

BIOGRAPHICAL SKETCH

NAME: Robert T Chang, MD

eRA COMMONS USER NAME (credential, e.g., agency login): rchang3

POSITION TITLE: Associate Professor of Ophthalmology, University Medical Line, Stanford University

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)	Completion Date MM/YYYY	FIELD OF STUDY
University of Missouri, Kansas City	BA	12/2002	Biology
University of Missouri, Kansas City School of Medicine	MD	12/2002	Medicine
Post Doctoral Research Fellow Bascom Palmer Eye Institute		07/2003	OCT
Evanston Northwestern Hospital (Northshore)		07/2004	Internship
Washington University St. Louis Department of Ophthalmology and Visual Sciences		07/2007	Residency
University of Miami, Bascom Palmer Eye Institute		07/2009	Fellowship

Positions and Employment

2020- Associate Professor of Ophthalmology, Stanford University School of Medicine
2009-2019 Assistant Professor of Ophthalmology, Stanford University School of Medicine and Bio-X
2015-2016 Stanford Biodesign Faculty Fellow Program
2017 Stanford StartX Professor-in-Residence Accelerator Program

Professional Memberships and University Administrative Service

2007- Fellow, American Academy of Ophthalmology (AAO)
2009- Member, American Glaucoma Society (AGS)
2009-2016 Department of Ophthalmology Faculty Call Schedule Organizer
2010- Co-Director AUPO-Certified Glaucoma Fellowship Program
2011- Stanford MedScholars Advisor
2013-2021 ACGME Ophthalmology Clinical Competency Milestone Project Review Committee
2015 Non Voting Faculty Member Committee on School of Medicine Curriculum and Academic Policy
2015-2017 Stanford MD Admissions Committee
2015-2018 Selected Member of Stanford Center for Population Health Sciences (PHS)
2015-2019 Appointed Faculty Fellow, Stanford Center for Innovation in Global Health (CIGH)
2016- Medical Director of Employer Based Optometry Service, Stanford University
2016-2021 Vice President, Asia Pacific Tele-Ophthalmology Society (APTOS)

Honors

2002 Alpha Omega Alpha
2007 Heed Ophthalmic Fellowship
2008 American Glaucoma Society Advocacy Day Fellow Representative
2013 Best Pivot, Stanford StartxMed Innovation Challenge
2015 First Place, "Medidash" Philips Healthsuite Hackathon
2016 American Academy of Ophthalmology Achievement Award
2016 Robert Howard Next Step Award "Lunair: a personal air pollution protection device"
2021 Stanford Leadership Development Program (LDP)
2022 Stanford Medicine Leadership Academy (SMLA)

B. Invited National and International Lectures

INVITED INTERNATIONAL LECTURES

- 1) "AI and Personalized Medicine" APGC, Singapore – 7/26/26
- 2) "AI, Digital Innovation and Virtual Health" Session Coordinator APAO, Hong Kong – 2/7/26
- 3) "AI Fairness in Ophthalmology: Identifying and Mitigating Bias in Model Development" APOIS, Beijing, China – 11/7/25
- 4) Innovation & Impact - "Creative Biodesign Thinking and Start-Up Pitch Challenge" TIES Workshop, Beijing China – 11/6/25
- 5) "AI Tools in Research" Annual Retreat NUS, Singapore – 7/5/25
- 6) "Generative AI for Ophthalmology Practice" Asia Pacific Tele-Ophthalmology Society (APTOS) Osaka, Japan – 6/27/25
- 7) "Empowering Patients Using AI Agents: Revolutionizing Ophthalmic Education" Asia Pacific Academy of Ophthalmology (APAO), New Delhi, India – 4/5/25
- 8) "Eye on the Future: What's Happening in AI," Moderator Latest Deep Learning and Foundation Models, Fireside Chat – Asia Pacific Tele-Ophthalmology Society (APTOS), Hong Kong – 12/15/24
- 9) "How Large Language Models Will Transform Clinical Care" European School for Advanced Studies in Ophthalmology (ESASO), Italy – 12/2/24 virtual meeting
- 10) "Multifocal IOL Implantation During Cataract Surgery in Glaucoma Patients" Ulsan Hospital and HERO symposium, Busan, Korea – 11/25/24
- 11) "AI Avatars: Eye-Opening Advances in Glaucoma Care" Korean Glaucoma Society (KGS) Keynote Seoul, Korea – 11/23/24
- 12) "Generation AI – A Brave New World" Alcademy Stanford Center Peking University (SCP KU) – 11/22/24 virtual meeting
- 13) "How Large Language Models Are Transforming Clinical Care" International Society for Eye Research (ISER), Buenos Aires, Argentina – 10/24/24
- 14) "Empowering a Future-Ready World: Exploring AI and Generative Models" SPICE E-China SCP KU, Beijing, China – 8/1/24
- 15) "How AI is Transforming Ophthalmology, Medicine, and the World" Poly U Invited Speaker, Hong Kong, 7/1/24
- 16) "The AI evolution from CNN to LLM to RLHF – What Does It All Mean?" Asia-Pacific Glaucoma Congress (APGC) – Manila, Philippines 5/25/24
- 17) "AI + Ophthalmology. GenAI + LLMs Have Changed Our World" Speed Class Back on the Farm 2.0 SCP KU - 5/18/24 virtual meeting
- 18) "How Foundational Model Finetuning May Change the Approach to AI for Glaucoma Imaging," "Challenges and Opportunities in Glaucoma AI," Chair Asia Pacific Academy of Ophthalmology APAO Bali Indonesia - 2/23/24
- 19) "When Will We See an Approved AI Algorithm for Glaucoma Imaging?" APOIS, APVRS Hong Kong - 12/9/23
- 20) "How Large Language Models will Transform Clinical Care" Asia Pacific Tele-Ophthalmology Society (APTOS) Pattaya, Thailand - 12/2/23
- 21) "From Biodesign to Designing Your Life" - Asian Liver Center, SCP KU - 8/12/23 virtual meeting
- 22) "From Med Device Research to Entrepreneurship: How the Stanford Biodesign Process Helps" ARTIC Engineering, NUS, Singapore - 6/20/23
- 23) "From Med Device Research to Entrepreneurship: How the Stanford Biodesign Process Helps," Poly U Invited Speaker, Hong Kong - 3/27/23

