Stanford



Mary Elizabeth Hartnett, MD

Michael F. Marmor, M.D. Professor of Retinal Science and Disease and Professor of Ophthalmology

CLINICAL OFFICE (PRIMARY)

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Bio

BIO

Mary Elizabeth Hartnett, MD, is the Michael F. Marmor, M.D. Professor in Retinal Science and Diseases and is a Professor of Ophthalmology at Stanford University. Dr. Hartnett is the director of Pediatric Retina at Stanford University and principal investigator of a retinal angiogenesis laboratory, in which she studies causes and treatments for diseases including retinopathy of prematurity and age-related macular degeneration. She created the first-ever academic textbook on the subject, Pediatric Retina, in its third edition, which has proven to be an invaluable resource for residents and ophthalmologists internationally.

Dr. Hartnett's NIH-funded laboratory of vascular biology and angiogenesis has studied mechanisms causing pathology in age-related macular degeneration (AMD) and retinopathy of prematurity (ROP). Her work in AMD has been to understand the mechanisms involved in activation and invasion of choroidal endothelial cells anterior to the RPE in order to maintain vasculature that is physiologic and not damaging beneath the RPE. Her lab has elucidated environmental stressors that lead to scarring in the macula for which no vision improvement is currently possible. The goal is to find methods to prevent the scarring.

Her lab's work in ROP provided the proof of concept to regulate an angiogenic signaling pathway by inhibiting VEGF to facilitate intraretinal neovascularization as well as to inhibit abnormal extraretinal neovascularization and reduce retinal destruction used in previous treatments. Her work has been translated through clinical trials to lead to new treatments for severe ROP and has represented a paradigm shift in the understanding and treatment of severe ROP.

Dr. Hartnett has received numerous awards, including the Weisenfeld Award, the highest award for clinician-scientists given by the Association for Research in Vision and Ophthalmology (ARVO), in 2018, and is an ARVO Gold Fellow. She received the 2019 Paul Kayser/Retina Research Foundation Global Award, the Macula Society's 2016 Paul Henkind Award and its 2019 Arnall Patz Medal, the Paul Kayser/RRF Global Award from the PanAmerica Society, and the 2021 Suzanne Veronneau-Troutman Award, the most prestigious award from Women in Ophthalmology. In 2022, she was one of six at the University of Utah to receive a distinguished research award, for Pediatrics and Ophthalmology. In recognition of her lifetime contributions, she was inducted into the Retina Hall of Fame and was elected to the Association of American Physicians in 2025.

Dr. Hartnett's prolific publication record includes 295 articles in peer-reviewed journals and over 40 book chapters. She has delivered numerous national and international invited lectures. Her long list of professional committee work includes serving as chair of the Publications Committee of ARVO, as a mentor for the ARVO Leadership Development Program, and in leadership positions internationally as the Treasurer for The Macula Society and the Chair of the Jack McGovern Coats Disease Foundation as well as the Credentialing Committee for The Retina Society. She reviews manuscripts for more than 20 eye and science journals and serves on the editorial boards of PlosOne, Molecular Vision, and the American Journal of Ophthalmology. Dr. Hartnett is a Fellow of the American College of Surgeons (FACS) and a Silver and Gold Fellow of the Association for Research in Vision and Ophthalmology (FARVO).

CLINICAL FOCUS

- Retina Specialist

ACADEMIC APPOINTMENTS

- Professor-Univ Med Line, Ophthalmology

PROFESSIONAL EDUCATION

- Medical Education: Albany Medical College (1983) NY
- Fellowship: Massachusetts Eye And Ear Infirmary Vitreoretinal Fellowship (1990) MA
- Board Certification: Ophthalmology, American Board of Ophthalmology (1989)
- Fellowship: Massachusetts Eye And Ear Infirmary Vitreoretinal Fellowship (1989) MA
- Residency: Case Western Reserve Ophthalmology Residency Program (1987) OH
- Internship: University Hospitals of Cleveland (1984) OH

Research & Scholarship

CLINICAL TRIALS

- Feasibility Study of a Remote Behavioral Dietary Intervention in Patients With Early to Intermediate AMD: Glucose Lowering for Vision Extension, Not Specified

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Bright Asare Bediako, James Regun Karmoker, Neal Sandeep Shah

Publications

PUBLICATIONS

- **Real-World Versus Centers for Medicare and Medicaid Services Estimates of Pediatric Retinal Detachment Repair Times.** *Journal of vitreoretinal diseases*
  Leung, E. H., Hua, H. U., Valikodath, N., Yonekawa, Y., Villegas, V. M., Berrocal, A., Hartnett, M. E., Rao, P., Chang, E. Y., Sisk, R. A., Wood, E. H., Harper, C. A., Chaaya, et al
  2026: 24741264261490790

- **AI-Assisted Quantification of Retinal Vascular Parameters in Oxygen-Induced Retinopathy Models: A Net Approach**
  Shah, N., Ramshekar, A., Asare-Bediako, B., Tankersley, M., Randolph, J. W. J., Whitney, J., Hartnett, M.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2026

