, Johns Hopkins University School of Medicine, Baltimore, Maryland

2020-2021 Clinical Trials Certificate Program, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland

2020-2022 Faculty Development, Junior Faculty Leadership Program Series, Johns Hopkins University School of Medicine, Baltimore, MD

2022-2023 ARVO Women's Leadership Development Program

**Professional Experience**

1/2012-12/2013 Chief of Ophthalmology Service, Istinye State Hospital, Istanbul, Turkey

6/2012-1/2013 Attending Physician/Surgeon, Beyoglu Eye Training and Research Hospital, Istanbul, Turkey

2/2019-present Assistant Professor of Ophthalmology, Wilmer Eye Institute, Johns Hopkins University School of Medicine, Baltimore, Maryland

1/2021-present Attending Surgeon, Howard County General Hospital, Johns Hopkins Medicine, Columbia, Maryland

**PUBLICATIONS**

*h-index: 12, 12 since 2018; Total citations: 488, 392 since 2018; i10-index: 13, 13 since 2018*

*Google scholar page (accessed July 11, 2023) https://scholar.google.com/citations?user=uOWAFSUAAAAJ&hl=en*

Original Research [OR] \*corresponding author

1. Dai X, Jensen A, Dun C, **Karakus S**, Rajaii F, Woreta F. Cost, Prescriber and Patient Characteristics of Cenegermin Use in The Medicare Population. Am J Ophthalmol. 2023 Feb 6;250:12-19. *(Role: manuscript writing- review and editing)*
2. **\*Karakus S**, Foster J, Dai X, Gonzales A, Zhu X, Eberhart C, Hsu W. Prevalence of SARS-CoV-2 in Conjunctival Swab Samples Among Patients Presenting with Conjunctivitis During the COVID-19 Pandemic. Clin Ophthalmol. 2022;16:127-133.
3. Akpek EK, **Karakus S**, Yohannan J, Jabbour S, Sotimehin AE, Li G, Ramulu PY. Reliability of Several Glaucoma Tests in Patients with Boston Type 1 Keratoprosthesis. Cornea. 2021 Jun 17. *(Role: conceptualization, data collection, investigation, data analysis, manuscript writing- review and editing)*
4. Akpek E, Wu HY, **Karakus S**, Zhang Q, Masli S. Differential Diagnosis of Sjögren’s versus Non-Sjögren's Dry Eye Through Tear Film Biomarkers. Cornea. 2020 Aug;39(8):991-997. *(Role: conceptualization, data collection, investigation, data analysis, manuscript writing- review and editing)*
5. Yurttaser Ocak S, **Karakus S**, Ocak OB, Cakir A, Bolukbasi S, Erden B, Bas E, Elcioglu M. Intense pulse light therapy treatment for refractory dry eye disease due to meibomian gland dysfunction. Int Ophthalmol. 2020 May;40(5):1135-1141. *(Role: conceptualization, data analysis, manuscript writing- review and editing)*
6. Akpek E, **Karakus S**, Ramulu PY, Mathews PM. Sustained Gazing Causes Measurable Decline in Visual Function of Patients with Dry Eye. Am J Ophthalmol. 2020 Feb;210:107-115. *(Role: conceptualization, data collection, investigation, data analysis, manuscript writing- review and editing)*
7. You JY, Eberhart CG, **Karakus S**, Akpek EK. Characterization of Progressive Cicatrizing Conjunctivitis with Negative Immunofluorescence Staining. Am J Ophthalmol. 2020 Jan;209:3-9. *(Role: data analysis, manuscript writing- review and editing)*
8. Ighani M, **Karakus S**, Eghrari AO. Clinical Outcomes of Descemet Membrane Endothelial Keratoplasty Using the Bonfadini-Todd Injector For Graft Insertion. Clin Ophthalmol. 2019 Sep 20;13:1869-1876. *(Role: conceptualization, data analysis, manuscript writing- review and editing)*
9. **Karakus S**, Ighani M, Noparat P, Tofigh M, Chiang E, Barnes K, Chen CY, Liu TS, Eghrari AO. Aspiration of Tri-folded, Endothelium-In Grafts for Descemet Membrane Endothelial Keratoplasty. Cornea. 2019 May;38(5):654-657.
10. **Karakus S**, Baer AN, Akpek EK. Clinical Correlations of Novel Autoantibodies in Patients with Dry Eye. J Immunol Res. 2019 Jan 13;2019:7935451.
11. **Karakus S**, Mathews P, Agrawal D, Heinrich C, Ramulu PY, Akpek EK. Impact of Dry Eye on Prolonged Reading. Optom Vis Sci. 2018 Nov 15.
12. **Karakus S**, Akpek EK, Agrawal D, Massof RW. Validation of an Objective Measure of Dry Eye Severity. Transl Vis Sci Technol. 2018 Oct 10;7(5):26.
13. **Karakus S**, Agrawal D, Hindman H, Heinrich C, Ramulu PY, Akpek EK. Effects of Prolonged Reading on Dry Eye. Ophthalmology. 2018 Oct;125(10):1500-1505.
14. **Karakus S,** Baer A, Agrawal D, Massof RW, Akpek E. Utility of Novel Autoantibodies for Early Detection of Sjögren’s Syndrome among Dry Eye Patients. Cornea. 2018 Apr;37(4):405-411.
15. Mathews P, **Karakus S**, Agrawal D, Hindman H, Ramulu P, Akpek EK. Tear Osmolarity and Correlation with Ocular Surface Parameters in Patients with Dry Eye. Cornea. 2017 Nov;36(11):1352-1357. *(Role: conceptualization, data collection, investigation, data analysis, manuscript writing- review and editing)*
16. Mudie LI, LaBarre S, Varadaraj V, **Karakus S**, Onnela J, Munoz B, Friedman D. The Icare HOME (TA022) study: performance of an intraocular pressure measuring device for self-tonometry by glaucoma patients. Ophthalmology. 2016 Aug;123(8):1675-84. *(Role: data collection, investigation, data analysis, manuscript writing- review and editing)*
17. Gire AI, **Karakus S**, Ingrodi SM, Akpek EK. Frequent Dosing of Topical Cyclosporine A for Severe Ocular Surface Disease. J Ocul Pharmacol Ther. 2016 Apr;32(3):150-4. *(Role: data analysis, manuscript writing- review and editing)*
18. **\*Karakus SH**, Basarir B, Pinarci EY, Kirandi EU, Demirok A. Long-term results of half-dose photodynamic therapy for chronic central serous chorioretinopathy with contrast sensitivity changes. Eye (Lond). 2013 May;27(5):612-20.
19. Basarir B, Kaya V, Altan C, **Karakus S**, Pinarci EY, Demirok A. The use of a supplemental sulcus fixated IOL (Human Optics Add-On IOL) to correct pseudophakic refractive errors. Eur J Ophthalmol. 2012 Apr 19;22(6):898-903. *(Role: conceptualization, data collection, investigation, data analysis, manuscript writing- review and editing)*
20. Pekel G, Azman EF, Pekel E, Yılmaz YA, **Harmanci S**, Babaoglu B, Sabancı S. Preocular tear film tests in acute hemorrhagic conjunctivitis caused by Coxsackie A24. TJO. 2012;42(3):186-189. *(Role: manuscript writing- review and editing)*
21. Pekel E, Gungel H, Pekel G, **Karakus SH**, Tas M, Yuksel K, Azman EA. Our surgical results in pseudophakic retinal detachment occurring after phacoemulsification. Turkiye Klinikleri J Ophthalmol. 2012;21(3):125-31. *(Role: data collection, manuscript writing- review and editing)*
22. Kaya V, Utine CA, **Karakus SH**, Kavadarli I, Yilmaz OF. [Refractive and visual outcomes after Intacs vs Ferrara intrastromal corneal ring segment implantation for keratoconus: a comparative study.](http://lib.bioinfo.pl/pmid:21919431) [J Refract Surg. 2011](http://lib.bioinfo.pl/pmid/journal/J%20Refract%20Surg) Dec;27(12):907-12. *(Role: conceptualization, data collection, investigation, data analysis, manuscript writing- review and editing)*

