

BIOGRAPHICAL SKETCH

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NAME: Mohammad Bakr

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
Cairo University, Egypt	MBBCH	09/2007	11/2013	Medical School
Cairo University, Egypt		03/2014	02/2015	Internship
Residency and Masters, Cairo University	MSc	09/2015	09/2018	Ophthalmology
Clinical Fellow, UTSW medical center, Dallas, TX, USA		07/2021	06/2023	Cornea, Cataract, External disease and Keratorefractive Surgery
Clinical Fellow, UTSW medical center, Dallas, TX, USA		07/2023	06/2024	Pediatric Ophthalmology and Strabismus

A. Personal Statement

Through my unconventional route in ophthalmology, I have worked most of the time in an academic setting, both as a trainee and as a mentor.

Starting in Egypt, I engaged early on in a research project as part of my master's thesis, evaluating the incidence of PVD in patients undergoing LASIK surgery. I actively worked on IRB application, patient recruitment, follow up, data collection and analysis.

After residency, I joined the department of ophthalmology as an assistant lecturer. I was able to work with both medical students and residents. I participated in clinical demonstrations, gave lectures and participated in exam setup and organization for medical students. I also staffed clinics and surgeries with residents in variety of settings, both outpatient and inpatient, including ER in the largest hospital in the country.

Coming to the US, fellowship was more of a hybrid role. I was again in training, learning in greater detail in the fields of cornea, anterior segment and pediatric ophthalmology. At the same time, I had the opportunity to work with residents in managing patients in the relevant subspecialties.

It was also an opportunity to participate in different academic projects: I worked on the updated chapter on the genetics of corneal disorders with Dr Mootha as a cornea fellow, I worked with Dr Wang on reviewing the outcomes and reoperation rates after pediatric cataract surgery, I worked with Dr Cao reporting the outcomes of JAK inhibitors in recalcitrant JIA uveitis. All these projects provided me with great opportunities to acquire new skills and the ability to present our work at different national conferences.

Starting again as a resident, I sought to engage early on in more research projects. I worked with Dr Wang French on several projects evaluating different aspects of the use of light adjustable lenses – a novel technology with many new aspects of research – that we also presented at the AAO and the ASCRS.

In addition, working with colleagues from different institutions, we published 3 articles covering different topics of ophthalmology that are relevant to my subspecialties of choice: dry eye disease, cataract surgery and pediatric neurotrophic keratopathy.

I seek to engage further in academic ophthalmology upon graduation, continuing to work with residents and fellows and participate further in clinical research, hopefully in larger long-term projects that can add further to the field of ophthalmology.

B. Positions, Scientific Appointments and Honors

2007-2015	Head of Cairo University School of Medicine Class of November 2013.
2016-2018	Chief Resident of Ophthalmology Resident class of 2015-2018, Cairo University, Egypt.
2019	Fellow of International Council of Ophthalmology.
2020	Member of the Royal College of Surgeons of Edinburgh.
2020-2024	Assistant Lecturer of Ophthalmology, Department of Ophthalmology, Cairo University, Egypt.

C. Contributions to Science

1. Ophthalmology residency and Master's in Cairo University: My Master's thesis included a clinical study evaluating the incidence of posterior vitreous detachment (PVD) in patients undergoing LASIK vision correction using femtosecond laser. We wanted to evaluate if the incidence would differ with the lower suction imparted by modern femtosecond laser machines compared to mechanical microkeratomes used in the past to see if this reduced the incidence of PVD induced by the procedure. This work was then presented as a poster at the European Society of Cataract and Refractive Surgery meeting in 2019 in Paris.

2. As Assistant Lecturer in the Ophthalmology Department in Cairo University, I was actively involved in the Retinopathy of Prematurity Service. We reported the outcomes of combined Injection and Laser treatment for advanced case of ROP that was submitted to the American Association for Pediatric Ophthalmology and Strabismus (AAPOS) annual meeting and later published in Journal of American Association for Pediatric Ophthalmology and Strabismus (JAAPOS) that highlights the possible utility the combined use of multiple interventions in management of complex advanced cases of ROP that can potentially help avoid surgery. I also worked on a review article that highlighted the recent updates in management of dry eye disease, a rapidly evolving area of interest in ophthalmology with advancing understanding of disease impact, pathogenesis and treatment strategies.

- Management of stage 3-and-a-half retinopathy of prematurity. Youssef A. Helmy, Mohamad A. Bakr, Heldz Khalil, Ahmed I. Hegazy, Asmaa Shuaib, Sara M. ElWaraky, Ahmed M. ElShewy, Dina H. Hassanein, Journal of American Association for Pediatric Ophthalmology and Strabismus. 2021;25(4):e60-e61.
- New approaches for diagnosis of dry eye disease. Abdelrahman M. Elhusseiny, Ali A. Khalil, Reem H. El Sheikh, Mohammad A. Bakr, Mohamed Gaber Eissa, and Yasmine M. El Sayed. Int J Ophthalmol. 2019; 12(10): 1618–1628.