- **Systemic Immune Signaling Effects of Genipin: Insights From High-Throughput Whole-Blood CyTOF**
  Huang, H., Anronikov, A., Randolph, J. W. J., Shah, N., Ramshekar, A., Asare-Bediako, B., Karmoker, J., Stevenson, D. K., Gaudilliere, B., Hartnett, M.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2026
- **Retinal Neurovascular Development Requires Endothelial VEGFR2: Insights from the Mouse Oxygen induced Retinopathy Model**
  Hartnett, M., Ramshekar, A., Asare-Bediako, B., Karmoker, J., Shah, N., Tankersley, M., Randolph, J.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2026
- **Targeting Endothelial VEGFR2-mediated signaling preserves mature retinal ganglion cells in oxygen induced retinopathy**
  Ramshekar, A., Asare-Bediako, B., Karmoker, J., Shah, N., Tankersley, M., Randolph, J., Hartnett, M.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2026
- **Improving Mouse Retinal Flat Mount Preparation: Triamcinolone as a Visual Aid for Vitreous Removal**
  Beri, S., Tankersley, M., Shah, N., Ramshekar, A., Asare-Bediako, B., Hartnett, M.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2026
- **Laser-injury Alone is Insufficient to Sustain Fibrosis in Murine Laser-induced Choroidal Neovascularization**
  Karmoker, J., Huang, H., Ramshekar, A., Asare-Bediako, B., Shah, N., Randolph, J. W. J., Beri, S., Tankersley, M., Hartnett, M.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2026
- **Pathway Enrichment Analysis of 7-Ketocholesterol-Induced Endothelial-Mesenchymal Transiti in Choroidal Endothelial Cells: Insights into Age-Related Macular Degeneration Pathology**
  Randolph, J. W. J., Ramshekar, A., Shah, N., Jacob, J., Tankersley, M., Beri, S., Karmoker, J., Hartnett, M.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2026
- **Report From the International Conference on Incontinentia Pigmenti: Translating Discovery to Therapy.** *American journal of medical genetics. Part A*
  Wilson, R., Somani, N., Arias, N., Berrocal, A., Chen, C., Chen, X., Cole, E., Ehrich, P., Faupel, T. C., Ferrone, P., Fete, T., Fete, M., Fusco, et al
  2026
- **Effect of aging and oxidative stress on macular neovascularization and fibrosis in age-related macular degeneration**
  Jacob, J., Yang, S., Tankersley, M., Suresh, A., Satheesh, S., Ramshekar, A., Beri, S., Hartnett, M.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2025
- **The Moran AMD Genetic Testing Assessment (MAGENTA) Trial**
  Addo, E., Lucci, L., Pasaye-Head, M., Nilsen, J., Jridi, A., Brintz, B., Hartnett, M., Bernstein, P. S.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2025
- **Novel Luminal Domain ATF6 Mutations Identified in Achromatopsia Patients**
  Temme, W., Lee, E., Tsang, S., Hartnett, M., Peng, E., Lin, J.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2025
- **Editorial: X-linked retinoschisis: mechanisms and therapies** *FRONTIERS IN MEDICINE*
  Dumitrescu, A. V., Hartnett, M., Drack, A. V.
  2024; 11: 1523215
- **Retinal racemose hemangioma presenting with a chorioretinal anastomosis.** *American journal of ophthalmology case reports*
  Soetikno, B. T., Ghoraba, H., Brant, A., DeBoer, C., Guo, L., Shue, A., Hartnett, M. E.
  2024; 36: 102188
- **Clinical Characteristics and Treatment Outcomes in Unilateral Coats disease - a Global Collaborative Study.** *Ophthalmology. Retina*
  Tsai, A. S., Wang, C. T., Lee, T. C., Nagiel, A., Matsunaga, K., Harper, C. A., Wood, E. H., Kim, S. J., Hwang, S., Shapiro, M. J., Blair, M. P., Toth, C. A., Valikodath, et al
  2024
- **Oral HIF-2alpha Inhibitor Belzutifan in Ocular von Hippel-Lindau Disease: Subgroup Analysis of the Single-Arm Phase 2 LITESPARK-004 Study.** *Ophthalmology*
  Wiley, H. E., Srinivasan, R., Maranchie, J. K., Chhablani, J., Bondergaard Iversen, A. B., Kruse, A., Jonasch, E., Gombos, D. S., Else, T., Demirci, H., Maughan, B. L., Hartnett, M. E., Coleman, et al

2024

- **The Moran AMD Genetic Testing Assessment (MAGENTA) Study - Baseline Report**
  Addo, E., Lucci, L., Sauer, L., Hartnett, M., Bernstein, P. S.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2024

- **Short-term selective activation of phospho-Y1175 (p-Y1175) on VEGFR2 suppresses retinal endothelial cell migration**
  Asare-Bediako, B., Ramshekar, A., Nguyen, J., Suresh, A., Hartnett, M.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2024

- **Elucidating the role of MEMO1 in EPO-triggered signaling in retinal microvascular endothelial cells**
  Ramshekar, A., Asare-Bediako, B., Jasmine Nguyen, Suresh, A., Hartnett, M.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2024

