Benton Chuter, MD, MS

EDUCATION

Dartmouth Hitchcock Medical Center 2026 – Present
Ophthalmology Resident

University of Tennessee Health Science Center, Hamilton Eye Institute 2025 – 2026
Pre-Residency Glaucoma Research Fellow

University of California, San Diego School of Medicine 2020 – 2025
Doctor of Medicine

Stanford University 2016 – 2018
Masters of Science in Mechanical Engineering
Concentration: Manufacturing and Product Realization

Stanford University 2012 – 2017
Bachelors of Science in Human Biology
Concentration: Design for International Health

HONORS & AWARDS

AUPO Research to Prevent Blindness Resident and Fellow Research Forum Award 2026
1 of 4 trainees selected from all residents, fellows, and research-year medical students in the US and Canada for excellence in ophthalmic and vision science research. Invited oral presentation with $500 honorarium and fully funded travel and conference costs

MedGap Program Award 2023
Awarded $30,000 directly to fund a year of research, alongside financial support for two biostatistics courses

American Academy of Ophthalmology (AAO) Best Poster Award 2023
First author for a scientific poster on use of a Deep Learning model for RNFL prediction, scored in the top 10% and acknowledged as "Best Of"

UCSD Summer Research Symposium "Best Use of Literature" Poster Award 2022
$100 award in recognition of excellence in the use of cited literature, one of 6 total award winners out of 80 presented posters

Society of Student-Run Free Clinics Outstanding Poster Presentation Award Finalist 2022
Coauthor of poster recognized for exceptional presentation at annual conference for the Society of Student-Run Free Clinics, a national organization dedicated to support student-run clinics

Summer Research Training Program Award, UC San Diego School of Medicine 2021
$5,000 award to fund summer research in Zangwill lab

Association for Research in Vision and Ophthalmology (ARVO) Travel Grant 2021
Travel grant used to present a deep learning quality model to assess fundus photograph image quality and improve glaucoma detection predictive value, as a poster at 2021 Annual Meeting

PAC-12 All-Academic First Team, Stanford University 2014
In recognition of academic and athletic excellence

RESEARCH EXPERIENCE

Research Consultant, Jablonski Lab, UTHSC, Memphis, TN June 2026 – Present

- Continuing collaborative research on deep learning applications for optic nerve histologic imaging and automated morphometric analysis
- Providing ongoing development and maintenance of AI pipelines and computational tools including MONICA and AxoClassNet
- Leading and mentoring a team of over 10 medical students in their research projects

Pre-Residency Research Fellow, Jablonski Lab, UTHSC, Memphis, TN June 2025 – June 2026

- Leading independent and collaborative research regarding deep learning for optic nerve histologic imaging and visual function tests to assess optic nerve health
- Establishing modern data structures, computing environment, and AI pipelines to enable state-of-the-art research into AI applications within ophthalmology
- Serving in clinic weekly, performing SLE, DFE and developing other clinical and surgical skills including work as a scrub tech
- Serving as scrub tech in OR biweekly, with responsibilities including preparing and maintaining the sterile field, draping and equipment setup, handling instruments intraoperatively, monitoring counts, and cleaning/sterilizing the OR and instruments postoperatively

Consultant, Science Corporation June 2025 – Dec 2025

- Supported business development efforts including identification of clinical partners, physician outreach, and relationship building within the ophthalmology community

Graduate Research Assistant, Zangwill Lab, UC San Diego, La Jolla, CA Sep 2020 – June 2025

- Led projects involving deep learning approaches in ophthalmologic imaging, including fundus photography and Optical Coherence Tomography (OCT), to assist in the prevention, detection, and management of eye diseases.

Independent Engineering Consultant, Flux PD LLC, La Jolla, CA Aug 2018 – Jan 2020

- Flux PD collaborated with healthcare providers and medical device companies to adapt and develop new technologies for clinical use.
- Led the design, manufacture and testing of a novel angioplasty balloon system.
- Developed virtual reality hardware for patient clinical use

Lead Design Engineer, Stanford Chariot Program, Stanford CA Jun 2017 – Dec 2019

- Designed, prototyped, and implemented a virtual reality (VR) headset system to enable use in a clinical setting.
- Developed an improved bedside entertainment theater (BERT) system to increase durability and performance while lowering costs.
- Created and established use of an affordable, reusable, physiologically-relevant pediatric phantom for effective venous access and nerve block training for resident physicians, ultimately improving placement success rates and reducing patient discomfort.

Research Assistant, Fischbein Lab, Falk Center, Stanford, CA Jan – April 2015

- Studied Marfan syndrome using mouse models; worked with cell lines and utilized cell biology and microbiology techniques (e.g. PCR, western blots, immunohistochemistry).

ACADEMIC PUBLICATIONS, PRESENTATIONS, AND PATENTS

Journal Articles and Manuscripts

**Corresponding or co-corresponding author*

Chuter B*, Kim MY, Stiemke AB, Dave N, Zhou Z, Herrin J, Miller M, White W, Hollingsworth TJ, Jablonski MM*. A Systematic Review and Independent Benchmarking of Automated Nerve Morphometry Methods. Submitted to *Ophthalmology*.