- 24) Keynote "Leveraging Technology for Community Eye Care," Launch of NUS Medicine Centre for Innovation and Precision Eye Health, Singapore – 3/25/23
- 25) "Telemedicine in the United States", "AI for Glaucoma Imaging: Opportunities," Scientific Program Co-Chair, Applying Big Data, Artificial Intelligence and Telemedicine in Ophthalmology, Asia Pacific Academy of Ophthalmology (APAO), Kuala Lumpur, Malaysia - 2/25/23
- 26) "Update on AI and Digital Innovation in United States" International Society for Eye Research (ISER) Brisbane, Australia - 2/22/23
- 27) "How to Teach Glaucoma Surgery" Peking University People's Hospital, 12/17/22 - virtual meeting
- 28) Israel Biodesign Course Instructor, Tel Aviv - 9/18/22-9/22/22
- 29) AI and Glaucoma Flying Eye Hospital, Glaucoma Lectures and Surgery, Orbis Foundation, Ethiopia 7/8/22 virtual
- 30) "Role of Organizations in Nurturing Talent" LV Prasad Eye Institute, 6/8/22 virtual meeting
- 31) RB Memorial Conference on Translational Research in Medicine (TRIM), 2022 IIT Bombay, India 4/19/22 virtual meeting
- 32) "Doc, Any Procedure for My Glaucoma That's Not a Trab?" Peking University People's Hospital, 11/20/21 - virtual meeting
- 33) Scientific Program Committee Co-Chair, Asia Pacific Tele-Ophthalmology Society (APTOS), Bangkok, Thailand, 8/28/21- virtual meeting
- 34) "Musings in Tele Glaucoma" APTOS-APOIS Webinar Series on Zoom 8/14/20 - virtual meeting
- 35) "Anterior Segment Trauma" World Ophthalmology Congress (WOC) Capetown, South Africa 6/26/20 - virtual meeting
- 36) APTOS Webinar Series #1: Telemedicine in the Time of COVID-19, on Zoom 6/12/20 - virtual meeting
- 37) Scientific Program Coordinator, Big Data, AI, and Telemedicine in Ophthalmology, Asia Pacific Academy of Ophthalmology (APAO), Xiamen, China 4/23/20 - cancelled
- 38) "Design Thinking Workshop" Lingyuned Teacher Education Workshop - 11/16/19
- 39) "All You Need to Know About AI" Chulalongkorn University Hospital Grand Rounds, Thailand - 11/12/19
- 40) Flying Eye Hospital, Glaucoma Lectures and Surgery, Orbis Foundation, Myanmar - 9/22-9/28/19
- 41) Scientific Program Committee Co-Chair, Asia Pacific Tele-Ophthalmology Society (APTOS), India - 9/21/19
- 42) "The Role of Artificial Intelligence (AI) in Medicine," Tilganga Institute of Ophthalmology, Visiting Professor, Nepal - 5/23/19
- 43) "Developing a Silicon Valley Mindset; from MD to Innovator" T3 Career Fair, China - 4/13/19
- 44) Session Co-Chair Ophthalmic Epidemiology, Telemedicine, Big Data & Artificial Intelligence Program, Speaker "Blockchain and Big Data," "Blockchain and Data Sharing for AI," Asia Pacific Academy of Ophthalmology (APAO), Thailand - 3/7/19
- 45) Lifeline Express Foundation, Glaucoma International Conference Lectures, China - 11/10/18
- 46) "Healthcare Entrepreneurship: How Innovation and Technology is Revolutionizing the World of Medicine" CIS Alumni, Hong Kong, 11/7/18
- 47) "Blockchain Project for Medical Imaging Data Storage" Pacific Rim Alliance for Population Health (PRAPH) and Zhejiang Stanford Co-Lab, China - 10/31/18
- 48) "Welcome to Doctor Innovation Training" Medical Workshop, Shanghai Jiaotong University, China - 10/20/18
- 49) "Welcome to Doctor Innovation Training" Medical Workshop, China - 10/19/18

- 50) "Big Data Blockchain and Ophthalmic Service" Chinese Ophthalmology Society (COS), China - 9/18/18
- 51) "How to Be a Better Scientist Inventor" Shanghai Jiao Tong University, China - 7/30/18
- 52) "Uveitic Glaucoma" Chaoyang International Uveitis Summit Forum, China - 7/28/18
- 53) "Welcome to Changing the Future of Medical Care" Peking Union Medical College, China - 7/28/18
- 54) "Introduction to Design Thinking" Lingyuned Educational Series, China - 7/22/18
- 55) "Innovation from Physician" Peking University Third Eye Hospital, China - 7/18/18
- 56) Scientific Program Committee Co-Chair, Asia Pacific Tele-Ophthalmology Society (APTOS), Singapore – 7/8/18
- 57) "Using Machine Learning in Glaucoma Research," World Ophthalmology Congress (WOC), Spain – 6/16/18
- 58) "Managing Patients with Myopia and Glaucoma -- How AI Can Help?" International Imaging and Perimetry Society, Japan - 5/10/18
- 59) "Combining Functional and Structural Test for Glaucoma Detection," "Suprachoroidal Devices Including Cypass," Asia-Pacific Glaucoma Congress (APGC), Korea – 4/15/18
- 60) "Artificial Intelligence in Ocular Imaging," "APTOS Session: AI Screening in USA," Asia Pacific Academy of Ophthalmology (APAO), Hong Kong – 2/8/18
- 61) "Retinal Imaging and AI" Panel, "Small Company Presentation" Panel, Ophthalmology Futures Asian Forum, Hong Kong – 2/7/18
- 62) Lifeline Express Foundation, Glaucoma International Conference Lectures, China – 12/1/17
- 63) "Embracing the AI Revolution in Medicine, Stanford Biodesign and Digital Health Innovation" Visiting Professor, Chinese University of Hong Kong (CUHK), Hong Kong - 11/27/17
- 64) "Digital Health Innovation and the AI Revolution" Visiting Professor, Centre for Eye Research Australia (CERA), Australia – 8/1/17
- 65) "Introduction to Biodesign" Australia China Research Stakeholders Meeting, Australia – 7/31/17
- 66) Scientific Program Committee Chair, Asia Pacific Tele-Ophthalmology Society (APTOS), "Promises and Pitfalls of AI and Digital Health," Hong Kong – 7/14/17
- 67) Hot Topics in Glaucoma: "In a Patient with Open Angle Glaucoma, a Concurrent Diagnosis of Moderate to High Myopia: Influences Both Diagnosis and Treatment," How to diagnose glaucoma among highly myopic eyes," session co-moderator "Image reading + grading" World Glaucoma Congress (WGC), Finland – 6/30/17
- 68) "Future Visions of Telemedicine and Artificial Intelligence" APAC Gerontech and Innovation Summit – Healthy Ageing, Hong Kong – 6/18/17
- 69) "Machine Learning and Medicine" APSEG Symposium: Personalized Medicine and Big Data, Asia Pacific Academy of Ophthalmology (APAO), Singapore – 3/2/17
- 70) "How AI Will Save Sight" Chinese University of Hong Kong Invited Lecture, Hong Kong – 1/6/17
- 71) "Telemedicine and Glaucoma: Future Directions," "Precision Medicine in Glaucoma and MIGS Surgery," Glaucoma Academy Pfizer Korea, Korea – 10/29/16
- 72) "Culture and Innovation: A Look at the Educational Systems" International Grand Rounds, 130th Anniversary of Beijing Tongren Hospital Memorial Lecture, China – 8/25/16
- 73) "Cyclophotocoagulation with Micropulse Technology" and "Istent and Collector Channel Patency" Co-Chair Free Paper 3 Session, Asia-Pacific Glaucoma Congress (APGC), Thailand – 7/15/16
- 74) "MedTech Innovation Within Current US Healthcare" Hong Kong Science Technology Park (HKSTP), Hong Kong – 6/29/16