Review Articles [RA] \*corresponding author

1. **\*Karakus S**, Dai X, Zhu X, Gottsch JD. The Role of Lid Margin Structures in the Meibomian Gland Function and Ocular Surface Health. Expert Review of Ophthalmology. 2021;16(1),11-18. <https://doi.org/10.1080/17469899.2021.1826309>
2. Hessen M, **Karakus S**, Akpek EK. Management of Dry Eye in Sjögren’s Syndrome. Current Treatment Options in Rheumatology. September 2015, Volume 1, Issue 3, pp 292-304. *(Role: manuscript writing- review and editing)*
3. **Karakus S**, Akpek EK. Advances in the Diagnosis and Treatment of Dry Eye. Medscape Education Ophthalmology, May 2014.

Case Reports [CR]

1. **Karakus S**, Gottsch JD, Caturegli P, Eghrari AO. Monoclonal Gammopathy of "Ocular" Significance. Am J Ophthalmol Case Rep. 2019 May 20;15:100471.
2. O’Donnell JJ Jr, **Karakus S**, Doroslovacki P, Akpek E. Sarcoidosis Presenting with Cicatrizing Conjunctivitis. [Optom Vis Sci.](http://www.ncbi.nlm.nih.gov/pubmed/26099057) 2015 Aug;92(8):e173-5. *(Role: data collection, data analysis, manuscript writing- review and editing)*

Guidelines/Protocols, Consensus Statement, Expert Opinion, Consortium Articles [GL]

1. Akpek EK and **Karakus S**. Diagnosis and Management of Noninfectious Corneal Ulceration and Melting. Clinician’s Corner, Focal Points, Clinical Modules for Ophthalmologists. 2015 June;23(6):10-14.

Other Media [OM] (Videos, Websites, Blogs, Social Media, etc.)

1. **Karakus S.** Featured Expert. Myopia.

<https://www.hopkinsmedicine.org/health/conditions-and-diseases/myopia>

1. **Karakus S.** Featured Expert. Astigmatism.

<https://www.hopkinsmedicine.org/health/conditions-and-diseases/astigmatism>

1. **Karakus S.** Featured Expert. Hyperopia (Farsightedness).

<https://www.hopkinsmedicine.org/health/conditions-and-diseases/hyperopia-farsightedness>

1. **Karakus S.** Featured Expert. Presbyopia.