Wall G, Chuter B, Zhou Z, Owens C, Emmert N, Delsoz M, Ibrahim MM, Jablonski MM. Pregabalin and α2δ Subunit Modulation in Glaucoma: A Systematic Review of Intraocular Pressure Regulation, Retinal Neuroprotection, and Translational Mechanisms. Submitted to *Journal of Clinical Medicine*.

Chuter B*, White W, Hollingsworth TJ, Wang X, Guan L, Kim MY, Jablonski MM*. Visual Function Correlates More Strongly with Glial Coverage than Axon Count Across Multiple Mouse Strains. Preprint on bioRxiv. doi:10.64898/2026.03.23.713746

Chuter B*, Emmert N, Kim MY, Stiemke AB, Dave N, Herrin J, Zhou Z, Wall G, Lu L, Williams RW, Palmer AA, Chen H, Hollingsworth TJ, Jablonski MM*. Comparison of Deep Learning Tools for Optic Nerve Axon Quantification Finds Limited Generalizability Upon Independent Validation. *Bioengineering*. 2026;13(6):647. doi:10.3390/bioengineering13060647

Chuter B*, White W, Wang X, Guan L, Aljabi Q, Ibrahim MM, Lu L, Williams RW, Hollingsworth TJ, Jablonski MM*. MONICA: A Web Application for Automated Whole Optic Nerve Contour Extraction and Morphometric Analysis Validated Across Taxonomic Orders and Image Quality Levels. Preprint on bioRxiv. doi:10.64898/2026.02.27.707453

Chuter B, et al. A Novel Multimodal Implementation of a Foundation AI Model Outperforms Unimodalities Using Fundus and OCT Imaging for Glaucoma Detection. *Ophthalmology Science*. 2025;5:101012.

Jalili J, Huynh J, Walker E, Chuter B, Bowd C, Heinke A, Belghith A, Goldbaum MH, Fazio MA, Girkin CA, De Moraes CG, Liebmann JM, Baxter SL, Weinreb RN, Zangwill LM, Christopher M. Performance of general-purpose vision language models and ophthalmology foundation models in glaucoma detection and functional prediction. Translational Vision Science & Technology. 2025 Nov;14(11):31.

Huynh J, Chuter B, Gnanasambandam B, Bindra A, Moran E, Falah H, Trzcinski J, Helwe H, Solá-Del Valle D. Racial and ethnic disparities in utilization of microinvasive glaucoma surgery: insights from a nationwide electronic health record cohort. In preparation.

Chuter B, Zangwill LM. Commentary on Tan R, Teo KYC, Husain R, et al. "Evaluating the outcome of screening for glaucoma using colour fundus photography-based referral criteria in a teleophthalmology screening programme for diabetic retinopathy" published in British Journal of Ophthalmology, 2023. Commentary published in International Glaucoma Review, Volume 24-3, 2024; Editor's Selection.

Jalili J, Jiravarnsirikul A, Bowd C, Chuter B, Belghith A, Goldbaum MH, Baxter SL, Weinreb RN, Zangwill LM, Christopher M. Glaucoma Detection and Feature Identification via GPT-4V Fundus Image Analysis. Ophthalmology Science. 2025 Mar 1;5(2):100667.

Chuter B, Huynh J, Walker E, Hallaj S, Jalili J, Liebmann J, Fazio MA, Girkin CA, Weinreb RN, Christopher M, Zangwill LM. A new foundation model's accuracy in glaucoma detection using ocular coherence tomography images. Preprint available on medRxiv.

Lieu AC, Chuter B, Radgoudarzi N, Walker E, Huang JH, Scott NL, Afshari NA. Geographic patterns of ocular oncologist supply and patient demand for uveal melanoma treatment in the United States: a supply and demand analysis. Clinical Ophthalmology, 2024 Sep 3;18:2487-2502.

Chuter B, Lieu AC, Huynh J, Bu JJ, Zangwill LM. Assessing the relationship between demand and accessibility for pediatric ophthalmology services by state in the United States. In revision, Journal of Pediatric Ophthalmology and Strabismus.

Hallaj S, Halfpenny W, Chuter B, Weinreb RN, Baxter SL, Cui QN. Association between glucagon-like peptide-1 receptor agonists exposure and intraocular pressure change: GLP-1 receptor agonists and intraocular pressure change. American Journal of Ophthalmology. 2025 Jan 1;269:255-65.

Hallaj S, Chuter B, Lieu AC, Singh P, Kalpathy-Cramer J, Xu BY, Christopher M, Zangwill LM, Weinreb RN, Baxter SL. Federated learning in glaucoma: a comprehensive review and future perspectives. Ophthalmology Glaucoma. 2024 Aug 29.

Chuter B, Huynh J, Hallaj S, Walker E, Liebmann J, Fazio MA, Girkin CA, Weinreb RN, Christopher M, Zangwill LM. Evaluating a foundation AI model for glaucoma detection in a diverse study population using color fundus photographs. Ophthalmology Science, 2024 Sep 14:100623.