- 75) "Clinical Service Innovation in Tele-Ophthalmology" Asia Pacific Tele-Ophthalmology Society (APTOS), China – 6/19/16
- 76) "Precision Medicine in Glaucoma" Visiting Professor Kaohsiung Veterans General Hospital, Taiwan – 3/28/16
- 77) "iStent and Collector Channel Patency" and "Digital Health Innovation Overview" Asia Pacific Academy of Ophthalmology (APAO), Taiwan – 3/25/16
- 78) "Future Role of ICT Advances in Eye Care Including Impact of M-Health: 3D Printing and Hackathons, Potential for Ophthalmology?" World Ophthalmology Congress (WOC) Session Chair, Mexico – 2/5/16
- 79) "Similarities and Differences Between Chinese and American Policies in Medical Innovation" Invited Panel Digital Healthcare Speaker, Caixin Annual Summit, China – 11/7/15
- 80) "Applications of Machine Learning in Ophthalmology" Shaozhen Li Invited Named Lecture and Parallel Symposium "Digital Health Innovation and Smartphone Adapters to Take Pictures of the Eye" International Symposium of Ophthalmology (ISO), China – 10/31/15
- 81) Lifeline Express Foundation, Glaucoma International Conference Lectures, China – 10/17/15
- 82) "Digital Health Innovation: A Personal Journey in Silicon Valley" Stanford Center at Peking University Innovation VISA Teleconference Lecture, China – 7/24/15
- 83) "When and What Treatment to Start in Glaucoma Suspect" World Glaucoma Congress (WGC), Hong Kong – 6/7/15
- 84) "Smartphone and Tablet Computers for Ophthalmic Information for Private Study or by the Bedside: Ophthalmic Imaging Anterior and Posterior Segment" Asia Pacific Academy of Ophthalmology (APAO), China – 4/3/15
- 85) Lifeline Express Foundation, Glaucoma International Conference Lectures, China – 11/1/14
- 86) "Updates on Portable Ophthalmic Imaging" Senior Instructor, Asia-Pacific Glaucoma Congress (APGC), Hong Kong – 9/27/14
- 87) "Innovation in Mobile Healthcare: Using Smartphones as Medical Devices" Public Lecture at Stanford Center at Peking University, China – 6/12/14
- 88) "Mobile Health in Ophthalmology: A View From Silicon Valley" Chinese Ophthalmology Society, China – 5/31/14.
- 89) "Endocyclophotocoagulation" World Ophthalmology Congress (WOC), Japan – 4/5/14
- 90) "Smartphones and Gadgets: How to Practice Neuro-Ophthalmology Anywhere in the 21st Century" North American Neuro-Ophthalmology Society (NANOS) Symposium, Puerto Rico – 3/5/14
- 91) "Visual Field Defects in Myopes and 6 Lessons Using SD-OCT" Visiting Professor Glaucoma Update Mettapracharak Hospital, Thailand – 12/27/13
- 92) "6 Lessons: SD-OCT for Glaucoma" Visiting Professor Seoul National University Hospital, Korea – 12/23/13
- 93) "Myopia and Glaucoma: Visual Field Defects in High Myopes" International Symposium of Ophthalmology (ISO), China – 11/11/13
- 94) "Glaucoma: Early Diagnosis and Prevention of Blindness" Pan-American Congress of Ophthalmology (PAAO), Brazil – 8/10/13
- 95) "Glaucoma and Myopia: Challenges and Pearls for Progression Detection" World Glaucoma Congress (WGC), Canada – 7/19/13
- 96) Lifeline Express Foundation, Glaucoma International Conference Lectures, China – 6/13/13
- 97) Lifeline Express Foundation, Glaucoma International Conference Lectures, China – 9/1/12-9/2/12
- 98) "OCT: ONH, RNFL, GCA, GPA" Visiting Professor Hong Kong Sanatorium and Hospital Grand Rounds, Hong Kong – 7/5/12

- 99) "Collagen Disease and Glaucoma" Asia Pacific Academy of Ophthalmology (APAO), Korea – 4/16/12
- 100) "Cirrus OCT" Visiting Professor Seoul National University Hospital, Korea – 9/23/11
- 101) Visiting Professor Lanzhou University Ophthalmology Conference, China – 8/12/11
- 102) "Trabeculectomy Failure" World Glaucoma Congress (WGC), France – 7/2/11
- 103) Lifeline Express Foundation, Glaucoma International Conference Lectures, China – 6/19/11-6/23/11
- 104) "Management of Acute Angle Closure" Asia Pacific Academy of Ophthalmology (APAO), Australia – 3/21/11
- 105) Lifeline Express Foundation, Cataract and Glaucoma International Conference Lectures, China – 12/16/10-12/19/2010

INVITED REGIONAL AND NATIONAL LECTURES

- 1) "Big Data and AI," Co Moderator, American Society of Cataract and Refractive Surgery (ASCRS), Washington DC – 4/11/26
- 2) "Glaucoma Progression Analysis" Hawaiian Eye Big Island, Kona – 1/21/26
- 3) "Transforming Eye Care, Where AI Agents and Smartphones are Taking Us" AAO Orlando – 10/18/25
- 4) "AI Hype vs. Reality: How Will Eye Care Change?" Santa Clara County Optometric Society, Santa Clara - 9/25/25
- 5) "Glaucoma and AI," American Society of Cataract and Refractive Surgery (ASCRS), Los Angeles – 4/25/25
- 6) Co-Moderator Glaucoma Section, Sonoma Eye, San Diego – 3/22/25
- 7) "Large Language Models for Glaucoma Education," "Precision Glaucoma: Beyond IOP Reduction as Success" Utah Ophthalmology Society Annual Meeting, Salt Lake City, 1/30/25
- 8) "Best Practices Perimetry and Imaging," "Drug and Diagnostics" panel, Hawaiian Eye Kauai, 1/22/25
- 9) American Academy of Ophthalmology (AAO) Glaucoma Subspecialty Day AGS Symposium Committee and Speaker, and Co-moderator Surgical Videos and Lab 119: Digital Ophthalmology and Glaucoma, Chicago – 10/20/24
- 10) "Intro of AI Application in US Healthcare Industry," Enlightenment Program, SCPKU Stanford – 9/15/24
- 11) "Eye on the Future: AI and Generative Models" 16th US-Japan Future Forum, Sunnyvale – 9/13/24
- 12) "Outside the White Coat," Panelist, YoungMD Connect (YMDC Live), Austin – 4/20/24
- 13) "AI Evolution and Glaucoma Care," "Introducing the Latest Digital Tools for Planning and Performing Cataract Surgery," "How to: YES Advocating for Digital Change in Your Practice," "Navigating Real-World Obstacle to Digital Transformation in Your Practice," ASCRS Boston-4/5/24
- 14) Co-Moderator Glaucoma Section, Sonoma Eye, Sonoma – 3/23/24
- 15) "Should We Fear or Embrace Our Future Machine Overlords?" American Glaucoma Society (AGS), Huntington Beach - 3/2/24
- 16) "Glaucoma and Cataract Surgery," "Standalone MIGS" panel, Hawaiian Eye Maui, 1/17/24
- 17) American Academy of Ophthalmology (AAO) Glaucoma Subspecialty Day Committee Member and Co-moderator Late Breaking Section, San Francisco - 11/3/23
- 18) "Updates in the Glaucoma Treatment Paradigm," Bay Area Optometric Council, San Francisco - 6/4/23