<https://www.hopkinsmedicine.org/health/conditions-and-diseases/presbyopia>

1. **Karakus S.** Featured Expert. Allergic Conjunctivitis. <https://www.hopkinsmedicine.org/health/conditions-and-diseases/allergic-conjunctivitis>
2. **Karakus S.** Featured Expert. Pink Eye. <https://www.hopkinsmedicine.org/health/conditions-and-diseases/pink-eye>
3. Dai X, **Karakus S**. Lid Wiper Epitheliopathy. American Academy and Ophthalmology EyeWiki. <https://eyewiki.aao.org/Lid_Wiper_Epitheliopathy>

Media Releases or Interviews [MR]

1/2023 'Like a Miracle' – Johns Hopkins Media, Wilmer Annual Report 2022

<https://www.hopkinsmedicine.org/news/articles/like-a-miracle>

10/2022 The 6 Best Home Remedies for Pink Eye – LiveStrong.Com <https://www.livestrong.com/article/13773808-pink-eye-remedies-conjuctivitis/>

6/2022 Collaboration Explores Treatment for Vexing Condition – Johns Hopkins Media

<https://www.hopkinsmedicine.org/news/articles/collaboration-explores-treatment-for-vexing-condition>

2/2022 Conjunctivitis Not a Reliable Predictor of SARS-CoV-2 – OptometryAdvisor

<https://www.optometryadvisor.com/cornea-ocular-surface/conjunctivitis-not-a-predictor-of-sarscov2-in-absence-of-respiratory-symptoms/>

1/2022 Understanding the Origins of Ocular Rosacea – Johns Hopkins Media

<https://www.hopkinsmedicine.org/news/articles/origins-of-ocular-rosacea>

11/2021 Microbiome studies among those awarded National Rosacea Society grants – Mdedge Dermatology

<https://www.mdedge.com/dermatology/article/249035/rosacea/microbiome-studies-among-those-awarded-national-rosacea-society>

11/2021 National Rosacea Society awards 2021 research grants – Healio

<https://www.healio.com/news/dermatology/20211123/national-rosacea-society-awards-2021-research-grants>

2/2021 COVID & THE EYE. Ongoing research seeks possible ocular connections. – EuroTimes ESCRS.

<https://www.eurotimes.org/covid-the-eye/>

9/2020 Covid-19 Research Roundup – Johns Hopkins Media

<https://www.hopkinsmedicine.org/news/articles/covid-research-roundup-sum20>

6/2020Study investigates biomarkers of Sjögren’s syndrome-related dry eye - Healio

<https://www.healio.com/news/ophthalmology/20200630/study-investigates-biomarkers-of-sjgrens-syndromerelated-dry-eye?M_BT=4923849926674>

11/2018 Dry Eye Syndrome Slows Reading Rate, Study Suggests – newswise Johns Hopkins

<https://www.newswise.com/articles/dry-eye-syndrome-slows-reading-rate,-study-suggests>

11/2018 Dry Eye Found to Have Negative Impact on Prolonged Reading – PracticeUpdate Elsevier

<https://www.practiceupdate.com/content/dry-eye-found-to-have-negative-impact-on-prolonged-reading/76863>

11/2018 Another Dry Eye Harm: Slowed Reading – HealthDay

<https://consumer.healthday.com/eye-care-information-13/eye-and-vision-problem-news-295/another-dry-eye-harm-slowed-reading-739851.html>

**FUNDING**

**EXTRAMURAL Funding**

**Research Extramural Funding** - Current

2021-present The Role of Ocular Surface Microbiome in the Pathogenesis of Ocular Rosacea

National Rosacea Society

ID: 139080

$15,000

PI: Karakus

2022-present Recombinant Human Nerve Growth Factor Eye Drops for Management of Stage I Neurotrophic Keratitis (Investigator-Initiated Research)

ID: IIR-2021-1214

Dompé U.S. Inc.

$66,132

PI: Karakus

2022-present A 4-week, Phase III, multicenter, double-masked, vehicle-controlled clinical study to evaluate safety and efficacy of cenegermin (Oxervate®) 20 mcg/mL ophthalmic solution versus vehicle, in patients with severe Sjogren’s dry eye disease under treatment with Cyclosporine A (PROTEGO-2 study)

ID: 22021243

Dompé U.S. Inc.

$172,935

PI: Karakus

2023-2026 Development of standardized resources for characterization of the resident ocular surface microbiome

ID: 1254145

National Institute of Health U24

$2,069,295

PI: Karakus, Ensign, Salzberg

**Research Extramural Funding -** Previous

2014-2017 Functional Impairment of Reading Ability in Dry Eye Patients and Effects of Sustained Reading on the Ocular Surface and Tear Film.

ID: 114976

Allergan, Inc.

$242,674

PI: Akpek

Role: Co-Investigator

2014-2016 Validation of an Objective Measure of Dry Eye Severity in Saudi and U.S. Populations

ID: 115552

King Khaled Eye Specialist Hospital, Saudi Arabia

$140,477

PI: Massof

Role: Co-Investigator

2015-2016 Early Diagnosis of Sjögren’s Syndrome among Dry Eye Patients

ID: 119780

Research Foundation of ASCRS

$5,000

PI: Karakus

2016-2017 Utility of Novel Autoantibodies in the Early Diagnosis of Sjögren’s Syndrome among Dry Eye Patients

ID: 125334

Shire, Inc.

$43,299

PI: Massof

Role: Co-Investigator

2017-2019 Retrospective Analyses of Novel Autoantibodies in the Diagnosis of Sjögren’s Syndrome among Dry Eye Patients

ID: 126984

Bausch & Lomb Scientific

$33,300

PI: Akpek

Role: Co-Investigator

2020-2022 Safety and Efficacy of Dexamethasone Ophthalmic Insert (Dextenza®) in the Management of Clinically Significant Dry Eye

Ocular Therapeutix, Inc.

$236,067

PI: Akpek

Role: Co-Investigator

2022-2023 A 4-week, Phase III, multicenter, double-masked, vehicle-controlled clinical study to evaluate safety and efficacy of Oxervate® (cenegermin) 20 mcg/mL ophthalmic solution versus vehicle, in patients with severe Sjogren’s dry eye disease (PROTEGO-1 study)

Dompé U.S. Inc.

