BIOGRAPHICAL SKETCH

NAME: Richard Norman Sather III, M.D.

POSITION TITLE: Chief Resident, Ophthalmology

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	Completion Date	FIELD OF STUDY
University of North Dakota, Grand Forks, ND	B.A.	05/2020	Music (Classical Cello Performance)
University of Minnesota Medical School, Minneapolis, MN	M.D.	05/2024	Medicine
University of Minnesota, Minneapolis, MN	Residency	06/2028 (expected)	Ophthalmology

A. Personal Statement

I am an ophthalmology resident and chief resident at the University of Minnesota with a long-term goal of becoming an academic vitreoretinal surgeon and clinician-scientist. I have developed a sustained record of research productivity across the field of retina. I initiated the first inherited retinal disease registry at the University of Minnesota, which has resulted in multiple first- and co-author publications in peer-reviewed journals such as Retina, International Journal of Molecular Sciences, Ophthalmic Genetics, and Frontiers in Ophthalmology, as well as presentations at ARVO, ASRS, and the Retinal Society. In parallel, I have served as a sub-investigator and co-investigator on multiple NEI-sponsored and industry clinical trials, including the NAC Attack Phase III trial and studies of gene therapy and iPS-derived retinal cell transplantation, gaining experience in protocol design, patient selection, and trial operations.

My research in vitreoretinal disease continues to expand, and I have led multiple studies in the areas of retinal detachment repair, macular hole surgical techniques, ocular trauma outcomes, ergonomics in vitreoretinal surgery, durability of anti-VEGF therapies, and treatments for macular telangiectasia type 2. I am preparing to lead my first prospective clinical trial in gas tamponade dynamics with air versus fluorinated gases in primary rhegmatogenous retinal detachment repair. These efforts are complemented by leadership roles as chief resident and recipient of multiple research and foundation grants. Collectively, these experiences have prepared me for a career as an academic retina faculty member who leads multicenter studies, contributes to clinical trial design, and mentors future trainees in ophthalmology, and I am seeking focused mentorship and networking through the Heed Resident Retreat to support that path.

B. Positions, Scientific Appointments, and Honors

- **Positions and Employment**
  - **2026–Present** Chief Resident, Department of Ophthalmology and Visual Neuroscience, University of Minnesota, Minneapolis, MN
  - **2024–2028** Ophthalmology Resident Physician, University of Minnesota, Minneapolis, MN

- **Other Experience and Professional Memberships**
  - **2026–Present** Minnesota Academy of Eye Physicians and Surgeons Resident Representative
  - **2026–Present** ASRS Puzzle Writing Committee Member
  - **2025–Present** Resident Member, American Society of Retinal Specialists
  - **2024–Present** Resident Member, American Society of Ophthalmic Trauma
  - **2024–Present** Resident Member, American Academy of Ophthalmology
  - **2023–2024** Alpha Omega Alpha (AOA) Executive Board Member, Coordinator for Robert J. Glaser Distinguished Teacher Award
  - **2022–Present** Founder, Sight Worth Saving Program (local eyeglass recycling initiative in conjunction with non-profit organization Medical Missions Outreach)

- **Honors**
  - **2026** Wolters Kluwer Health: *Retina* March 2026 Top Articles – Lead Author
  - **2026** PGY-2 Ophthalmology Knowledge Assessment Program (OKAP) – 95th percentile nationally
  - **2026** AAO Young Ophthalmologist Green Grant Recipient (one of five national recipients)
  - **2026** VitreoRetinal Surgery Foundation Research Grant Recipient
  - **2025** VitreoRetinal Surgery Foundation Research Grant Recipient
  - **2024** ASRS Film Festival "Best in Show" Award (co-author)
  - **2024** Vit-Buckle Society Research Grant Awardee
  - **2023** Alpha Omega Alpha Honor Society – Junior Elect
  - **2023** Gold Humanism Honor Society Inductee
  - **2023** Dean's Tribute to Excellence in Education, University of Minnesota
  - **2023** UMN Center for Applied & Translational Sensory Science Travel Grant

C. Contributions to Science

1. Inherited Retinal Disease Genotype-Phenotype Correlations, Imaging Modalities, and Ongoing Therapeutic Management

My early and ongoing research has focused on characterizing the genetic and phenotypic spectrum of inherited retinal diseases (IRD) and translating these findings into clinical trial readiness. Working within a tertiary IRD referral center with Dr. Sandra Montezuma, I have helped develop and analyze institutional databases of patients with retinitis pigmentosa, Leber congenital amaurosis, achromatopsia, and Stargardt disease using multimodal imaging and next-generation sequencing, clarifying genotype–phenotype correlations, pathogenic variants, and inheritance patterns. In addition, my work with Dr. Polly Quiram on Pierson syndrome represents one of the largest case series analyzing prophylactic surgical intervention to prevent retinal detachment, and I am involved in an international, multicenter study on unified clinical and surgical management for incontinentia pigmenti. A central theme of this research is determining which patients meet criteria for gene-replacement, pharmacologic, or surgical trials, thereby informing both patient counseling and site-level readiness for emerging therapies.

