

**BIOGRAPHICAL SKETCH**

Provide the following information for the Senior/key personnel and other significant contributors.  
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Emily Sun

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Heed Fellowship

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Start Date MM/YYYY	Completion Date MM/YYYY	FIELD OF STUDY
Duke University, Durham, NC	B.S.	08/2016	05/2020	Biology, Global Health
Johns Hopkins School of Medicine	M.D.	08/2020	05/2024	Medicine
Columbia University Irving Medical Center, New York, NY	Residency	06/2024	In Progress	Ophthalmology

**A. Personal Statement**

My academic passions center on health disparities, medical education, and cornea, with a focus on how systems of care and training can be improved to better serve both patients and physicians. During medical school, I worked with ViSION, a student-run vision screening program. As Community and Faculty Liaison, I partnered with community organizations to improve access to eye care for underserved populations by organizing screenings and coordinating follow-up care. This work led me to pursue research projects on inequities in ophthalmology, including studies on racial differences in the presentation of giant cell arteritis and the development of a home-based visual field test aimed at reducing barriers to care.

I have also developed a strong focus in medical education within ophthalmology, particularly in understanding and addressing disparities in training and career advancement. My research has examined gender differences in faculty rank and salary, as well as gender and racial disparities in research productivity among ophthalmology trainees, with presentations at multiple national meetings. At an institutional level, I have contributed to curriculum development within my residency program, including efforts to develop a formal wet lab curriculum, strengthen intern education, and create resources for junior residents. I am actively involved in mentorship through our institution's Resident Mentor for Diversity program and in national initiatives through Women in Ophthalmology, including the Academic Research Network (WORK) Group and the Speaker Training Task Force, which focus on advancing equity and professional development within the field.

More recently, I have developed a clinical and research interest in cornea, with particular interest in surgical outcomes and perioperative decision-making. My current research includes projects on intracameral antibiotic use, postoperative management following endothelial keratoplasty, and outcomes of corneal transplantation in older patient populations. I am also on the New York Eye-Bank Leadership Council, where I contribute to initiatives focused on corneal transplantation, eye banking, and expanding access to care.

My long-term goal is to pursue a career in academic ophthalmology as a clinician-educator specializing in cornea. I aim to integrate clinical care with research addressing disparities in both patient outcomes and academic ophthalmology, while contributing to medical education through curriculum development, mentorship, and leadership roles on an institutional and national level.

## **B. Positions, Scientific Appointments and Honors**

### **Leadership and Professional Activities**

2025–Present: New York Eye-Bank Leadership Council

2025–Present: Women in Ophthalmology Academic Research Network (WORK) Group

2025–Present: Women in Ophthalmology Speaker Training Task Force

2025–Present: Women in Ophthalmology Social Media/Outreach Committee

2024–Present: Resident Mentor for Diversity, Columbia University

2021–2023: Community and Faculty Liaison, Vision Screening in Our Neighborhoods (ViSION) Program

### **Honors**

2024: Gold Humanism Honor Society, Johns Hopkins School of Medicine

2020: Summa Cum Laude, Duke University

2016–2020: Dean's List with Distinction, Duke University

### **Peer Review**

2025–Present: Ad Hoc Reviewer, European Journal of Ophthalmology

## **C. Contributions to Science**

My scholarly work has focused on advancing corneal disease management, addressing disparities in ophthalmology, and medical education research. In cornea, I have contributed to studies examining real-world practice patterns and surgical outcomes in corneal transplantation and anterior segment surgery. In parallel, my research in disparities within ophthalmology has examined structural inequities within both the academic workforce and the training pipeline, including gender- and race-associated differences in research productivity, faculty rank, and salary among ophthalmology trainees and faculty, highlighting persistent barriers to equity. In addition, my medical education research has focused on evaluating the ophthalmology residency selection process and academic career paths, including studies of how scholarly productivity relates to fellowship choice and the broader trajectory of research output among applicants. Moving forward, I aim to study how clinical outcomes in corneal disease, access to care, and training environments collectively shape both patient outcomes and the ophthalmology workforce.