$172,935

PI: Karakus

**Educational Extramural Funding –** Current

2022-2023 Clinical Research Fellowship in Ocular Surface Diseases and Dry Eye

Dompé U.S. Inc.

$75,000

PI: Karakus

Clinical Extramural Funding None

System Innovation or Quality Improvement Extramural Funding None

Other Extramural Funding None

**INTRAMURAL Funding**

**Research Intramural Funding - Current**

2019-present The Role of Ocular Surface Microbiome in the Pathogenesis of Ocular Rosacea

Dermatology Seed Grant

$15,000

PI: Karakus and Kim

2021-present Longitudinal Analysis of Novel Autoantibodies for Early Detection of Sjögren's Syndrome in Patients with Dry Eye

Wilmer Eye Pooled Professorship Fund

Research to Prevent Blindness (RPB)

$100,000

PI: Karakus

**Research Intramural Funding**

Pending None

Previous None

Educational Intramural Funding None

Clinical Intramural Funding None

System Innovation or Quality Improvement Intramural Funding None

Other Intramural Funding None

**CLINICAL ACTIVITIES**

**Clinical Focus**

I specialize in corneal and external eye diseases with a particular interest in the ocular surface diseases in patients with autoimmune and inflammatory conditions, such as Sjögren’s syndrome, atopic keratoconjunctivitis, and ocular rosacea. I also have an interest in corneal diseases associated with abnormal sensory nerves, such as neurotrophic keratitis and neuropathic corneal pain. I perform routine and complex cataract and intraocular lens surgeries, refractive surgeries, corneal transplants, ocular surface reconstructions, and amniotic membrane transplantations. I serve as a team member of the Ocular Surface Diseases and Dry Eye Clinic at Wilmer. I also serve as the ophthalmologist member at the Postural Orthostatic Tachycardia Syndrome (POTS) program at Hopkins to address dysautonomia-related neuropathic eye pain and ocular surface diseases in patients with POTS. I am sought out regionally and nationally for my clinical expertise on complex dry eye and ocular surface diseases, as evidenced by my role as a consultant related to these topics.

**Certification**

Medical, other state/government licensure

2011-present Medical License, Physician and Surgeon, Turkey (#130752)

2016 Educational Commission for Foreign Medical Graduates (ECFMG) Certificate

2018-present Medical License, Physician and Surgeon, State of Maryland, USA (#D0086343)

2017 STAR S4 IR Excimer Laser System Certification

2017 IntraLase iFS Laser System Certification

2017 Avedro Cross-Linking Certificate

Clinical (Service) Responsibilities

2019-2020 Ophthalmologist, Wilmer Eye Institute, Johns Hopkins Hospital, 70%

2019-2022 Residency Supervisor/Residency Core Faculty, Wilmer Eye Institute, Johns Hopkins Hospital, 10%

2019-present Team member, Ocular Surface Diseases and Dry Eye Clinic, Wilmer Eye Institute, Johns Hopkins Hospital, 5%

2021-present Ophthalmologist, Wilmer Eye Institute, Johns Hopkins Hospital, 50%

2023-present Postural Orthostatic Tachycardia Syndrome (POTS) Center, Johns Hopkins Hospital, 5%

**Memberships**

American Academy of Ophthalmology (AAO)

Cornea Society

American Society of Cataract and Refractive Surgery (ASCRS)

ASCRS Young Eye Surgeons (YES)

International Society of Refractive Surgery (ISRS)

The Association for Research in Vision and Ophthalmology (ARVO)

Tear Film & Ocular Surface Society (TFOS)

Women in Ophthalmology (WIO)

Turkish Ophthalmological Association (TOA)

TOA Young Ophthalmologists (YO)

**EDUCATIONAL ACTIVITIES**

**Teaching**

Classroom Instruction

*JHMI/Regional*

07/2016 Presenter, Ophthalmology Residents, Fellows, and Faculty, *Fungal Keratitis*, Cornea and External Diseases Grand Rounds, Wilmer Eye Institute, Baltimore, Maryland.

08/2016 Presenter, Ophthalmology Residents and Fellows, *Fungal Keratitis*, Cornea and External Diseases Journal Club, Wilmer Eye Institute, Baltimore, Maryland.

09/2016 Presenter, Ophthalmology Residents, Fellows, and Faculty, *Secondary Mucous Membrane Pemphigoid in a Patient with Stevens Johnson Syndrome*, Cornea and External Diseases Grand Rounds, Wilmer Eye Institute, Baltimore, Maryland.

03/2017 Presenter, Ophthalmology Residents, Fellows, and Faculty, *Immunotactoid Keratopathy*, Cornea and External Diseases Grand Rounds, Wilmer Eye Institute, Baltimore, Maryland.

05/2017 Lecturer, Ophthalmic Technicians and Medical Staff, *Recent Advances in Cornea and Anterior Segment,* Wilmer Eye Institute “Day of Learning”, Wilmer Eye Institute, Baltimore, Maryland.

06/2017 Presenter, Ophthalmology Residents and Fellows, *DALK versus PK in Keratoconus*, Cornea and External Diseases Journal Club, Wilmer Eye Institute, Baltimore, Maryland.

05/2018 Lecturer, Ophthalmic Technicians and Medical Staff, *Dry Eye: 2018 Update*, Wilmer Eye Institute “Day of Learning”, Wilmer Eye Institute, Baltimore, Maryland.

05/2019 Lecturer, Ophthalmic Technicians and Medical Staff, *Dry Eye: 2019 Update*, Wilmer Eye Institute “Day of Learning”, Wilmer Eye Institute, Baltimore, Maryland.