3. As Cornea and anterior segment fellow at UTSW, I worked with my mentor Dr Vinod Mootha on writing the updated chapter on genetics of corneal disorder in Emery and Rimoin's Principles and Practice of Medical Genetics and Genomics providing an updated review of underlying genetic process in many inherited corneal disorders, especially with the more recent improved understanding of genetic bases of corneal endothelial dystrophies. I also worked on a project evaluating the complication rate in cataract surgery combined with vitrectomy compared to standalone phacoemulsification that was published in the Journal of Cataract and Refractive Surgery (JCRS) which can help provide proper patient counseling in this setting.

- Chapter 11 - Genetic disorders of the cornea. Mohammad A. Bakr, Elmer Tu, Joel Sugar, V. Vinod Mootha. Editor(s): Reed E. Pyeritz, Bruce R. Korf, Wayne W. Grody. *Emery and Rimoin's Principles and Practice of Medical Genetics and Genomics (Seventh Edition)*. Academic Press. 2025, Pages 345-384, ISBN 9780128152348.
- Comparison of complications and visual outcomes of combined phacovitrectomy vs stand-alone phacoemulsification: multicenter database study. Bakr M, Elhusseiny AM, Toma J, Sallam AB. J Cataract Refract Surg. 2024 Sep 1;50(9):956-962.

4. As Pediatric Ophthalmology fellow at UTSW, I worked with my mentor Dr Serena Wang to evaluate the incidence of reoperation after pediatric cataract surgery, looking at patients from the past 10 years which we

presented at the AAPOS meeting. I also worked with Dr Cao to report the outcomes of use of JAK inhibitors in JIA uveitis, which we presented at the AUS meeting. I also worked on a systematic review evaluating the use of cenegermin in pediatric neurotrophic keratopathy that was published in the Cornea Journal that showed the potential of successful use of the medication in different types of pediatric neurotrophic keratopathy.

- Outcomes of Pediatric Cataract Surgery. Bakr M, Wang S. Poster presentation at the 2024 AAPOS Annual meeting.
- Successful use of Tofacitinib for Recalcitrant Non-Infectious Uveitis Associated with Juvenile Idiopathic Arthritis. Bakr M, Cao J. Poster presentation at the 2024 American Uveitis Society Annual Meeting.
- Pediatric Neurotrophic Keratopathy: A Review of the Literature and Systematic Review. Bakr M, Eleiwa TK, Saeed HN, Elhousseiny AM. Cornea. 2025 Dec 1;44(12):1554-1563.

5. As Ophthalmology resident at UTSW, I continued several research projects evaluating several aspects of the use of the more recently introduced light adjustable lens that we presented at the AAO and ASCRS annual meetings that help in surgical planning, counseling and optimizing postoperative care during the process of refractive adjustments.

- Factors Associated with a Higher Number of Adjustments in Patients Receiving Light-Adjustable Lenses. Bakr M, Bartley J, Waldrop W, Wang M. Oral presentation at the 2026 ASCRS Annual Meeting
- Outcomes of Fourth Adjustment of Light Adjustable Lenses. Bakr M, Bartley J, Waldrop W, Wang M. Poster at the 2026 ASCRS Annual Meeting
- Comparison of the Accuracy of Refractive Adjustments Between the LAL Plus and the LAL in Patients with and without Prior Keratorefractive Surgery. Bakr M, Bartley J, Waldrop W, Wang M. Oral presentation at the 2025 AAO Annual Meeting
- Correlation of Corrective Refraction Magnitude with Higher-Order Wavefront Aberrations after Light-Adjustable Lens Adjustment. Bakr M, Abubaker R, Angirekula A, Bartley J, Wang M, Waldrop W. Poster presentation at the 2025 ASCRS Annual Meeting.

D. Scholastic Performance

YEAR	COURSE TITLE	GRADE
2007/8	Human Anatomy I	Excellent
2007/8	Medical Biochemistry and Molecular Biology I	Excellent
2007/8	Human Physiology I	Excellent
2007/8	Histology I	Excellent
2008/9	Human Anatomy II	Excellent
2008/9	Medical Biochemistry and Molecular Biology II	Excellent
2008/9	Human Physiology II	Excellent
2008/9	Histology II	Excellent
2009/10	Pharmacology	Excellent
2009/10	Pathology	Excellent
2009/10	Microbiology and Immunology	Excellent
2009/10	Parasitology	Excellent
2010/11	Ophthalmology	Excellent
2010/11	ENT	Excellent
2010/11	Forensic Medicine and Toxicology	Excellent
2010/11	Community Medicine and Public Health	Excellent
2011/12	Obstetrics and Gynecology	Excellent
2011/12	Pediatrics	Excellent
2012/13	Internal Medicine	Excellent
2012/13	Surgery	Excellent
2007-13	MBBCH cumulative grade	Excellent with Honors 6034/6350