- 19) Young MD Connect (YMDC) Mentoring Session 5/17/23 virtual
- 20) Common Ophthalmic Issues in the Office" Good Samaritan Hospital CME Lecture, San Jose, 5/17/23 - virtual
- 21) Roundtable Discussions "Virtual Reality, Making Connections," National Association of Vision Care Plans (NAVCP), Tucson - 4/20/23
- 22) Debate "Intracameral bimatoprost, Why bother if one and done?" Hawaiian Eye Grand Hyatt Kauai - 1/18/23
- 23) "AI and Role in Interventional Glaucoma," Interventional Glaucoma Congress (IGC), Salt Lake City - 11/19/22
- 24) American Academy of Ophthalmology (AAO) Glaucoma Subspecialty Day Committee Member and Co-moderator Surgical Videos, and Lab 119: Digital Ophthalmology and Glaucoma, Chicago - 9/30/22
- 25) "Deep Learning for Glaucoma Detection Using 3D Macular OCT Scans" AGS Virtual Research Symposium - 5/14/22 virtual meeting
- 26) "AI Past Present and Future as It Applies to the Clinical Arena" International Corporate Health Leadership Council, Salt Lake City - 4/28/22
- 27) "Real World Safety Analysis of an Intracanalicular Dexamethasone Insert using the Intelligent Research in Sight (IRIS) Registry" American Society of Cataract and Refractive Surgery, Washington DC 4/24/22
- 28) "Glaucoma Lightning Rounds" Hawaiian Eye Hilton Waikoloa, Big Island, Hawaii - 1/19/22
- 29) "What Can You Do with an MD Degree" Harker School Medical Club, San Jose - 12/10/21 virtual
- 30) Lab 120 "Smartphones in Ophthalmology #TheFutureIsAI" American Academy of Ophthalmology (AAO), New Orleans - 11/13/21
- 31) Interventional Glaucoma Congress (IGC), Chicago, 10/7/21-10/9/21
- 32) "That's Debatable: AI will Dominate Eye Care in 10 years" Hawaiian Eye Grand Wailea, Maui – 1/20/21 moved to 5/12/21
- 33) "Useful Apps for Managing Glaucoma Patients" American Glaucoma Society (AGS) Breakfast Roundtable Moderator, San Francisco - 3/6/21 - virtual
- 34) "Technologies to Enable Global Ophthalmology" PH 196 Global Ophthalmic Public Health and Epidemiology of Eye Disease, Guest Lecturer, UC Berkeley - 2/18/21
- 35) "Telemedicine and AI" UCSF Ophthalmology Update, San Francisco - 12/4/20
- 36) Lab 120 "Smartphones in Ophthalmology #TheFutureIsAI" American Academy of Ophthalmology (AAO), Las Vegas – 11/14/20 – virtual meeting, postponed
- 37) "Session 3: Datasets Standardization, curation, data hosting, data, ownership/use" Panel CCOI Glaucoma Day, Stanford Webinar – 9/3/20
- 38) "Biodesign Unmet Needs in Beauty" L'Oreal Innovation Webinar – 6/22/20
- 39) "Angle Surgery in Uveitis Patients" Sonoma Eye, Fairmont Sonoma – 4/3/20 cancelled
- 40) "AI and Ophthalmology" PH 196 Global Ophthalmic Public Health and Epidemiology of Eye Disease, Guest Lecturer, UC Berkeley 2/20/20
- 41) Member Value Tools from the IRIS Registry and Verana Health: How to Improve Your Practice" AAO Course American Academy of Ophthalmology (AAO), San Francisco - 10/14/19
- 42) "The Impact of Artificial Intelligence (AI) on Ophthalmology" Symposium, "The Evolution and Effect of Genomic Medicine, Blockchain, and Robot-assisted Surgery on the Practice of Ophthalmology" Symposium, American Academy of Ophthalmology (AAO), San Francisco - 10/13/19
- 43) "OCT-A and Glaucoma" UCSF Napa CME Course, Rohnert Park - 9/13/19

- 44) Visiting Professor 23rd Annual Yale Glaucoma Symposium, Woodbridge - 9/6/19
- 45) "How to Choose the Correct MIGS Device and Manage Post-op Expectations" American Glaucoma Society (AGS) Breakfast Roundtable Lead Moderator, San Francisco – 3/17/19
- 46) "Keeping a Clear Eye: Cataracts" Dominican Hospital CME Lecture, Santa Cruz – 1/4/19
- 47) "Glaucoma: Therapeutic Updates, Best Practices, and Barriers to Effective Care" Santa Clara County Optometric Society, San Jose - 11/15/18
- 48) "Smartphones in Ophthalmology #TheFutureIsAI" American Academy of Ophthalmology (AAO), Chicago - 10/29/18
- 49) "Home Visual Fields" Glaucoma Subspecialty Day, American Academy of Ophthalmology (AAO), Chicago - 10/27/18
- 50) "What Can You Do With an MD Degree" Los Altos High School STEAM Week - 10/8/18
- 51) "Ophthalmology Basics," Biodesign Fellowship Lead Coordinator, Stanford - 8/6/18
- 52) Moderator, Poster Session 274, Surgery and Wound Healing II, Association of Research and Vision in Ophthalmology (ARVO), Honolulu - 4/30/17
- 53) "Various Strategies and the Role of Artificial Intelligence in a Tele-Glaucoma Screening Service" SIG Telemedicine and AI Panel, Association of Research and Vision in Ophthalmology (ARVO), Honolulu - 4/29/17
- 54) "Tips for Adopting MIGS" American Glaucoma Society (AGS) Breakfast Roundtable Co-Moderator, New York City – 3/4/18
- 55) "Vision and Hearing Screening" Panel Ophthalmology/ENT CME, Sonoma – 2/2/18
- 56) "Cataracts," Regional Medical Center of San Jose – 1/9/18
- 57) Lab 150 "AI Trends in Medicine" American Academy of Ophthalmology (AAO), New Orleans – 11/13/17
- 58) "Embracing the AI Revolution in Glaucoma" 2017 Weston Invited Lecture, Glaucoma Research Foundation, Palo Alto – 10/7/17
- 59) 2017 China-US Young Maker Summit & China-US Youth Innovation Center Inauguration Ceremony, New York University (NYU), New York - 9/25/17
- 60) "Sudden Vision Loss" Dominican Hospital CME Lecture, Santa Cruz – 7/21/17
- 61) "How MAPS Jumpstarted My Academic Career" MAPS Luncheon Symposium, American Glaucoma Society (AGS), San Diego – 3/4/17
- 62) "New Innovations in Hacking Glaucoma" Glaucoma 360, Glaucoma Research Foundation, San Francisco – 2/5/17
- 63) "How Artificial Intelligence (AI) Help Save Sight" 2016 Young Ophthalmology Symposium, American Academy of Ophthalmology (AAO), Chicago – 10/17/16
- 64) "Updates in Portable Imaging" The Virtual and Mobile Glaucoma Office Symposium, American Academy of Ophthalmology (AAO), Chicago – 10/17/16
- 65) "Case #2: Diagnostic and Therapeutic Challenges in High Myopia" Glaucoma Subspecialty Day, American Academy of Ophthalmology (AAO), Chicago – 10/15/16
- 66) "Ophthalmology for the Primary Care Physician" Regional Medical Center of San Jose – 3/15/16
- 67) "Smartphone Imaging: New Options" Glaucoma 360 OD Meeting, San Francisco – 1/30/16
- 68) "Structural and Functional Glaucoma Progression Analysis and Precision Medicine" Glaucoma 360, Glaucoma Research Foundation, San Francisco – 1/30/16
- 69) Lab 140 "iPhone and iPad for Ophthalmologists" Course Instructor, American Academy of Ophthalmology, Las Vegas – 11/16/15