- **7-Ketocholesterol-induce IQGAP1 mediated endothelial-mesenchymal transition of choroidal endothelial cells**
  Yang, S., Zhao, C., Jacob, J., Suresh, A., Nguyen, J., Ramshekar, A., Hartnett, M., Yang, S., Zhao, C., Jacob, J., Suresh, A., Nguyen, J., Ramshekar, et al
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2024

- **Genome-wide association identifies novel ROP risk loci in a multiethnic cohort.** *Communications biology*
  Li, X., Owen, L. A., Taylor, K. D., Ostmo, S., Chen, Y. I., Coyner, A. S., Sonmez, K., Hartnett, M. E., Guo, X., Ipp, E., Roll, K., Genter, P., Chan, et al
  2024; 7 (1): 107

- **Elucidating the role of MEMO1 in VEGFR2-triggered signaling in retinal microvascular endothelial cells**
  Ramshekar, A., Wallace-Carrete, C., Zaugg, C. J., Nguyen, J., Hartnett, M.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2023

- **Federated Learning for Multicenter Collaboration in Ophthalmology: Improving Classification Performance in Retinopathy of Prematurity**
  Lu, C., Hanif, A., Singh, P., Chang, K., Coyner, A. S., Brown, J. M., Ostmo, S., Chan, R., Rubin, D., Chiang, M. F., Campbell, J., Kalpathy-Cramer, J., Imaging Informatics Retinopathy Pr
  ELSEVIER SCIENCE INC.2022: 964-965

- **Federated learning for multi-center collaboration in ophthalmology: implications for clinical diagnosis and disease epidemiology.** *Ophthalmology. Retina*
  Hanif, A., Lu, C., Chang, K., Singh, P., Coyner, A. S., Brown, J. M., Ostmo, S., Chan, R. P., Rubin, D., Chiang, M. F., Kalpathy-Cramer, J., Campbell, J. P., Imaging and Informatics in Retinopathy of Prematurity Consortium, et al
  2022

- **Federated learning for multi-center collaboration in ophthalmology: improving classification performance in retinopathy of prematurity.** *Ophthalmology. Retina*
  Lu, C., Hanif, A., Singh, P., Chang, K., Coyner, A. S., Brown, J. M., Ostmo, S., Chan, R. P., Rubin, D., Chiang, M. F., Campbell, J. P., Kalpathy-Cramer, J., Imaging and Informatics in Retinopathy of Prematurity Consortium
  2022

- **Artificial Intelligence for Retinopathy of Prematurity: Validation of a Vascular Severity Scale against International Expert Diagnosis.** *Ophthalmology*
  Campbell, J. P., Chiang, M. F., Chen, J. S., Moshfeghi, D. M., Nudleman, E., Ruambivoonsuk, P., Cherwek, H., Cheung, C. Y., Singh, P., Kalpathy-Cramer, J., Ostmo, S., Eydelman, M., Chan, et al
  2022

- **The Effect of Eye Drop Technique Education in Patients With Glaucoma.** *Health communication*
  Carpenter, D. M., Sayner, R., Blalock, S. J., Muir, K. W., Hartnett, M. E., Lawrence, S. D., Giangiacomo, A. L., Goldsmith, J. A., Tudor, G. E., Robin, A. L., Sleath, B. L.
  2016; 31 (8): 1036-42

- **Communication Predicts Medication Self-Efficacy in Glaucoma Patients.** *Optometry and vision science : official publication of the American Academy of Optometry*
  Carpenter, D. M., Blalock, S. J., Sayner, R., Muir, K. W., Robin, A. L., Hartnett, M. E., Giangiacomo, A. L., Tudor, G. E., Sleath, B. L.
  2016; 93 (7): 731-7

- **Exploring the influence of patient-provider communication on intraocular pressure in glaucoma patients** *PATIENT EDUCATION AND COUNSELING*

Carpenter, D. M., Tudor, G. E., Sayner, R., Muir, K. W., Robin, A. L., Blalock, S. J., Hartnett, M. E., Giangiacomo, A. L., Sleath, B. L.
2015; 98 (12): 1558-1567

- **Dexamethasone Intravitreal Implant in Patients with Macular Edema Related to Branch or Central Retinal Vein Occlusion** *OPHTHALMOLOGY*
  Haller, J. A., Bandello, F., Belfort, R., Blumenkranz, M. S., Gillies, M., Heier, J., Loewenstein, A., Yoon, Y. H., Jiao, J., Li, X., Whitcup, S. M.
  2011; 118 (12): 2453-2460

- **Randomized, Sham-Controlled Trial of Dexamethasone Intravitreal Implant in Patients with Macular Edema Due to Retinal Vein Occlusion** *OPHTHALMOLOGY*
  Haller, J. A., Bandello, F., Belfort, R., Blumenkranz, M. S., Gillies, M., Heier, J., Loewenstein, A., Yoon, Y., Jacques, M., Jiao, J., Li, X., Whitcup, S. M.
  2010; 117 (6): 1134-U164