Chuter B, Huynh J, Bowd C, Walker E, Rezapour J, Brye N, Belghith A, Fazio MA, Girkin CA, De Moraes G, Liebmann JM, Weinreb RN, Zangwill LM, Christopher M. Deep Learning Identifies High-Quality Fundus Photographs and Increases Accuracy in Automated Primary Open Angle Glaucoma Detection. Translational Vision Science & Technology. 2024 Jan 2;13(1):23.

Bu JJ, Delavar A, Dayao JK, Lieu A, Chuter B, Chen K, Nishihara T, Meller L, Camp AS, Lee JE, Baxter SL. Evaluation and Optimization of Diabetic Retinopathy Screenings for Uninsured Latinx Patients in a Resource-Limited Student-Run Free Clinic. Journal of student-run clinics. 2024 Jan 1;10(1).

Fan R, Bowd C, Christopher M, Brye N, Proudfoot JA, Rezapour J, Belghith A, Goldbaum MH, Chuter B, Girkin CA, Fazio MA, Liebmann JM, Weinreb RN, Gordon MO, Kass MA, Kriegman D, Zangwill LM. Detecting glaucoma in the ocular hypertension study using deep learning. JAMA Ophthalmology. 2022 Apr 1;140(4):383-91.

Chuter B, Lieu A, Dayao JK, Bu JJ, Chen K, Nishihara T, Baxter SL. Impact of COVID-19 on the delivery of eye care to uninsured diabetic patients at a student-run free clinic: a comprehensive evaluation of eye clinic performance. Journal of student-run clinics. 2022 Dec 12;8(1).

Online Articles

Chuter B, Contributor. Eccrine Sweat Gland Carcinoma. American Academy of Ophthalmology, EyeWiki.

Chuter B, Contributor. Eyelid Burns. American Academy of Ophthalmology, EyeWiki.

Chuter B, Contributor. Ocular Penetrating and Perforating Injuries. American Academy of Ophthalmology, EyeWiki.

Chuter B, Contributor. Intraocular Foreign Bodies (IOFB). American Academy of Ophthalmology, EyeWiki.

Presentations

Chuter B, Kim MY, Millis B, Gensheimer WG. A Triage Classifier of Open Globe Injury from External Eye Photographs. Oral presentation at the Second Annual Dartmouth Ophthalmology Resident/Trainee Research Conference (DORC); June 3, 2026; Lebanon, NH.

Cape RH, Dave N, Hajj J, Konig D, Chuter B, Barrio-Zhang A, Li G, Hereford A, Singh S, Rishi E. Prenatal Diagnosis of Retro-orbital Cysts and Syndromic Associations. Accepted for presentation at ARVO Imaging in the Eye Conference; May 2, 2026; Denver, CO.

Dave N, Chuter B, Zhou Z, Cape H, Emmert N, Herrin J, Wall G, Jablonski M. Automated Image Analysis Tools for Nerve Morphometry. Submitted for poster presentation at ARVO Imaging in the Eye Conference; May 2, 2026; Denver, CO.

Wall G, Chuter B, Nabavi S, Yousefi S. A Large Multimodal Dataset of Choroidal Tumor Imaging for Clinical Analysis. Accepted for presentation at ARVO Imaging in the Eye Conference; May 2, 2026; Denver, CO.

Zhou Z, Chuter B, Nabavi S, Yousefi S. Fundus photo segmentation and AI-based quantification of experimental autoimmune uveitis. Accepted for presentation at ARVO Imaging in the Eye Conference; May 2, 2026; Denver, CO.

Chuter B, Emmert N, White W, Delsoz M, Lu L, Williams R, Hollingsworth TJ, Jablonski M. Automated quantification of axon counts, axon density, and parenchymal area in mouse optic nerve cross sections using an adapted AxonDeepSeg pipeline. Accepted for presentation at ARVO Imaging in the Eye Conference; May 2, 2026; Denver, CO.

Emmert N, Chuter B, Herrin J, Cape H, Dave N, Zhou Z, Wall G, White W, Lu L, Williams R, Hollingsworth TJ, Jablonski M. Comparative Evaluation of Machine Learning Tools for Automated Optic Nerve Axon Quantification. Accepted for presentation at ARVO Imaging in the Eye Conference; May 2, 2026; Denver, CO.

Herrin J, Chuter B, Hollingsworth TJ, White W, Wang X, Williams R, Lu L, Jablonski M. Non-axon optic nerve morphometrics predict visual function. Accepted for presentation at ARVO Imaging in the Eye Conference; May 2, 2026; Denver, CO.

Chuter B, Hollingsworth TJ, White W, William RW, Lu L, Jablonski M. Optic nerve morphometrics support BXD51 as a mouse model of intermediate glaucomatous optic neuropathy. Accepted for poster presentation at the ARVO 2026 Annual Meeting; May 3-7, 2026; Denver, CO.

Owens C, Chuter B, Mukit FA, Quiñones C, Fowler B. Accuracy, safety, and readability of retrieval-augmented large language models versus an oculoplastic surgeon for perioperative patient questions. Accepted for poster presentation at the ARVO 2026 Annual Meeting; May 3-7, 2026; Denver, CO.