Role: Co-investigator, patient recruitment, multimodal imaging acquisition and analysis, genetic testing coordination, database management, and manuscript preparation.

Significance: Contributed towards gene therapy clinical trial enrollment while advancing understanding of IRD natural history and imaging biomarkers for ongoing clinical trials.

Research Products:

1. Molleti S, Monsalve PF, Sather RN 3rd, Moon JY, Ihinger J, Montezuma SR. Genetic phenotypic characteristics and inheritance patterns of patients with achromatopsia at a large academic institution and a review of the literature and gene therapies. *Mol Vis*. 2025;31:454–461.
2. Moon JY, Sather III RN, Montezuma SR. Overview of retinal prosthesis and future directions. *Retinal Physician*. May 2024.
3. Sather R III, et al. Clinical characteristics and genetic variants of a large cohort of patients with retinitis pigmentosa using multimodal imaging and next-generation sequencing. *Int J Mol Sci*. 2023;24:10895.
4. Sather R III, et al. Pathogenic gene variants identified in patients with retinitis pigmentosa at the referral center clinic of the University of Minnesota. *Ophthalmic Genet*. 2022; DOI: 10.1080/13816810.2022.2135110.
5. Sather RN III, Jiao G, Moon JY, Quiram P. Prophylactic laser retinopexy and scleral buckle placement for retinal detachment prevention in Pierson syndrome: a retrospective case series study. *Retina*. 2025. doi:10.1097/IAE.0000000000004421.

2. National Eye Institute Clinical Trials and Gene Therapy Research
I have served as co-investigator and sub-investigator on multiple NEI-funded Phase I–III clinical trials investigating novel therapies for inherited retinal diseases. My roles include patient identification and screening, genotype confirmation, enrollment facilitation, longitudinal follow-up coordination, and data collection. Key studies include the NAC Attack Phase III trial (oral N-acetylcysteine for retinitis pigmentosa progression), the RPGR-002 Vista observational trial (X-linked RP natural history), the SB-110-007 Phase III trial for LCA10, and a Phase I/II trial of allogeneic iPS cell-derived retinal sheets for retinitis pigmentosa. Through these trials, I have gained training in Good Clinical Practice, regulatory compliance, and clinical trial methodology that will be essential for my future independent research program.

Role: Co-investigator/Sub-investigator, patient recruitment, screening, enrollment coordination, data collection, outcome measure assessment, and contribution to trial-related publications.

Significance: Facilitated enrollment and data collection for pivotal gene therapy and neuroprotection trials while developing expertise in clinical trial methodology.

Research Products:
1. Bonnell AC, Chao JR, Wang Y, et al. [includes Sather RN]. Endogenous Levels of N-acetylcysteine in Human Plasma in the NAC Attack Study. *Invest Ophthalmol Vis Sci*. 2025;66(8):3150.
2. Rustam Z, Kong G, Ibukun FA, et al. [includes Sather RN]. Repeatability of Best Corrected Visual Acuity and Ellipsoid Zone Width in Eyes with Retinitis Pigmentosa. *Invest Ophthalmol Vis Sci*. 2025;66(8):3158.
3. Kuehlewein L, Ibukun F, Wang Y, et al. [includes Sather RN]. Lens Abnormalities and Associated Risk Factors in Retinitis Pigmentosa—Baseline Data from the NAC Attack Clinical Trial. *Invest Ophthalmol Vis Sci*. 2025;66(8):3141.

3. Gas tamponade and sustainable surgery
As co-principal investigator with Dr. Geoffrey Emerson, I am leading retrospective cohort studies to analyze intraocular gas resorption kinetics following pars plana vitrectomy for repair of primary rhegmatogenous retinal detachment and macular hole surgery. Using serial multimodal imaging, we are generating resorption curves and half-life measurements for air, SF6, and C3F8 to evaluate whether optimized end-of-case intraocular pressure with air tamponade can extend its effective duration and serve as a more sustainable alternative to fluorinated gases. This work has

implications for surgical decision-making, practice patterns, and environmental impact in vitreoretinal surgery. My goal is to translate these findings into a randomized prospective clinical trial comparing SF6 and air tamponade for primary rhegmatogenous retinal detachment.

Role: Co-principal investigator, study design, data collection, analysis, and manuscript preparation.