### Journal Publications

1. **Sun E**, Khan NC, Rand G. Neisseria Meningitidis Keratitis in a Pediatric Patient. (Under Revision at JAAPOS).
2. **Sun E**, Rand G. Treatment of ocular surface inflammation secondary to preserved and unpreserved eyedrops. (Under Revision at AES).
3. **Sun E**, Oh JK, Ho BX, Kim J, Reyes J, Sridhar J, Chen RWS. Association Between Pre-residency Peer-Reviewed Publications and Fellowship Choice in Ophthalmology. (Under Review at JAO).
4. **Sun E**, Trief D. Corneal densitometry and pathology findings in penetrating keratoplasty tissue of a patient with mucopolysaccharidosis type VI. (Under Review at JAAPOS).
5. Akhlaq A, Abdelhalim AA, **Sun E**, Dun C, Yonekawa Y, Jeng BH, Zebardast N, Mian SI, Sodhi AS, Khurana RN, Ramulu PY, Srikumaran D, Sabit A, Woreta FA. Practice Patterns and Barriers to Intracameral Antibiotic Use Among Cornea, Retina, and Glaucoma Specialists: A Cross-sectional Survey. (Under Review at AJO).
6. **Sun E**, Dun C, Burden SK, Faridi A, Green LK, Kossler AL, Prescott CR, Rosenberg JB, Shriver EM, Sun G, Weng CY, Wings KM, Woodward MA, Woreta FA. Gender Differences in Faculty Rank and Salary among Ophthalmology Subspecialists at U.S. Public Medical Schools. (In Press at AJO International).
7. Lima de Carvalho JR Jr, Oh JK, Ragi S, Kim J, Manzi RS, **Sun E**, Cabral T, Belfort R Jr, Greenstein VC, Sparrow JR, Tsang SH. Multimodal Imaging and Dark-Adapted Chromatic Perimetry in BEST1 Vitelliform Macular Dystrophy: Identification of Outcome Measurements. *Ophthalmol Sci*. 2025 May 6;5(5):100823. doi: 10.1016/j.xops.2025.100823. PMID: 40688488; PMCID: PMC12270738.
8. Chung YM, Hu CS, **Sun E**, Tseng HC. Morphological multiparameter filtration and persistent homology in mitochondrial image analysis. *PLoS One*. 2024 Sep 20;19(9):e0310157. doi: 10.1371/journal.pone.03s10157. Erratum in: *PLoS One*. 2025 Aug 20;20(8):e0330651. doi: 10.1371/journal.pone.0330651. PMID: 39302926; PMCID: PMC11414911.
9. **Sun E**, Tian J, Eltemsah L, Srikumaran D, Sun G, Chow J, Woreta F. Impact of Gender and Underrepresented in Medicine Status on Research Productivity Among Ophthalmology Residency Applicants. *Am J Ophthalmol*. 2024 Jan;257:1–11. doi:10.1016/j.ajo.2023.07.018.
10. **Sun E**, Li X, Gruener A, Chang J, Henderson A, Carey A. Baseline Characteristics and Clinical Presentation of Biopsy Proven Giant Cell Arteritis in White Compared to Black Patients. *J Neuroophthalmol*. 2023. doi:10.1097/WNO.0000000000001817.

11. **Sun E**, Tsou BC, Tian J, Eltemsah L, Srikumaran D, Woreta F. Fate of Research Articles Reported by Ophthalmology Residency Applicants: What Happens to “Submitted” and “In Preparation” Articles? *Journal of Surgical Education*. doi:10.1016/j.jsurg.2023.02.005.
12. **Sun E**, Li X, Gruener A, Chang J, Eberhart C, Henderson A, Carey A. Presenting Features of Giant Cell Arteritis with Active versus Healed Arteritis on Biopsy. *Neuro-Ophthalmology*. 2023;1–7. doi:10.1080/01658107.2023.2175874.
13. **Sun E**, Kraus CL. The Ophthalmic Manifestations of Down Syndrome. *Children*. 2023;10:341. doi:10.3390/children10020341.
14. Massenzio SS, Uhler TA, Massenzio EM, **Sun E**, Srikumaran D, Clifton M, Green L, Sun G, Wang J, Woreta F. Navigating the Ophthalmology Urology Match with a Significant Other. *J Surg Educ*. 2023;80(1):135–142. doi:10.1016/j.jsurg.2022.07.026.