06/2019 Lecturer, Ophthalmology Residents, Fellows, and Medical Students, *Management of Dry Eye,* Wilmer Eye Institute, Baltimore, Maryland.

11/2020 Panelist, Ophthalmologists and Optometrist, Dry Eye Procedures, Wilmer Eye Institute, Baltimore, Maryland.

01/2021 Lecturer, Dermatology Residents, Fellows, and Faculty, *Ocular Rosacea*, Johns Hopkins School of Medicine, Baltimore, Maryland.

04/2022 Lecturer, Ophthalmology Residents, *Ocular Surface Diseases*, Wilmer Eye Institute, Baltimore, Maryland.

*National* None

*International* None

Clinical Instruction

*JHMI/Regional*

2019-2021 Instructor, Undergraduate/Premedical Students, Homewood Medical Tutorial,

Comprehensive Eye Care, Wilmer Eye Institute, Johns Hopkins University

2019-present Attending, Ophthalmology Residents, Residency Service, Wilmer Eye Institute, Johns Hopkins University

*National* None

*International* None

CME Instruction

*JHMI/Regional*

2016 Speaker, *Fungal Keratitis,* the Wilmer Eye Institute's 29th Annual Current Concepts in Ophthalmology, Johns Hopkins Medicine, Baltimore, Maryland.

*National*

11/5/2022 *Dry Eye, Blepharitis, Contact Lens Intolerance*, 4th Annual Mid-Atlantic Ocular Surface Forum: “Effective Solutions for Challenging Cases, Baltimore, MD.

*International* None

**Mentoring**

Pre-doctoral Advisees /Mentees

2019-2020 Xuanjia (Sinja) Fan, Medicine Science and the Humanities, Johns Hopkins University

2020-2021 William Hsu, Molecular and Cellular Biology, Johns Hopkins University

2019-present Xi (Maggie) Zhu, Molecular and Cellular Biology and Public Health, Johns Hopkins University

2020-present Xi (Daisy) Dai, MD Candidate, Dean’s Research Fellow, Johns Hopkins University School of Medicine *(matched through American Medical Women's Association at Johns Hopkins University School of Medicine, awarded Fight for Sight Summer Student Fellowship, matched ophthalmology residency program at Yale University)*

2022-present Caroline Daly, MD candidate, MS-4, Johns Hopkins University School of Medicine *(matched ophthalmology residency program at University of Maryland)*

2022-present Felipe Barandiaran, Molecular and Cellular Biology, Johns Hopkins University

2022-present Kevin Wang, Molecular and Cellular Biology, Johns Hopkins University

Post-doctoral Advisees /Mentees

2021-present Ugur Tunc, MD, Ocular Surface Disease Research Fellow, Wilmer Eye Institute, Baltimore, MD *(Ocular Surface Disease research fellow at Johns Hopkins, awarded with the International Ophthalmological Fellowship Foundation Subspecialty Fellowship Program)*

**RESEARCH ACTIVITIES**

Research Focus

I am a clinician-scientist with a research focus on ocular surface diseases. I study the role of the ocular surface microbiome in the pathogenesis of ocular rosacea. As part of the NIH U24 Ocular Surface Microbiome Consortium, we also work on standardizing the research methods and developing validated protocols to study ocular surface microbiome. I am also interested in serological and tear biomarkers in Sjögren’s disease. I am conducting a longitudinal study to determine the utility of the tissue-specific autoantibodies in the early diagnosis of Sjogren’s disease in patients with dry eye. Sjogren’s disease is primarily known as a disease causing dry eye and dry mouth; however, it also significantly impacts the peripheral and central nervous systems. I am interested in neuroimmunological consequences of Sjogren’s, where patients would present with severe ocular surface disease and diminished corneal sensation, thus neurotrophic keratitis, or no significant ocular surface disease but severe eye pain, thus neuropathic corneal pain.

**ORGANIZATIONAL ACTIVITIES**

Institutional Administrative Appointments

2019 Member, Residency Service Supervisor/Physician Search Committee, Johns Hopkins University School of Medicine

2020 Member, Comprehensive Eye Care Physician and Optometrist Search Committee, Johns Hopkins University School of Medicine

2021 Member, Wilmer Columbia Optometrist Search Committee, Johns Hopkins University School of Medicine

2022 Residency Core Faculty, Wilmer Eye Institute, Johns Hopkins University

2023 Member, Women's Professional Advancement Council (WPAC), Johns Hopkins University School of Medicine

2023 Member, Junior Faculty Resource Advisory Council (JRAC), Johns Hopkins University School of Medicine

Editorial Activities

Editorial Board appointments

2020-present Section Editor for Cornea/External Disease, EyeWiki American Academy of Ophthalmology (AAO)

2020-present Editorial Board Member, European Archives of Medical Research

2021-present Editorial Board Member, Cam Sakura Medical Journal

2023-present Reviewing Editor, Ocular Immunology and Inflammation

2023-present Editorial Board Member, Eye

2023-present International Scientific Advisory Board Member, Beyoglu Eye Journal

2023- present Editorial Board Member, Scientific Reports

Journal peer review activities

2013-present Expert Review of Ophthalmology

2014-present British Journal of Ophthalmology

2017-present Journal of Ocular Pharmacology and Therapeutics

2017-present Cornea

2018-present Beyoglu Eye Journal

2018-present Cochrane Eyes and Vision

2019-present Translational Vision Science & Technology

2020-present American Journal of Ophthalmology

2020-present Eye

2021-present BMC Ophthalmology

2021-present Clinical Ophthalmology

2021-present BMJ Open Ophthalmology

2021-present Science Advances

2022-present Scientific Reports

2022-present PLOS One

2023-present Ocular Immunology and Inflammation

Professional Societies

2017-2019 Turkish Ophthalmological Society Young Ophthalmologists, Delegate for Relations with the United States