Significance: This work advances the integration of environmental sustainability with evidence-based surgical optimization, addressing both patient outcomes and global environmental impact.

Research Products:

1. Gas bubble dynamics study (in preparation for submission to *JVRD*, 2026)
2. Poster presentation (with grant award), 2026 ASRS 44th Annual Meeting: "Gas Bubble Dynamics of Air, SF6, and C3F8 Tamponade in Primary Rhegmatogenous Retinal Detachment Repair"
3. AAO Young Ophthalmologist Green Grant award project, 2026
4. Anticipated randomized prospective clinical trial for surgical outcomes in primary rhegmatogenous retinal detachment between the use of SF6 versus air tamponade

4. Macular Disease Comparative Effectiveness Research

I co-led multicenter comparative effectiveness research with Dr. Sundeep Dev, evaluating real-world durability and outcomes of aflibercept 8 mg and faricimab in treatment-naïve versus switched patients with neovascular AMD, diabetic macular edema, and retinal vein occlusion. This work addresses gaps in optimal sequencing of anti-VEGF agents and has direct implications for treatment algorithms and insurance coverage policies. By analyzing treatment intervals, anatomic outcomes, and visual acuity changes across multiple practice settings, we have generated evidence to guide the use of next-generation agents, with ongoing extensions in vitrectomized eyes. Additional work will evaluate whether off-label AREDS2 supplementation in non-proliferative idiopathic macular telangiectasia type 2 is associated with slower ellipsoid zone loss and preserved visual function as a low-risk adjunct to recently approved CNTF-based implants.

Role: Co-investigator, multicenter study coordination, protocol design, patient selection criteria development, data analysis strategy, manuscript preparation, presentation at national meetings.

Significance: Provides real-world evidence for comparative effectiveness of the latest anti-VEGF agents, directly informing treatment guidelines and insurance policies.

Research Products:

1. Sather RN III, Chiang T, Moon JY, Dev S, Belin PJ. Real-World Durability of Aflibercept 8 mg and Faricimab in Initiators Versus Switchers: A Multicenter Retrospective Analysis. *Retina*. 2026. doi:10.1097/IAE.0000000000004813
2. Poster and oral presentations on "Real-World Treatment Durability of the Latest-Generation Anti-VEGF Agents in Initiators Versus Switchers for Neovascular Age-Related Macular Degeneration, Diabetic Macular Edema, and Retinal Vein Occlusion: A Multicenter Analysis" at the American Society of Retinal Specialists and Retina Society.

5. Ocular trauma outcomes and complex posterior segment injury management

I have conducted clinical research focused on visual outcomes and surgical decision-making in complex ocular trauma, particularly open globe injuries and posterior segment metallic intraocular foreign bodies. My work has examined the full rehabilitative course after open globe repair, including secondary vitreoretinal surgery, lens management, and long-term visual function,

identifying factors associated with improved outcomes. I have also contributed to a detailed case series on intraocular foreign body removal techniques, describing lens management strategies and posterior segment approaches that optimize anatomic success and minimize complications. These projects help inform evidence-based counseling and surgical planning for patients with severe ocular trauma.

Role: Study design, chart review and data extraction, definition of outcome measures, statistical planning, manuscript preparation, and oral/poster presentations at national and regional meetings.

Significance: Provides real-world data on visual outcomes, prognostic factors, and surgical strategies in open globe and intraocular foreign body trauma.

Research Products (examples to list):

1. Sather RN 3rd, Molleti S, Moon JY, Chaudhry S, Montezuma SR, Simmons M. Visual outcomes of the surgical rehabilitative process following open globe injury repair. *Front Ophthalmol (Lausanne)*. 2024;4:1357373.
2. Moon JY, Looysen T, Monsalve P, Simmons M, Khundkar T, Naravane A, Sather RN III, et al. Surgical techniques for optimal lens management of posterior segment metallic intraocular foreign body removal: a case series. *Retina*. 2024.
3. ASRS Film Festival "Best in Show" Award (2024)
   Co-author of the award-winning film *"Eye of the Beholder: The Legend of the Loose Lens."*
4. Poster and oral presentations on open globe trauma and intraocular foreign body management at the Vit-Buckle Society, American Society of Retinal Specialists, and institutional symposia (e.g., "Visual outcomes of the surgical rehabilitative process following open globe injury repair").

D. Research Support

Ongoing Research Support

AAO Young Ophthalmologist Green Grant
Project Title: Modeling Gas Tamponade Dynamics to Guide Sustainable Vitreoretinal Surgery
Role: Co-Principal Investigator

VitreoRetinal Surgery Foundation Research Grant
Project Title: Modeling Gas Tamponade Dynamics to Guide Sustainable Vitreoretinal Surgery
Role: Co-Principal Investigator