#### Posters/Presentations:

1. **Sun E**, Tedla S, Deveney T, Fromal O, Schehlein E, Sun G, Woreta FW, Wings KM. Public Speaking Experience and Training Among Women in Ophthalmology: A Survey-Based Assessment. Submitted to Women in Ophthalmology Summer Symposium 2026.
2. Tedla S, **Sun E**, Deveney T, Fromal O, Schehlein E, Sun G, Woreta FW, Wings KM. Assessing Public Speaking Training Needs Among Women in Ophthalmology. Submitted to Women in Ophthalmology Summer Symposium 2026.
3. Perez B, **Sun E**, Florakis GJ, Hark L, Hsu J, Rand G, Trief D, Suh LH. Corneal Transplantation Outcomes and Risk Factors for Graft Failure in Patients Aged 90+. Submitted to American Academy of Ophthalmology Annual Meeting 2026.
4. **Sun E**, Trief D. “Cloudy with a Chance of Corneas: A Case of Congenital Hereditary Stromal Dystrophy.” Northeast Cornea Meeting 2026, April 2026. *Oral Presentation*.
5. **Sun E**, Woodward M, Prescott C, Woreta F. Gender differences in salary among cornea specialists at U.S. public medical schools. World Cornea Congress Annual Meeting, March 2025. *Poster Presentation*.
6. **Sun E**, Faridi A, Sun G, Green L, Burden S, Woreta F. Gender Differences in Salary and Faculty Rank among Clinical Ophthalmology Faculty at U.S. Medical Schools. AUPO Annual Meeting, January 2025. *Poster Presentation*.
7. **Sun E**, Shriver E, Burden S, Faridi A, Green L, Kossler A, Prescott C, Rosenberger J, Sun G, Weng C, Wings K, Woodward M, Woreta F. Gender Differences in Rank and Salary among Ophthalmology Subspecialists at U.S. Public Medical Schools. Women in Ophthalmology Summer Symposium, 2024. *Podium Presentation*.
8. **Sun E**, Woodward M, Prescott C, Woreta F. Gender Differences in Ophthalmologist Salary Among Cornea Specialists at U.S. Public Medical Schools. Eye Bank Association of America Annual Meeting, 2024. *Podium Presentation*.
9. **Sun E**, Tian J, Eltemsah L, Srikumaran D, Sun G, Chow J, Woreta F. Impact of Gender and Underrepresented in Medicine Status on Research Productivity among Ophthalmology Residency Applicants. AUPO Annual Meeting 2023; Johns Hopkins Institute for Excellence in Education (IEE) Annual Conference 2023. *Podium Presentation*.
10. **Sun E**, Carey A. Development and Validation of a Home Visual Field Screening Test. North American Neuro-Ophthalmology Society (NANOS) Annual Meeting, March 2023. *Poster Presentation*.
11. **Sun E**, Tsou BC, Tian J, Eltemsah L, Srikumaran D, Woreta F. Impact of Gender and Underrepresented Minority Status on Research Productivity among Ophthalmology Residency Applicants. Women in Ophthalmology Annual Meeting, 2022. *Poster Presentation*.
12. **Sun E**, Tsou BC, Tian J, Eltemsah L, Srikumaran D, Woreta F. Outcomes of “Submitted” and “In Preparation” Research Articles Reported by Ophthalmology Residency Applicants. Institute for Excellence in Education Conference, 2022. *Poster Presentation*.
13. **Sun E**, Tsou BC, Tian J, Eltemsah L, Srikumaran D, Woreta F. Outcomes of “Submitted” and “In Preparation” Research Articles Reported by Ophthalmology Residency Applicants. AUPO Annual Meeting 2022; Johns Hopkins Medical Student Research Symposium (MSRS) 2022. *Podium Presentation*.
14. Ip S, Uhler T, Massenzio E, **Sun E**, Srikumaran D, Clifton M, Green L, Sun G, Wang J, Woreta F. Navigating the Ophthalmology and Urology Match with a Significant Other. AUPO Annual Meeting 2022. *Podium Presentation*.
15. **Sun E**, Li X, Gruener A, Chang J, Henderson A, Carey A. Comparing Baseline Presentation of Active Versus Healed Giant Cell Arteritis. NANOS Annual Meeting, February 2022. *Poster Presentation*.
16. **Sun E**, Li X, Gruener A, Chang J, Henderson A, Carey A. Comparing Baseline Presentation of Giant Cell Arteritis in White Versus Black Patients. NANOS Annual Meeting, February 2022. *Poster Presentation*.
17. **Sun E**, Strickland L, Chen C, Tseng H. Loss of optineurin disrupts mitochondrial networks and morphology. ARVO Annual Meeting, April 2019; Duke University Visible Thinking Symposium, April 2019. *Poster Presentation*.
18. Powers J, Buckley KT, **Sun E**, Chen C, Strickland L, Inman D, Tseng H. Glaucoma-associated E50K-optineurin mutation impairs mitochondrial-derived vesicle trafficking. ARVO Annual Meeting, April 2019. *Poster Presentation*.
19. Chen C, **Sun E**, Tseng H. The role of optineurin in autophagy and neurodegeneration in glaucoma. Duke University Biology Honors Thesis Symposium, April 2019. *Poster Presentation*.