- 70) "New Developments in OCT Imaging for Glaucoma: Update on the Macula" American Glaucoma Society (AGS) Breakfast Roundtable Co-Moderator, San Diego – 3/1/15
- 71) "The EyeGo and Mobile Health Innovation" PH 196 Global Ophthalmic Public Health and Epidemiology of Eye Disease, Guest Lecturer, UC Berkeley – 2/12/15
- 72) "Glaucoma Genetics: Facts vs. Fiction" Glaucoma 360, Glaucoma Research Foundation, San Francisco – 2/7/15
- 73) "Smartphone-Based Tele-Ophthalmology Screening For Diabetic Eye Disease" Bay Area Vision Research Day (BAVRD) Guest Lecturer, UC Berkeley – 2/6/15
- 74) "New Clinical Dimensions in Glaucoma Diagnostics" Hawaiian Eye Zeiss Academy, Maui – 1/20/15
- 75) "How to Use SDOCT Effectively for Glaucoma" Zeiss Academy, Oakland – 8/20/14
- 76) "Smartphone Adaptors for Ocular Image Capture" Glaucoma 360, Glaucoma Research Foundation, San Francisco – 2/8/14
- 77) "Structure and Function in Glaucoma Diagnostics: The Trials and their Impact on the Development of New Technologies" Hawaiian Eye Zeiss Symposium, Kauai – 1/21/14
- 78) Lab 192a and 192b "iPhone Physician Education and Reference Tools" Course Instructor, American Academy of Ophthalmology, New Orleans – 11/17/13
- 79) "Update in Ophthalmology" Dominican Hospital CME Lecture, Santa Cruz – 7/12/13
- 80) "Fixing the Plumbing of the Eye" American Society of Ophthalmic Registered Nurses (ASORN) Lecture, Palo Alto – 4/27/13
- 81) "The Art of Fundus Photo Interpretation" Glaucoma 360, Glaucoma Research Foundation, San Francisco – 2/2/13
- 82) Lab 192a and 192b "iPhone Physician Education and Reference Tools" Course Instructor, American Academy of Ophthalmology, Chicago – 11/11/12
- 83) "OCT Diagnostic Performance Studies" Invited Panel Speaker FDA AGS Workshop, Washington D.C. – 10/5/12
- 84) "Myopia and Glaucoma" Glaucoma 360, Glaucoma Research Foundation, San Francisco – 2/3/12
- 85) Lab 152a and 152b "iPhone Patient Education and Social Media" Course Instructor, American Academy of Ophthalmology, Orlando – 10/24/11
- 86) "Retcam Goniography" American Glaucoma Society (AGS) Pre-Surgical Meeting, Naples – 3/3/10

STANFORD UNIVERSITY LECTURES

- 1) "Glaucoma Surgery and Lasers" Stanford Basic Science Review Course, Palo Alto – 7/15/25
- 2) "Embracing LLMs in Academia" OHNS Grand Rounds, Palo Alto - 1/6/25
- 3) "Optic Nerve Imaging" Stanford Basic Science Review Course – 7/15/24
- 4) Ophthalmology 201 Course Lecture, Palo Alto - 11/3/22
- 5) "Doctors and Innovation: The Survival Guide at Stanford" OHNS Grand Rounds, Palo Alto - 10/13/22
- 6) "Optic Nerve Imaging" Stanford Basic Science Review Course, Palo Alto, 7/18/22
- 7) Chapter 4,5: Glaucoma Anterior and Posterior Segment Imaging Review 9/30/21 – virtual meeting
- 8) "How to Maximize Optic Nerve Imaging for Glaucoma Management" Stanford Basic Science Review Course 7/20/21 - virtual meeting
- 9) "What's Next in Glaucoma AI" Stanford Basic Science Review Course 7/12/21 - virtual meeting
- 10) Chapter 5: Glaucoma Imaging Review 9/10/20 – virtual meeting

- 11) "What's New in Optic Nerve Imaging," "Machine Learning in Glaucoma" Stanford Basic Science Review Course, Palo Alto – 7/13/20, 7/31/20
- 12) "The Role of Artificial Intelligence in Medicine" CARE Summer Internship Lecture in Data Science, AI, and Medical Technology - 6/18/19
- 13) "Blockchain in Healthcare" Center for Digital Health Workshop Presentation - 2/15/19
- 14) "Mobile Health Needs" BioE 273 Stanford Biodesign for Mobile Health Panel - 10/3/18
- 15) "Vision Care: Landscape Overview of Ophthalmology" Biodesign Fellows Lecture - 8/6/18
- 16) "Health Hackathons" Center for Digital Health Workshop Presentation - 5/23/18
- 17) "Designing a Wearable Personal Air Pollution Sensor and Filter Device for China and Beyond" Spectrum Biodesign MedTech Highlights - 4/9/18
- 18) "Precision Health in Glaucoma" Stanford Glaucoma Resident Lecture - 3/15/18
- 19) "Precision Medicine in Glaucoma" Stanford Glaucoma Resident Lecture - 12/8/17
- 20) "Genetics of Glaucoma" and "Optic Nerve Imaging" Stanford Basic Science Review Course, Palo Alto – 7/19/17
- 21) "Mobile Health Needs" BioE 273 Stanford Biodesign for Mobile Health Panel – 10/5/16
- 22) "Genetics of Glaucoma" and "Optic Nerve Imaging" Stanford Basic Science Review Course, Palo Alto – 7/20/16
- 23) "Ophthalmology as a Career" Ophthalmology Interest Group Panel, Stanford – 4/26/16
- 24) "Need Finding in Mobile Health" SHIFT Digital Health Panel, Stanford – 4/8/16
- 25) "Innovation in Glaucoma" Stanford Glaucoma Resident Lecture - 4/7/16
- 26) "Vision and Aging: Glaucoma, Macular Degeneration, and Cataracts" Stanford Physician Assistant (PA) Program Guest Lecturer – 1/11/16
- 27) "Enabling Technologies" BioE 273 Stanford Biodesign for Mobile Health Panel – 10/7/15
- 28) "Genetics of Glaucoma" Stanford Basic Science Review Course, Palo Alto – 7/22/15
- 29) "Vision and Aging: Glaucoma, Macular Degeneration, and Cataracts" Stanford Physician Assistant (PA) Program Guest Lecturer – 1/12/15
- 30) "OCT and Visual Field Progression Analysis" Stanford Glaucoma Resident Lecture – 11/13/14
- 31) "Genetics of Glaucoma" Stanford Basic Science Review Course, Palo Alto – 7/23/14
- 32) "APAMSA Presents: Medicine in Asia: Practice, Policy & Technology" Guest Speaker Panel, Stanford – 2/25/14
- 33) "Istent" Stanford Glaucoma Resident Lecture – 3/27/14
- 34) "Genetics of Glaucoma" Stanford Basic Science Review Course, Palo Alto – 7/24/13
- 35) "OKAP Glaucoma Review" Stanford Glaucoma Resident Lecture – 2/21/13
- 36) "Visual Field Interpretation" Stanford Glaucoma Resident Lecture – 12/20/12
- 37) "Optic Nerve Interpretation" Stanford Glaucoma Resident Lecture – 10/11/12
- 38) "Genetics of Glaucoma" and "Aqueous Dynamics" Stanford Basic Science Review Course, Palo Alto – 7/16/12
- 39) "Tube versus Trabeculectomy" Journal Club Stanford – 12/20/11
- 40) "iPhone Apps and the Present/Future of Patient Education" Grand Rounds Stanford Ophthalmology Department, Palo Alto – 11/1/11
- 41) "Acute Angle Closure" Stanford Glaucoma Resident Lecture – 10/13/11
- 42) "Normal Tension Glaucoma" Stanford Glaucoma Resident Lecture – 10/11/11