Consultantships

2018 W.L. Gore & Associates, Inc., Unmet Needs about Corneal Endothelial Dystrophy, Institutional Service Agreement

2021 Guidepoint Global LLC, Dry Eye Disease

2021 Guidepoint Global LLC, Neurotrophic Keratitis

2021 PRC Corporation, Dry Eye Study

2021 Dompé farmaceutici S.p.A., Neurotrophic Keratitis

2022 Dompé US, Inc., Sjogren’s Syndrome

2023 Dompé US, Inc., Corneal Nerve Imaging and Neuropathic Corneal Pain

2023 Dompé US, Inc., Anti-IL-8 Therapy in Ocular Surface Disease

2023 Checkpoint Capital, Persistent Corneal Epithelial Defect and Neurotrophic Keratitis

**RECOGNITION**

Awards, Honors

2015 ASCRS Foundation Research Grant, *“Early diagnosis of Sjögren’s syndrome among dry eye patients,”* Wilmer Eye Institute, Baltimore, MD.

2018 Best Paper by Residents and Fellows, ASCRS Young Eye Surgeons Committee, *“Using Intraocular Lens Cartridge for Insertion of Graft in Descemet Membrane Endothelial Keratoplasty,”* Washington, DC.

2018 Best Paper, Wilmer Residents Association Clinical and Research Meeting Committee, *“Effects of Prolonged Reading on Dry Eye,”* Wilmer Eye Institute, Baltimore, MD.

2019 The Welch Scholarship Award, the Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.

2019 "Exceptionally Good Review" ranking for peer-review activity, Translational Vision Science & Technology Journal Editorial Board

2021 Residency Appreciation Award, Wilmer Eye Institute, Johns Hopkins University, Baltimore, MD

2023 Residency Appreciation Award, Wilmer Eye Institute, Johns Hopkins University, Baltimore, MD

Invited Talks

*JHMI/Regional*

3/30/2019 *Aspirated, Injected Tri-Folded DMEK*, Wilmer Eye Institute Endothelial Keratoplasty Symposium, Baltimore, MD

*National*

8/14/2018 *Management of Dry Eye*, Refractive/Dry Eye Symposium, National Medical Association Meeting Ophthalmology Section, Orlando, FL.

1/3/2020 *Sjögren’s Syndrome: What You Don’t Know Might Surprise You*, NYU Langone Health Current Concepts of Ophthalmology 2020, New York City, NY

1/3/2020 *Cataract Surgery in Patients with Dry Eye*, NYU Langone Health Current Concepts of Ophthalmology 2020, New York City, NY

5/20/2022 *Tissue-Specific Autoantibodies in Patients with Dry Eye Suspected of Sjogren’s Syndrome*, SJONET Monthly Meeting, Division of Rheumatology, University of Wisconsin, Madison, Wisconsin.

11/5/2022 *Dry Eye, Blepharitis, Contact Lens Intolerance*, 4th Annual Mid-Atlantic Ocular Surface Forum: “Effective Solutions for Challenging Cases, Baltimore, MD.

01/06/2023 *About What’s Going on Beneath the Surface,* Grand Rounds, Kentucky Lions Eye Center, University of Louisville, Louisville, Kentucky.

02/16/2023 *About What’s Going on Beneath the Surface,* Grand Rounds, Department of Ophthalmology and Visual Sciences, University of Iowa Hospitals and Clinics, Carver College of Medicine, Iowa City, Iowa.

03/03/2023 *About What’s Going on Beneath the Surface,* Grand Rounds, Department of Ophthalmology and Visual Sciences, University of Wisconsin, Madison, Wisconsin.

*International*

5/28/2019 *DSAEK*, Técnicas quirúrgicas avanzadas en ectasias y degeneraciones, Wilmer Eye Institute / Asociación para Evitar la Ceguera en México, the 34th Pan-American Congress of Ophthalmology, Cancun, Mexico.

5/28/2019 *Endothelial keratoplasty techniques*, Wilmer Eye Institute Current Concepts of Ophthalmic Surgery @ PAAO 2019, the 34th Pan-American Congress of Ophthalmology, Cancun, Mexico.

11/5/2021 *Sjogren’s Syndrome,* the 55th Turkish Ophthalmological Society, Antalya, Turkey