Herrin J, Chuter B, Dave N, Zhou Z, Wall G, Jablonski M. Machine learning optic nerve axon histology models show high agreement with reference measures. Accepted for poster presentation at the ARVO 2026 Annual Meeting; May 3-7, 2026; Denver, CO.

White W, Chuter B, Hollingsworth TJ, William RW, Lu L, Jablonski M. CACNA2D1 modulation reduce intraocular pressure independently of CACNA2D2 through a trabecular meshwork dependent mechanism. Accepted for poster presentation at the ARVO 2026 Annual Meeting; May 3-7, 2026; Denver, CO.

Cape RH, Chuter B. Performance variation is greater within rather than across AI model architecture categories for automated AI-based systems predicting glaucoma progression. Accepted for poster presentation at the ARVO 2026 Annual Meeting; May 3-7, 2026; Denver, CO.

Tran E, Chuter B, Girkin CA, Fazio MA, Liebmann JM, Weinreb RN, Zangwill LM, Christopher M. Convolutional neural networks outperform transformer and foundation models in quality assessment of OCT optic nerve head images. Accepted for poster presentation at the ARVO 2026 Annual Meeting; May 3-7, 2026; Denver, CO.

Chuter B. Assessing Optic Nerve Morphometrics with Deep Learning. Invited seminar presentation, Hamilton Eye Institute Vision Research Seminar Series; February 12, 2026; Freeman Auditorium, UTHSC, Memphis, TN.

Chuter B, et al. Use of Deep Learning to Assess the Effect of Pregabalin on Optic Nerve Health. Invited oral presentation, AUPO/Research to Prevent Blindness Resident and Fellow Research Forum, AUPO Annual Meeting 2026; February 6, 2026; San Diego, California. 1 of 4 trainees selected nationwide among ophthalmology residents, clinical fellows, and research-year medical students for this highly selective forum.

Chuter B, et al. A Novel Multimodal Foundation AI Model Outperforms Unimodal Fundus Photograph but Not Unimodal OCT Image-Based Models in Glaucoma Detection. Oral paper presentation at the American Academy of Ophthalmology (AAO) Annual Meeting; 2025 Oct 18; Orlando, FL.

Chuter B. Use of Deep Learning to Assess the Effect of Pregabalin on Histological Indicators of Optic Nerve Health in Animal Models of Glaucoma. Presented at the Department of Ophthalmology Grand Rounds; Aug 29, 2025; Hamilton Eye Institute, Memphis, TN.

Chuter B, Graham S, Freeman K, Balasubramanian M, Pilkinton S, Jablonski M. Automated segmentation and classification of healthy and necrotic optic nerve axons using deep learning. Presented at the Shiley Summer Student Research Symposium; 2025 Jul 28; UCSD, La Jolla, CA.

Chuter B, Graham S, Freeman K, Balasubramanian M, Pilkinton S, Jablonski M. Use of a deep learning model to segment and classify histological features for automated quantitative assessment of optic nerve health. Presented at the UTHSC Summer Research Student and Resident Fellow Symposium; 2025 Jul 23; Freeman Auditorium, UTHSC, Memphis, TN.

Christopher M, Jalili J, Huynh J, Walker E, Chuter B, Bowd C, et al. Successes and challenges applying foundation large language models in glaucoma. Accepted for presentation at the 11th World Glaucoma Congress; June 25-28, 2025; Honolulu, HI.

Huynh J, Jalili J, Walker E, Chuter B, Bowd C, Heinke A, et al. Visual function prediction using fine-tuned vision language models. Accepted for poster presentation at the ARVO 2025 Annual Meeting; May 4-8, 2025; Salt Lake City, UT.

Jalili J, Gavhane Y, Walker E, Heinke A, Huynh J, Chuter B, et al. Generating clinical descriptions from OCT in glaucoma by fine-tuning a multi-modal large language model. Accepted for poster presentation at the ARVO 2025 Annual Meeting; May 4-8, 2025; Salt Lake City, UT.

Chuter B, Huynh J, Hallaj S, Walker E, Liebmann J, Fazio MA, Girkin CA, Weinreb RN, Christopher M, Zangwill L. Evaluating a Foundation AI Model for Glaucoma Detection in a Diverse Study Population Using Color Fundus Photographs. Accepted for poster presentation at the American Academy of Ophthalmology (AAO) Annual Meeting; 2024 Oct 18-21; Chicago, IL.

Huynh J, Chuter B, Moran E, Gnanasambandam B, Falah H, Trzcinski J, Helwe H, Solá-Del Valle D. Racial and Ethnic Disparities in Utilization of Minimally Invasive Glaucoma Surgery: Insights from a Nationwide Electronic

Health Record Cohort. Accepted for select podium poster presentation at the American Academy of Ophthalmology (AAO) Annual Meeting; 2024 Oct 18-21; Chicago, IL.