- 43) "Glaucoma Overview" Stanford Glaucoma Resident Lecture – 9/1/11
- 44) "Genetics of Glaucoma" Stanford Basic Science Review Course, Palo Alto – 7/20/11
- 45) "Cirrus OCT Ganglion Cell Analysis" Stanford Research Day, Palo Alto – 6/25/11
- 46) "Glaucoma Technology: Surgical Innovation" Stanford BioDesign Program, Palo Alto – 1/29/11
- 47) "Cataracts and Glaucoma" Stanford Glaucoma Resident Lecture – 1/18/11
- 48) "Glaucoma Lasers" Stanford Glaucoma Resident Lecture – 12/23/10
- 49) "New Glaucoma Surgeries" Stanford Glaucoma Resident Lecture – 10/7/10
- 50) "Glaucoma Pharmacology" Stanford Glaucoma Resident Lecture – 8/31/10
- 51) "Glaucoma Devices: Diagnostic and Therapeutic" Stanford BioDesign Program, Palo Alto – 8/26/10
- 52) "Genetics of Glaucoma" Stanford Basic Science Review Course, Palo Alto – 7/12/10
- 53) "Common Eye Issues" Stanford Physician Assistant (PA) Program Guest Lecturer – 7/8/10
- 54) "Update on Cirrus OCT RNFL and ONH" Stanford Research Day – 6/12/10
- 55) "Glaucoma Pharmacology" Stanford Glaucoma Resident Lecture – 4/20/10
- 56) "Tube and Trabeculectomy Postoperative Management" Stanford Glaucoma Resident Lecture – 1/19/10
- 57) "Glaucoma Coding" Stanford Glaucoma Resident Lecture – 11/10/09
- 58) "Optical Coherence Tomography (OCT) in Glaucoma" Chinese Zeiss Meeting, Stanford – 10/21/09
- 59) "Trabectome" Grand Rounds Stanford Ophthalmology Department, Palo Alto – 10/6/09
- 60) "Gonioscopy" Stanford Glaucoma Resident Lecture – 10/8/09
- 61) "Visual Field Testing" Stanford Glaucoma Resident Lecture – 9/1/09

C. Peer-Reviewed Publications

PEER-REVIEWED PUBLICATIONS IN PRESS

- 1) Ong JCL, Ning Y, Collins GS, Bitterman DS, Beecy AN, **Chang RT**, et al. International Partnership for Governing Generative Artificial Intelligence Models in Medicine. *Nat Med*. 2025 Jun 30. doi: 10.1038/s41591-025-03787-4. Online ahead of print.

PEER-REVIEWED ORIGINAL RESEARCH PUBLICATIONS

- 1) Koornwinder A, Zhang Y, Ravindranath R, **Chang RT**, et al. Multimodal Artificial Intelligence Models Predicting Glaucoma Progression Using Electronic Health Records and Retinal Nerve Fiber Layer Scans. TVST, *Transl Vis Sci Technol*. 2025 Mar 3;14(3):27.
- 2) Radcliffe NM, Harris J, Garcia K, Zwick E, **Chang RT**, Mbagwu M. Standalone Canaloplasty and Trabeculectomy in POAG: A 36-Month Analysis from the AAO IRIS® Registry (Intelligent Research in Sight). *Am J Ophthalmol*. 2025 Mar;271:436-444.
- 3) Ding X, **Chang RT**, Liu L, Yangfan Y, Lu L, Lin X. The Clinical Spectrum and Possible Pathogenesis of Progressive Outer Retinal Necrosis. *Br J Ophthalmol*. 2024 Dec 17;109(1):107-112.
- 4) Berneshawi AR, Shue A, and **Chang RT**. Glaucoma Home Self-Testing Using VR Visual Fields & Rebound Tonometry vs. In-Clinic Perimetry & Goldmann Applanation Tonometry: A Pilot Study. TVST, *Transl Vis Sci Technol*. 2024 Aug 1;13(8):7.
- 5) Nascimento e Silva R, Kim JA, Li Y, Chen C, Chaudhry AF, Zhang M, Villarreal A, Berneshawi AR, Liu J, Shue A, Chang DS, **Chang RT**. Repeatability and Reproducibility of a Virtual Reality Headset Perimeter in Glaucoma and Ocular Hypertensive Patients. *Transl Vis Sci Technol*. 2024 Jun 3;13(6):14.