**OTHER PROFESSIONAL ACCOMPLISHMENTS**

Posters

1. Wang K, Tunc U, **Karakus S.** Elevated Anti-Cyclic Citrullinated Peptide Levels Associated with Filamentary Keratitis. Wilmer Research Meeting 2023, Baltimore, MD.
2. Tunc U, **Karakus S**. Postural Orthostatic Tachycardia Syndrome (POTS) Causes Ocular Pain. Wilmer Research Meeting 2023, Baltimore, MD.
3. Barandiaran F, Tunc U, Gonzales A, Di Meglio L, **Karakus S.** Characteristics of Belamaf-Associated Keratopathy in Patients with Multiple Myeloma. Wilmer Research Meeting 2023, Baltimore, MD.
4. **Karakus S.** Postural Orthostatic Tachycardia Syndrome (POTS) Causes Ocular Pain. ARVO 2023, New Orleans, LA.
5. Dai X, Zhu X, **Karakus S**. The Effect of Topical Recombinant Human Nerve Growth Factor on Tear Production. WIO Summer Symposium 2022, Monterey, CA.
6. **Karakus S**, Dai X, Zhu X. The Effect of Topical Recombinant Human Nerve Growth Factor on Tear Production. ARVO 2022, Denver, CO.
7. Zhu X, Cui D, Dai X, Dhungana A, Akpek EK, **Karakus S.** Evaluation of Objective Dry Eye Parameters and Sjögren’s Syndrome Status in a Longitudinal Cohort of Patients Evaluated with Novel, Tissue-Specific Autoantibodies. ARVO 2022, Denver, CO.
8. Dai X, **Karakus S.** Topical Recombinant Human Nerve Growth Factor Treatment for Refractory Stage I Neurotrophic Keratitis. WIO Summer Symposium 2021, Amelia Island, FL.
9. Cui D, Mathews P, **Karakus S**, Akpek EK. Long-Term Ocular Outcomes of Sjogren’s Syndrome vs. Non-Sjogren’s Dry Eye Disease. ARVO 2020, Baltimore, MD.
10. Ighani M, Dzhaber D, **Karakus S,** Jain S, Eghrari AO. Surgical outcomes of pre-loaded, tri-folded Descemet membrane endothelial keratoplasty tissues utilizing the Endoglide TM inserter. ARVO 2020, Baltimore, MD.
11. **Karakus S,** Dzhaber D, Akpek E. Utility of an In-Office Finger-Prick Testing for Diagnosis of Sjögren’s Syndrome. American Academy of Ophthalmology (AAO) Annual Meeting 2018, Chicago, IL.
12. **Karakus S,** Ighani M, Eghrari AO. Using Intraocular Lens Cartridge for Insertion of Graft in Descemet Membrane Endothelial Keratoplasty. 2018 Annual Wilmer Residents Association Clinical and Research Meeting, Baltimore, MD.
13. **Karakus S**, Baer A, Agrawal D, Massof RW, Akpek E. Utility of Novel Autoantibodies in the Diagnosis of Sjögren’s Syndrome Among Patients with Dry Eye. 14th International Sjögren’s Symposium 2018, Washington, DC.
14. **Karakus S,** Baer A, Akpek EK. Depressive Symptoms, Fatigue, and Dry Eye in Patients with Sjögren’s Syndrome. 14th International Sjögren’s Symposium 2018, Washington, DC.
15. **Karakus S**, Akpek EK, Massof RW. An objective measure of Dry Eye Severity Associated with Serologic Markers in Sjögren’s Syndrome. ARVO 2016 Annual Meeting, Seattle, Washington, USA, May 2016.
16. Mathews PM, **Karakus S**, Ramulu PY, Akpek EK. Impact of Clinically Significant Dry Eye on Self-Reported Driving Performance. ARVO 2016 Annual Meeting, Seattle Washington, USA, May 2016.
17. **Karakus S**, Akpek EK, Massof RW. Objective Measure of Dry Eye Severity Associated with Serologic Markers in Sjögren’s Syndrome. 27th Annual Wilmer Research Meeting, Baltimore, MD, April 2016.
18. Mudie L, LaBarre S, **Karakus S**, Munoz B, Friedman DS. Performance of the Icare Home (TA022) Self-Tonometer. ARVO 2016 Annual Meeting, Seattle, Washington, USA, May 2016.
19. Mudie L, LaBarre S, **Karakus S**, Munoz B, Friedman DS. Clinical Performance Study For Self-Use of an Intraocular Pressure Measuring Device: The Icare Home Device. 26th AGS Annual Meeting, Ft. Lauderdale, Florida, March 3-6, 2016.
20. **Karakus S**, Ahmad S, Akpek EK, Massof RW. Validation of an Objective Measure of Dry Eye Severity. ARVO 2015 Annual Meeting, Denver, Colorado, USA, May 2015.
21. **Karakus S**, Ahmad S, Akpek EK, Massof RW. Validation of an Objective Measure of Dry Eye Severity. 26th Annual Wilmer Research Meeting, Baltimore, MD, April 2015.
22. **Karakus S**, Agca A, Demirok A, Yilmaz OF. Assessment of Late Capsular Block Syndrome Using Anterior Segment OCT versus Ultrasound Biomicroscopy. TOD 47th Annual Ophthalmology Congress, Antalya, Turkey, November 2013.
23. **Karakus S**, Ceritoglu MY. Tick Infestation of the Eyelid: A Case Report. TOD 47th Annual Ophthalmology Congress, Antalya, Turkey, November 2013.
24. **Karakus SH**, Kaya V, Basarir B, Altan C, Demirok A, Yilmaz OF. Add-On Lens Implantation to Correct Pseudophakic Refractive Errors. TOD 45th Annual Ophthalmology Congress, Kyrenia, Turkish Republic of Northern Cyprus, October 2011.
25. **Karakus SH**, Satana B, Altan C, Cinal A, Yilmaz OF. Visante OCT Changes in Angle Closure Glaucoma Before and After ALPI. TOD 45th Annual Ophthalmology Congress, Kyrenia, Turkish Republic of Northern Cyprus, October 2011.
26. **Karakus SH**, Gokyigit B, Akar S, Varan G, Yildirim Y, Tuzun D, Demirok A, Yilmaz OF. Use of Botulinum Toxin Type A in Type 1 Duane Retraction Syndrome. XIth Meeting of the International Strabismological Association, Istanbul, Turkey, September 2010.
27. **Harmanci S**, Cakir M, Yazici AT, Bozkurt E, Tuzun D, Demirok A, Yilmaz OF. Passive Removal of Silicone Oil Using 23-Gauge Sutureless System. TOD 43th Annual Ophthalmology Congress, Antalya, Turkey, November 2009.