Hallaj S, Halfpenny W, Chuter B, Weinreb RN, Baxter SL, Cui QN. Association between Glucagon-Like Peptide 1 (GLP-1) Receptor Agonists Exposure and Intraocular Pressure Change. Accepted for poster presentation at the American Academy of Ophthalmology (AAO) Annual Meeting; 2024 Oct 18-21; Chicago, IL.

Chuter B, Huynh J, Walker E, Hallaj S, Jalili J, Liebmann J, Fazio MA, Girkin CA, Weinreb RN, Christopher M, Zangwill LM. A New Foundation Model's Accuracy in Glaucoma Detection Using Ocular Coherence Tomography and Fundus Images. Oral presentation at the Shiley Summer Student Research Symposium, Goldberg Auditorium, Moores Cancer Center, UCSD. August 12th, 2024.

Chuter B, Huynh J, Gonzalez R, Walker E, Bowd C, Jalili J, Christopher M, Weinreb RN, Zangwill L. Image gradeability is not image quality for fundus photographs used for glaucoma detection. Accepted for poster presentation at the Imaging and Perimetry Society (IPS) XXVth Visual Field & Imaging Symposium, July 30-August 2, Cardiff, United Kingdom.

Chuter B, Huynh J, Christopher M, Gonzalez R, Walker E, Baxter SL, et al. A Deep Learning Approach Accurately Estimates RNFL Thickness in OCT Scans Where Instrument-Native Segmentation Fails. Accepted for poster presentation at ARVO 2024 Annual Meeting, May 5-9, Seattle, WA.

Huynh J, Gonzalez RC, Walker E, Chuter B, Kamalipour A, Bowd C, et al. Deep Learning Prediction of Glaucoma Progression using Multimodal Transformers and Longitudinal Clinical Data. Accepted for poster presentation at ARVO 2024 Annual Meeting, May 5-9, Seattle, WA.

Chuter B, Kinder S, Huynh J, Gonzalez R, Iyengar S, Xu B, et al. The Case for Federated Learning: Challenges and Opportunities in Multi-Institutional Deep Learning Approaches for Ophthalmic Imaging. Accepted for oral presentation at ARVO Imaging 2024, May 4, Seattle, WA.

Huynh J, Chuter B, Walker E, Gonzalez R, Bowd C, Jalili J, Christopher M, Weinreb RN, Zangwill LM. Distinguishing image quality from gradeability: the relationship between quality and gradeability for color fundus photographs in glaucoma detection. Accepted for poster presentation at ARVO Imaging 2024, May 4, Seattle, WA.

Chuter B, Huynh J, Christopher M, Gonzalez RC, Walker E, Baxter SL, Belghith A, Bowd C, Goldbaum MH, Liebmann JM, Fazio MA, Girkin CA, Weinreb RN, Zangwill LM. A Segmentation-Free Deep Learning Approach Accurately Estimates RNFL Thickness in OCT Scans Where Built-in Segmentation Fails. Accepted for poster presentation at the American Academy of Ophthalmology Annual Meeting; 2023 Nov 3-6; San Francisco, CA. Best Poster Award winner.

Huynh J, Gonzalez R, Walker E, Chuter B, Bowd C, Belghith A, et al. Deep Learning Glaucoma Progression Prediction using Multimodal Clinical Data. Accepted for poster presentation at the American Academy of Ophthalmology Annual Meeting; 2023 Nov 3-6; San Francisco, CA.

Chuter B, Huynh J, Christopher M, Gonzalez R, Walker E, Baxter SL, Belghith A, Bowd C, Goldbaum MH, Liebmann JM, Fazio MA. Automated Measurement of RNFL Thickness from OCT Scans Using a Deep Learning Segmentation Free Approach. Accepted for poster presentation at ARVO Annual Meeting; April 23-27, 2023; New Orleans, Louisiana.

Huynh J, Gonzalez R, Walker E, Chuter B, Belghith A, Bowd C, Goldbaum MH, Baxter SL, Weinreb RN, Tafreshi A, Zangwill LM. Multimodal Transformer Model to Detect Glaucoma from OCT and Retinal Nerve Fiber Layer (RNFL) Thickness. Accepted for poster presentation at ARVO Annual Meeting; April 23-27, 2023; New Orleans.

Lieu A, Chuter B, Bu J, Baxter S. Promoting Vision Health in Resource-Limited Communities: An Evaluation of Diabetic Retinopathy Screening at the UCSD Student-Run Free Clinic Project. Accepted for poster presentation at the University of California Community Health Conference; 2023 May 26-27; Davis, CA.

Chuter B, Huynh J, Christopher M, Gonzalez R, Walker E, Baxter SL, et al. Automated Measurement of RNFL Thickness from OCT Scans Using a Deep Learning Segmentation Free Approach. Accepted for poster presentation at the UCI 9th Annual Bench to Bedside Symposium; 2023 May 13; Irvine, CA.

Chuter B, Huynh J, Christopher M, Bowd C, Fan R, Goldbaum M, et al. Comparing the Effects of Fundus Photograph Quality Degradations on the Performance of a Deep Learning Glaucoma Detection Model. Accepted for poster presentation at AAO 2022; Sept 30-Oct 3; Chicago.