- 6) Wang SK, Tran EM, Wan L, Yan W, Kosaraju R, Sun Y, **Chang RT**. Comparing a Head-Mounted Smartphone Visual Field Analyzer to Humphrey Perimetry in Glaucoma Patients: A Prospective Study. *J Glaucoma*. 2024 Oct 1;33(10):742-747.
- 7) Wolf K, Chemudupati T, Kumar A, Franco JA, Montague AA, Lin CC, Lee WS, Fisher AC, Goldberg JL, Mruthunjaya P, **Chang RT**, Mahajan VB. Using Electronic Health Record Data to Determine the Safety of Aqueous Humor Liquid Biopsies for Molecular Analyses. *Ophthalm Sci* 2024 4(5): 100517.
- 8) Wolf J, Rasmussen DK, Sun YJ, Vu JT, Wang E, Espinosa C Camilo Espinosa, Bigini F, **Chang RT**, et al. Liquid-Biopsy Proteomics Combined with AI Identifies Cellular Drivers of Eye Aging and Disease In Vivo. *Cell*. 2023 Oct 26;186(22):4868-4884.e12
- 9) Ran AR, Wang X, Chan PP, Wong OM, Yuen H, Lam NM, Chan NC, Yip W, Young AL, Yung HW, **Chang RT**, et al. Developing A Privacy-preserving Deep Learning Model for Glaucoma Detection: A Multi-Centre Study with Federated Learning. *Br J Ophthalmol*. 2023 Oct 19:bjo-2023-324188.
- 10) Wolf J, Chemudupati T, Kumar A, Rasmussen DK, Wai KM, **Chang RT**, et al. Biobanking of Human Aqueous and Vitreous Liquid Biopsies for Molecular Analyses. *J Vis Exp*. 2023 Sep 11;(199).
- 11) Bernstein IA, Zhang Y, Govil D, Majid I, **Chang RT**, et al. Comparing the Performance of Ophthalmologist and ChatGPT Responses to Online Patient Eye Care Questions. *JAMA Netw Open*. 2023 Aug 1;6(8):e2330320.
- 12) Gui H, Zhang, V, **Chang RT**, Wang SY. Real-World Agreement of Same-Visit Tono-Pen Vs Goldmann Applanation Intraocular Pressure Measurements Using Electronic Health Records. *Heliyon*. 2023 Jul 27;9(8):e18703
- 13) Huang MJ, Samuelson TW, De Francesco T, Levin A, Sieck E, Gazzard G, Porter M, Gallardo M, **Chang RT**, Liu WW, Chaya C, Gulati S, Shah M. Managing primary open-angle glaucoma in the setting of suboptimal surgical outcomes in the fellow eye. *J Cataract Refract Surg*. 2023 Jul 1;49(7):764.
- 14) Jan C, Xin J, Dong Y, Butt T, **Chang R**, Keay L, Friedman DS, Congdon N. Patterns and Determinants of Incident Cataract Surgery in China from 2011 to 2015 Using a Nationally representative Longitudinal Database. *BMJ Open*. 2023 Jun 21;13(6).
- 15) Sun MT, Tran M, Singh K, **Chang R**, Wang H, Sun Y. Glaucoma and Myopia: Diagnostic Challenges. *Biomolecules*. 2023 Mar 20;13(3):562.
- 16) Awh CC, Barteselli G, Madakia S, **Chang RT**, Stewart JM, Wieland MR, Brassard R, Callaway NF, Gune S, Heatherton P, Malhotra V, Willis JR, Pieramici DJ. Management of Key Ocular Adverse Events in Patients Implanted With the Port Delivery System With Ranibizumab (PDS). *Ophthalmol Retina*. 2022 Nov; 6(11):1028-1043.
- 17) Sun MT, Beykin G, Lee WS, Sun Y, **Chang R**, Nunez M, Li KZ, Knasel C, Rich C, Goldberg, JL. Structural and Metabolic Imaging after Short-term Use of the Balance Goggles System in Glaucoma Patients: A Pilot Study. *Journal of Glaucoma* 31(8):p 634-638, August 2022.
- 18) Ran AR, Wang X, Chan PP, Chan NC, Yip W, Young AL, Wong MOM, Yung HW, **Chang RT**, et. al. Three-Dimensional Multi-Task Deep Learning Model to Detect Glaucomatous Optic Neuropathy and Myopic Features From Optical Coherence Tomography Scans: A Retrospective Multi-Centre Study. *Front Med (Lausanne)*. 2022 Jun 15;9:860574
- 19) Pieramici DJ, Wieland MR, Stewart JM, **Chang RT**, Gune SA, Malhotra VK, Barteselli G, Awh CC. Implant Insertion Procedure of the Port Delivery System With Ranibizumab: Overview and Clinical Pearls. *Ophthalmic Surg Lasers Imaging Retina*. 2022 May;53(5):249-256. doi: 10.3928/23258160-20220408-01. Epub 2022 May 1.
- 20) Graff JM, Sheth VS, **Chang RT**, Menezes AR, Barteselli G, Malhotra VK. Conjunctiva and Tenon's Capsule Handling in the Port Delivery System with Ranibizumab Implant Insertion Procedure: Surgical Pearls. *Ophthalmic Surg Lasers Imaging Retina*. 2022 May;53(5):266-273. doi: 10.3928/23258160-20220415-03. Epub 2022 May 1.
- 21) Noury E, Manni SS, **Chang RT**, Ran AR, Cheung CY, Thapa SS, Rao HL, Dasari S, Riyazuddin, M, Chang D, Nagaraj S, Thma CC, Zadeh R. Deep Learning for Glaucoma Detection and Identification of Novel Diagnostic Areas in Diverse Real World Data Sets. *Transl Vis Sci Technol*. 2022 May 2;11(5):11. doi: 10.1167/tvst.11.5.11.
- 22) Aziz R, Bindiganavale, M, **Chang RT**, Moss HE. Patient Personality and Illness Perceptions in Relation to Follow-Up Appointment Adherence in Neuro-ophthalmology. *J Neuroophthalmol*. 2022 Jun 1;42(2):180-186. doi: 10.1097/WNO.0000000000001533. Epub 2022 Mar 24.

- 23) Rothman, A. L., **Chang, R.**, Kolomeyer, N. N., Turalba, A., Stein, J. D., Boland, M. V. American Glaucoma Society Position Paper: Information Sharing Using Established Standards is Essential to the Future of Glaucoma Care. *Ophthalmol Glaucoma* 2021 Dec 18;S2589-4196(21)00279-9. Online ahead of print.
- 24) Liu X, Wang G, Wang X, Wang Y, Min Y, **Chang RT**, et al. Daytime napping is associated with retinal microcirculation: a large population-based study in China. *Sleep* 2021 Nov 20;zsab277. doi: 10.1093/sleep/zsab277. Online ahead of print.
- 25) Beykin G, Stell L, Halim MS, Nunez M, Popova L, Nguyen BT, Groth SL, Dennis A, Li Z, Atkins M, Khavari T, Wang SY, **Chang R**, Fisher AC, Sepah YJ. Phase 1b randomized controlled study of topical recombinant human nerve growth factor (rhNGF) for neuroenhancement in glaucoma. *Am J Ophthalmol*. 2021 Nov 13;234:223-234. doi: 10.1016/j.ajo.2021.11.002. Online ahead of print.
- 26) Lee EB, Wang SY, **Chang, RT**. "Interpreting Deep Learning Studies in Glaucoma: Unresolved Challenges" *Asia Pac J Ophthalmol: May-June 2021*;10(3):261-267
- 27) Tang F, Wang X, Ran AR, Chan CKM, Ho M, Yip W, Young AL, Lok J, Szeto S, Chan J, Yip F, Wong R, Tang Z, Yang D, Ng DS, Chen LJ, Brelén M, Chu V, Li K, Lai THT, Tan GS, Ting DSW, Huang H, Chen H, Ma JH, Tang S, Leng T, Kakavand S, Mannil SS, **Chang RT**, et al. A Multitask Deep-Learning System to Classify Diabetic Macular Edema for Different Optical Coherence Tomography Devices: A Multicenter Analysis. *Diabetes Care*. 2021 Sep;44(9):2078-2088.
- 28) Idriss BR, Tran TM, Atwine D, **Chang RT**, Myung D, Onyango J; Smartphone-Based Ophthalmic Imaging Compared to Spectral Domain Optical Coherence Tomography Assessment of Vertical Cup-to-Disc Ratio among Adults in Southwestern Uganda. *J Glaucoma*. 2021 Mar 1;30(3):e90-98.
- 29) Ludwig CA, Srikanth P, Greven MA, Smith SJ, **Chang RT**, Leng T. Automatic Identification of Referral-Warranted Diabetic Retinopathy using Deep Learning on Mobile Phone Images. *Transl Vis Sci Technol*. 2020 Dec 4;9(2):60.
- 30) Chansangpetch S, Ittarat M, Yang S, Fisher AC, Singh K, Lin SC, **Chang RT**. "Comparison of 1 Year Effectiveness of Trabecular Microbypass Stent Implantation (iStent) Among Mild, Moderate, and Severe Primary Open Angle Glaucoma." *J Glaucoma*. 2020 Jul;29(7):542-549.
- 31) Wang X, Chen H, Ran AR, Luo L, Chan PP, Tham CC, **Chang RT**, Mannil SS, Cheung CY, Heng PA. "Towards multi-center glaucoma OCT image screening with semi-supervised joint structure and function multi-task learning." *Med Image Anal* 2020; 63: 101695.
- 32) Yang S, Ittarat M, Tran E, Ferrell P, Wang G, Fisher AC, Li Z, Chang RT. Comparison of Using One Trabecular Microbypass Stent versus Two during Cataract Surgery at Two Sites: One-Year Follow-Up. *Biomed Res Int*. 2020 Apr 7;2020:1920352.
- 33) Russakoff DB, Mannil SS, Oakley JD, Ran AR, Cheung CY, Dasari S, Riyazzuddin M, Nagaraj S, Rao HL, Chang D, **Chang RT**. A 3D deep learning system for detecting referable glaucoma using full OCT macular cube scans. *Trans Vis Sci Tech*. 2020;9(2):12.
- 34) Liu H, Li L, Wormstone IM, Qiao C, Zhang C, Liu P, Li S, Wang H, Mou D, Pang R, Yang D, Jiang L, Chen Y, Hu M, Xu Y, Kang H, Ji X, **Chang R**, Tham C, Cheung C, Ting DSW, Wong TY, Wang Z, Weinreb RN, Xu M, Wang N. Development and Validation of a Deep Learning System to Detect Glaucomatous Optic Neuropathy Using Fundus Photographs. *JAMA Ophthalmol*. 2019 Sep 12;137(12):1353-60.
- 35) Ran A, Wang X, Chen H, Luo L, Chan PP, Wong MO, **Chang RT**, Mannil SS, Young AL, Yung H, Pang CC, Tham CC, Cheung CY. "To Detect Glaucomatous Optic Neuropathy by 3D Learning with Optical Coherence Tomography." *Lancet Digital Health*, Vol. 1, No. 4, e172–e182. August 2019
- 36) Wang SY, Hernandez-Boussard T, **Chang RT**, Pershing S. Understanding Patient Attitudes Toward Multifocal Intraocular Lenses in Online Medical Forums Through Sentiment Analysis. *Stud Health Technol Inform*. 2019 Aug 21;264:1378-1382.
- 37) Yu X, Guo H, Liu X, Wang G, Min Y, Chen S, Han S, **Chang RT**, Zhao X, Hsing AW, Zhu S, Yao K. Dry eye and sleep quality: a large community-based study in Hangzhou. *Sleep*. 2019 Oct 21; 42(11).
- 38) Keel S, Li Z, Scheetz J, Robman L, Phung J, Makeyeva G, Aung KZ, Liu C, Yan X, Meng W, Guymer R, **Chang R**, He M. Development and Validation of a Deep Learning Algorithm for the Detection of Neovascular Age-related Macular Degeneration from Color Fundus Photographs. *Clin Exp Ophthalmol*. 2019 Nov;47(8):1009-1018.