Oral/Podium Presentations

1. Rajabalee N, Tunc U, Smith TJ, **Karakus S.** Scrambler Therapy for Unilateral Chronic Neuropathic Eye Pain. Wilmer Research Meeting 2023, Baltimore, MD.
2. Dai X, Zhu X, **Karakus S**. Topical Recombinant Human Nerve Growth Factor for Management of Refractory Epithelial Keratopathy. ARVO 2022, Denver, CO.
3. Zhu X, Cui D, Dai X, Dhungana A, Akpek EK, **Karakus S.** Long-Term Clinical Implications of Tissue-Specific Autoantibodies in Patients with Dry Eye Suspected of Sjogren’s Syndrome. ASCRS 2022, Washington, DC.
4. Zhu X, Foster J, Dai X, Hsu W, Gonzales A, Eberhart C, **Karakus S**. Prevalence of SARS-CoV-2 in Conjunctival Swab Samples Among Patients Presenting with Conjunctivitis during the COVID-19 Pandemic. ASCRS 2022, Washington, DC.
5. Dai X, Zhu X, Cui D, Di Meglio L, **Karakus S.** Longitudinal Profiling of Serological Markers in Patients with Dry Eye Suspected of Sjögren's Syndrome. ASCRS 2022, Washington, DC.
6. Dai X, Zhu X, **Karakus S**. The Effect of Topical Recombinant Human Nerve Growth Factor on Tear Production. ASCRS 2022, Washington, DC.
7. **Karakus S,** Wu HY, Zhang Q, Akpek E, Masli S. Distinct Tear Composition in Sjögren’s Syndrome Related Ocular Surface Inflammation. ARVO 2020, Baltimore, MD.
8. **Karakus S**, Cui D, Zhu X, Akpek EK. Longitudinal Study of Novel Autoantibodies in Patients with Dry Eye. ASRCS 2020, Boston, MA.
9. **Karakus S**, Ighani M, Liu T, Eghrari A. No-Touch Loading of Tri-Folded, Endothelium-in Grafts into a Cartridge for Descemet Membrane Endothelial Keratoplasty. ASCRS 2019, San Diego, CA.
10. **Karakus S**, Akpek E. Effects of Prolonged Reading on Tear Film Homeostasis. ASCRS 2019, San Diego, CA.
11. **Karakus S**, Akpek E. Depressive Symptoms, Fatigue, and Dry Eye in Patients with Sjögren’s Syndrome. ASCRS 2019, San Diego, CA.
12. Varadaraj V, **Karakus S**, Mathews PM, Ramulu PY, Swenor BS, Akpek EK. Impact of corneal staining on visual performance. Sonoma Eye Meeting 2019, Sonoma, CA.
13. **Karakus S**, Agrawal D, Hindman H, Heinrich C, Ramulu PY, Akpek EK. Effects of Prolonged Reading on Dry Eye. 2018 Annual Wilmer Residents Association Clinical and Research Meeting, Baltimore, MD. *(Selected as Best Paper)*
14. **Karakus S**, Mathews P, Agrawal D, Heinrich C, Ramulu PY, Akpek EK. Impact of Dry Eye on Prolonged Reading. 14th International Sjögren’s Symposium 2018, Washington, DC.
15. **Karakus S,** Ighani M, Eghrari AO. Using Intraocular Lens Cartridge for Insertion of Graft in Descemet Membrane Endothelial Keratoplasty. ASCRS 2018, Washington, DC. (Selected by the Young Eye Surgeons Committee to be presented during *the Best Papers and Posters by Residents and Fellows* session)
16. **Karakus S,** Agrawal D, Hindman H, Heinrich C, Ramulu PY, Akpek EK. Alterations in Ocular Surface from Prolonged Reading. ASCRS 2018, Washington, DC.
17. **Karakus S,** Baer A, Agrawal D, Massof RW, Akpek E. Early Detection of Sjögren’s Syndrome among Dry Eye Patients. ASCRS 2017, Los Angeles, CA.
18. Mathews PM, **Karakus S,** Ramulu PY, Akpek EK. Variation of Tear Osmolarity and Association with Ocular Surface Measurements in Patients with Dry Eye Syndrome. 8th International Conference on the Tear Film & Ocular Surface: Basic Science and Clinical Relevance, Le Corum, Montpellier, France, September 2016.
19. **Karakus SH**, Gokyigit B, Akar S, Varan G, Yıldırım Y, Tuzun D, Demirok A, Yilmaz OF. Long Term Outcomes of Surgical Treatment in Patients with Brown Syndrome. XIth Meeting of the International Strabismological Association, Istanbul, Turkey, September 2010.
20. **Harmanci S**, Kaya V, Utine CA, Oral D, Hekimhan PK, Ozdemir I, Kevser MA, Demirok A, Yilmaz OF. Comparison of Refractive and Visual Outcomes after Intacs vs. Ferrara Intrastromal Corneal Ring Segment Implantation. TOD 44th Annual Ophthalmology Congress, Antalya, Turkey, September-October 2010.
21. **Harmanci S**, Demirel B, Pinarci EY, Altan C, Cakir M, Demirok A, Yilmaz OF. Efficacy and Safety of Photodynamic Therapy in Patients with Chronic Central Serous Chorioretinopathy. TOD 43rd Annual Ophthalmology Congress, Antalya, Turkey, November 2009.

Community Services

2013 Vision screening of orphanage children, Istinye State Hospital, Ministry of Health, Istanbul, Turkey.

2020 Retirement community health talk, “Aging Eye”, Lutheran Village at Miller’s Grant, Ellicott City, Maryland.