Bu JJ, Chuter B, Lieu A, Dayao JKO, Delavar A, Nishihara T, Baxter S. Optimizing diabetic retinopathy screenings for uninsured Hispanic patients in a resource-limited ophthalmology clinic. Accepted for poster presentation at AAO 2022; Sept 30-Oct 3; Chicago.

Chuter B, Huynh J, Christopher M, Bowd C, Fan R, Goldbaum MH, Belghith A, Girkin CA, Fazio MA, DeMoraes CG, Liebmann JM, Weinreb RN, Zangwill LM. Use of a deep learning image quality model to evaluate impact of clinically relevant forms of degradation on the glaucoma gradability of fundus images. Accepted for poster presentation at ARVO Annual Meeting; May 1-4, 2022; Denver, Colorado.

Huynh J, Chuter B, Christopher M, Bowd C, Fan R, Goldbaum MH, Belghith A, Girkin CA, Fazio MA, DeMoraes CG, Liebmann JM, Weinreb RN, Zangwill LM. Use of Generative Adversarial Network to Improve Glaucoma Gradability of Fundus Images. Accepted for poster presentation at ARVO Annual Meeting; May 1-4, 2022; Denver, Colorado.

Chen K, Dayao JK, Lieu A, Chuter B, Bu JJ, Baxter SL. A performance analysis of diabetic retinopathy screening at a student-run free clinic before and during the COVID-19 pandemic period. Accepted for presentation at ARVO Annual Meeting; May 1-4, 2022; Denver, Colorado.

Bu J, Dayao JK, Lieu A, Chuter B, Chen K, Baxter S. Impact of the COVID-19 pandemic on the delivery of eye care to uninsured diabetic patients at a student-run free clinic. Accepted for poster presentation at the Society of Student Run Free Clinics Annual Conference; March 26th-27th, 2022; Mobile, Alabama.

Chuter B, Huynh J, Christopher M, et al. Development of deep learning models to assess the quality of retinal fundus photographs, raise the predictive value of glaucoma detection models, and improve apparent image quality via a generative adversarial network. Accepted for poster presentation at Summer Research Symposium, MET; February 24, 2022; UC San Diego. Winner of "Best Use of Literature."

Chuter B, Christopher M, Fan R, Belghith A, Bowd C, Brye N, Proudfoot JA, Rezapour J, Fazio MA, Goldbaum MH, Weinreb RN. A deep learning model to assess fundus photograph image quality and improve predictive value of deep learning models of glaucoma detection. Accepted for e-poster presentation at ARVO; May 1-7, 2021; Virtual Meeting. Travel Award winner.

Khoo C, Chuter B, Rodriguez S. Development of regional anesthesia curriculum and ultrasound-guided procedural simulation models for low- and middle-income countries. Abstract accepted for E-poster presentation at the 17th World Congress of Anaesthesiologists; September 1-5, 2021; Virtual Event.

Chuter B, Kaufman A, and Timothy Chuter. Design Modifications of Low-Compliance Angioplasty Balloons to Minimize Inflation-Induced Straightening. Oral Presentation at Session 9, VEITH Symposium. November 21st, 2019, New York, New York.

Chuter B, Kaufman A, Terajewicz A, Rodriguez S, Khoo C. Design of ballistic gel phantoms for ultrasound-guided procedural training using 3D printing. Abstract accepted for Oral Presentation at Moderated Session MP-02b. 44th Annual Regional American Society of Regional Anesthesia and Pain Medicine (ASRA) Meeting. April 11th, 2019, Las Vegas, Nevada.

Chuter B, Kaufman A, Terajewicz A, Rodriguez S, Khoo C. Affordable, reusable, silicone-shelled ballistic gel phantoms for ultrasound-guided procedural training designed using 3D printing. Abstract accepted for Oral Presentation at the California Society of Anesthesiologists Annual Meeting. March 9th, 2019, San Diego, CA.

Chuter B, Rodriguez S. An affordable, reusable, physiologically-accurate vascular access phantom with tissue-comparable ultrasonic properties. Virtual Presentation. Bay Area Global Health Innovation Challenge Semi-finals. March 15th, 2018.

Chuter B, Yuan J, Terajewicz A, Khoury M, Sferra V, Rodriguez S. Technical Solutions for Implementation of Virtual Reality Headsets in the Hospital Setting. Accepted for poster presentation at the Stanford Bio-X Interdisciplinary Initiatives Seed Grants Program Symposium, August 24th, 2017.

Chuter B, Yuan J, Terajewicz A, Khoury M, Sferra V, Rodriguez S. Technical Solutions for Implementation of Virtual Reality Headsets in the Hospital Setting. Accepted for poster presentation at the 3rd Annual Innovations in Psychiatry and Behavioral Health: Virtual Reality and Behavior Change, October 6-7, 2017.

Patents

Jablonski MM, Chuter B. “System for Optic Nerve Analysis.” U.S. Provisional Patent Application, filed May 1, 2026. UTRF Docket No. 26168. Assignee: University of Tennessee Research Foundation.

“Virtual Reality Kit,” U.S. Provisional Pat. Ser. No. 62/805,851, Feb 14, 2019.

PEER REVIEW

- American Journal of Ophthalmology — 2 manuscripts (2025)
- American Journal of Ophthalmology International — 1 manuscript (2026)
- Investigative Ophthalmology & Visual Science — 2 manuscripts (2026); reviews recognized as “Exceptionally Good Review”
- Ophthalmology Science — 1 manuscript, 1 revision (2026)
- Translational Vision Science & Technology — 2 manuscripts, 3 revisions (2025); 1 revision (2026); reviews recognized as “Exceptionally Good Review”
- Frontiers in Cellular Neuroscience — 1 manuscript (2026)
- Journal of the National Medical Association — 1 manuscript (2026)
- Biomedical Signal Processing and Control — 1 manuscript (2026)
- Neurocomputing — 1 manuscript (2026)

RESEARCH MENTORSHIP

Direct research mentor and project lead for medical-student and undergraduate researchers across the Jablonski Lab (UTHSC), Dartmouth, and UC San Diego — guiding study design, analysis, and abstract and manuscript preparation as senior or second author.

Ahmed Motiwala — Medical Student, UTHSC 2026 – Present
Deep-learning segmentation of optic-nerve axons and synaptic vesicles.

Reyan Naik — Medical Student, UTHSC 2026 – Present
Deep-learning segmentation of optic-nerve axons and synaptic vesicles.

Bailey Millis — Pre-Medical Research Coordinator, Dartmouth Health 2026 – Present
Open-globe-injury machine-learning triage; co-author on a 2026 DORC oral presentation.

Gideon Wall — Medical Student (M2), UTHSC 2025 – Present
PROSPERO-registered systematic reviews of α2δ-subunit modulation in glaucoma; first author on a submitted manuscript.

Caroline Owens — Medical Student (M3), UTHSC 2025 – Present
RAG large language models vs. an oculoplastic surgeon; first author on an ARVO 2026 poster.

Zirui (Alfred) Zhou — Medical Student (M2), UTHSC 2025 – Present
Deep-learning fundus segmentation in experimental autoimmune uveitis; first author on an ARVO Imaging 2026 abstract.

Richard Harrison Cape — Medical Student (M3), UTHSC 2025 – Present
Systematic review of AI architectures for glaucoma-progression prediction and a retro-orbital-cyst study; first author on two ARVO 2026 abstracts and a manuscript in submission.

Jay Herrin — Medical Student (M3), Whiddon College of Medicine 2025 – Present
Optic-nerve morphometrics and machine-learning axon histology; first author on two ARVO 2026 abstracts.

Qays Aljabi — Medical Student (M4), Whiddon College of Medicine 2025 – 2026
RAG LLM oculoplastics study; co-author on an ASOPRS 2026 abstract.

Noah Emmert — Undergraduate, Miami University (Ohio) 2025 – Present
Automated optic-nerve axon-quantification pipeline; first author on an ARVO Imaging 2026 abstract and co-author on a peer-reviewed publication (Bioengineering, 2026).

Matthew Miller — Undergraduate, UT Knoxville 2026 – Present
Optic-nerve histology data extraction and high-resolution re-imaging supporting foundation-model development.

Taylor Miller — Medical Student (MS4), Geisel School of Medicine 2026 – Present
AI triage classifier for open-globe injury; manuscript in preparation.

Jon Marshall — Medical Student (MS3), Geisel School of Medicine 2026 – Present
AI triage classifier for open-globe injury; manuscript in preparation.

Min Young Kim — UTHSC Glaucoma Pre-Residency Research Fellow 2025 – Present

Co-led the open-globe-injury AI triage study; co-author on a 2026 DORC oral presentation.

Rachael Tessem — UTHSC Ocular Oncology Pre-Residency Research Fellow 2026 – Present

RETFound-based OCT glaucoma classification and an AI systematic review; co-author on an AAO 2026 abstract.

Siddharth Limaye — Medical Student (MS3), Zangwill Lab, UC San Diego 2025 – Present

Deep-learning OCT glaucoma and image-quality classification using foundation models; AAO 2026 abstract and manuscripts in preparation.

Justin Huynh — Medical Student, UC San Diego 2021 – 2024

Deep-learning glaucoma detection and progression across OCT and fundus imaging; first author on multiple ARVO and AAO abstracts.

LEADERSHIP AND TEACHING EXPERIENCE

Senior Advisor, UC San Diego School of Medicine, La Jolla, CA Aug 2024 – June 2025

- Advised first, second, and third year UCSD medical students, hosting monthly social gatherings to foster a supportive community environment.

Facilitator, Clinical Mentoring Program, UCSD SOM, La Jolla, CA Aug 2024 – June 2025

- Led small group sessions for third year medical students at UCSD, providing guidance and support

Co-President, Ophthalmology Student Interest Group (SIG) Feb 2021 – Feb 2022

- Fostered community among students interested in ophthalmology through events including the Intro to Ophthalmology talks, Ophthalmology Research Panel, Table Fair, and Eye-Matched networking session.

Course Representative, UCSD Ultrasound Course Nov 2020 – May 2022

- Elected Ultrasound Course Representative by student body for 1st and 2nd year.
- Served as a liaison between the student body and faculty to enhance the ultrasound curriculum and student experience.

Mentor, Med Mindset, UC San Diego School of Medicine, La Jolla, CA Nov 2020 – Nov 2021

- Provided monthly mentorship, focusing on academic and professional development for underrepresented high school and undergraduate students interested in medicine.

Speaker, Teaching Assistant, Stanford Anesthesia Summer Institute June 2018

- Manufactured ultrasound training models for use.
- Helped teach a class of 20+ students through verbal instruction, demonstration, and technical feedback.

Teaching Assistant (TA), ME 101: Visual Thinking, Stanford, CA Sep 2016 – Jun 2018

- Planned, developed and implemented course material for Stanford's largest design thinking and prototyping course.
- Held workshops and personally coached 20+ students each quarter.
- Coordinated between full-time staff and led a team of four other teaching assistants as Head TA.
- Designed, rendered, and prototyped mechanical systems for class workshops and website.
- Held office hours and graded assignments weekly.

Teaching Assistant & Residential Advisor, Stanford Surgical Skills Fellowship Jun – Aug 2015

- Educated students in cardiothoracic surgical skills at the Cardiothoracic Surgical Skills and Education Center (CSSEC), covering dissections, stitches, ligations, and valve placements on porcine models, along with aseptic practices.
- Promoted a responsible and inclusive living environment with house meetings and activities.
- Managed logistics, including activity organization and budgeting, and offered personal and academic guidance to resolve conflicts.

Teaching Assistant, Stats 60: Introduction to Statistical Methods, Stanford, CA Jan – April 2015

- Held office hours weekly for a class of over 100 students.
- Graded homework, quizzes, and exams.

SERVICE

Lions Club, University of Tennessee Health Science Center Summer 2025 – Present

- Served as scrub tech in the annual Cataract-A-Thon at Hamilton Eye Institute, which provides free cataract surgeries for underserved patients in collaboration with the Mid-South Lions Club, HEI faculty, residents, and community partners
- Participated in planning meetings for Lions Club events, including the upcoming Annual Wellness Fair in which free eye health screenings are performed

Ophthalmology Free Clinic Manager, UC San Diego Free Clinic Fall 2020 – Jan 2022

- Coordinated ophthalmology care for patients without access to insurance at all UC San Diego Student-Run Free Clinic sites.
- Performed patient interviews, physical exams, acuity tests, tonometry, and slit lamp exams as well as digital fundus imaging capture.

Co-Lead, Free Clinic Transition Team Oct 2021 – Jan 2022

- Co-led a team of 7 to enhance first year medical student onboarding.
- Developed, implemented an automated Roth-Peranson derived matching algorithm for student-site placements to improve the assignment process.
- Helped organize and execute the Free Clinic Transition Fairs, and led comprehensive training programs for 3 ophthalmology specialty clinics, blending online and in-person formats for wider accessibility.

Tutor, San Diego Refugee Tutoring Sep 2019 – Jan 2020

- Tutored refugee students during 1.5 hour sessions twice weekly.

Concussion Support Group Leader, Stanford Synapse, Stanford, CA Mar – Sep 2016

- Planned and guided monthly meetings to support mild traumatic brain injury patients.

Somos Amigos Medical Missions Service, Dominican Republic Jan 2011

- Served as an interpreter; helped perform acuity tests and prescribe glasses.

ATHLETICS

Assistant Rowing Coach Nov 2019 – Jan 2020

- ZLAC Masters Program, San Diego, CA: Coached 10-15 rowers, 3 hours per week
- Cathedral Catholic High School, San Diego, CA: Coached 5-10 rowers, 3 hours per week

Division I Varsity Scholarship Athlete, Stanford Men's Crew Sep 2012 – June 2014

- Trained and competed 20+ hours a week, year-round
- Pac-12 All-Academic First Team, 2014

U19 Rowing, Los Gatos Rowing Club Sep 2010 – Aug 2012

- US Rowing Youth National Championships, Bronze, coxed four (Spring, 2012)
- U19 National Team, World Rowing Championships, straight four (Summer 2012)
- Weekly Volunteer (Aug 2011 - Aug 2012)
- Team Captain, Junior Board Representative (Aug 2011 - Aug 2012)

U17 Rowing Sep 2008 – July 2010

- 2010 USRowing Club National Championships U17, Double Sculls Champion
- 2009 USRowing Club National Championships U17, Quadruple Sculls Champion

ADDITIONAL SKILLS

- Design: SolidWorks, Adobe Illustrator
- Programming and Analysis: Java, C, C++, Python, GCode, Matlab, Excel, R
- Fabrication: CNC Machining, 3D printing, laser cutting, turning, milling, casting, welding, woodworking
- Biology Lab Techniques: PCR, Western Blot, histology, staining, and cell line establishment and propagation
- OR: Scrub tech. Skills include preparing and maintaining the sterile field, draping and equipment setup, handling instruments intraoperatively, monitoring counts, and cleaning/sterilizing the OR and instruments postoperatively.
- Language: Conversational and basic medical Spanish