- 39) Lee MD, Chen SP, Chen TA, Leibold C, Li Z, Fisher AC, Lin CC, Singh K, **Chang RT**. "Characteristics of Cataract Surgery Patients Influencing Press Ganey Patient Satisfaction Scores." *J Cataract Refract Surg*. 2019 Apr;45(4):437-442.
- 40) Hong K, Wong IYH, Singh K, **Chang RT**. "Corneal Biomechanics Using a Scheimpflug-Based Noncontact Device in Normal-Tension Glaucoma and Healthy Controls." *Asia Pac J Ophthalmol (Phila)*. 2019 Feb 18. 2019 Jan-Feb;8(1):22-29.
- 41) Wang, JK, Roy, SK, Barry M, **Chang RT**, Bhatt AS. "Institutionalizing Healthcare Hackathons to Promote Diversity in Collaboration in Medicine." *BMC Med Educ*. 2018 Nov 20;18(1):269.
- 42) Wang JK, Pamnani RD, Capasso R, **Chang RT**. "An Extended Hackathon Model for Collaborative Education in Medical Innovation." *J Med Syst*. 2018 Oct 17;42(12):239.
- 43) Li Z, Keel S, Liu C, He Y, Meng W, Scheetz J, Lee PY, Shaw J, Ting D, Wong T, Taylor H, **Chang R**, He M. "An Automated Grading System for Detection of Vision-Threatening Referable Diabetic Retinopathy on the Basis of Color Fundus Photographs." *Diabetes Care*. 2018 Dec;41(12):2509-2516.
- 44) Wang SY, Singh K, Stein JS, **Chang RT**. "Reduction of Ocular Antihypertensive Medication Usage After iStent Implantation Concurrent with Cataract Surgery in a Large U.S. Healthcare Claims Database." *JAMA Ophthalmol*. 2019 Jan 1;137(1):21-27. doi: 10.1001/jamaophthalmol.2018.4461.
- 45) Li Z, He Y, Keel S, Meng W, **Chang RT**, He M. "Efficacy of A Deep Learning System for Detecting Glaucomatous Optic Neuropathy based on Color Fundus Photographs." *Ophthalmology*. 2018 Aug;125(8) 1199-1206.
- 46) Ludwig CA, Newsom M, Jais A, Myung DJ, Murthy SI, **Chang RT**. "Training Time and Quality of Smartphone-Based Anterior Segment Screening in Rural India." *Clin Ophthalmol*. 2017 Jul 14;11:1301-1307.
- 47) Yoo YC, Kim JM, Park HS, Yoo C, Shim SH, Park KH, **Chang RT**. "Relationship Between Retinal Nerve Fiber Layer Defects and the Quadrant and Proximal Location of Optic Disc Hemorrhage." *Optom Vis Sci*. 2017 Jun;94(6):647-653.
- 48) Iu LP, Lee R, Fan MC, Lam WC, **Chang RT**, Wong IY. "Serial Spectral-Domain Optical Coherence Tomography Findings in Acute Retinal Pigment Epitheliitis and the Correlation to Visual Acuity." *Ophthalmology*. 2017 Jun;124(6):903-909.
- 49) Lowry EA, Hou J, Hennein L, **Chang RT**, Lin S, Keenan J, Wang SK, Ianchulev S, Pasquale L, Han Y. "Comparison of Peristat Online Perimetry with Humphrey Perimetry in a Clinic-Based Setting." *Transl Vis Sci Technol*. 2016 Jul 19;5(4):4.
- 50) Ludwig CA, Murthy S, Pappuru RR, Jais A, Myung D, **Chang RT**. "A Novel Smartphone Imaging Adapter: User Feasibility Studies in Hyderabad, India." *Indian J Ophthalmol*. 2016 Mar;64(3):191-200.
- 51) Ding X, **Chang RT**, Guo X, Liu X, Holden B, He M. "Visual Field Defect Classification in the Zhongshan Ophthalmic Center- Brien Holden Vision Institute High Myopia Registry Study." *Br J Ophthalmol*. 2016 Dec;100(12):1697-1702.
- 52) Lee R, **Chang RT**, Wong I, Lai J, Lee J, Singh K. Assessment of corneal biomechanical parameters in myopes and emmetropes using the Corvis ST. *Clin Exp Optom*. 2016 Mar;99(2):157-62.
- 53) Toy B, Myung D, He L, Pan CK, **Chang RT**, Polkinhorne A, Merrell D, Foster D, Blumenkranz MS. Smartphone Ophthalmoscopy Lens Adapter as an Inexpensive Screening Tool to Detect Referral-Warranted Diabetic Eye Disease. *Retina*. 2016 May;36(5):1000-8.
- 54) Do AT, Pilai MR, Balakrishnan V, **Chang RT**, Robin AL, Singh K, Lee BW. Effectiveness of Glaucoma Counseling on Rates of Follow-up and Glaucoma Knowledge in a South Indian Population. *Am J Ophthalmol*. 2016 Mar;163:180-189.
- 55) Long C, Tsay EL, Jacobo SA, Popat R, Singh K, **Chang RT**. Factors Associated with Press Ganey Satisfaction Scores for Ophthalmology Patients. *Ophthalmology*. 2016 Feb;123(2):242-7.
- 56) Lee R, **Chang RT**, Wong I, Lai J, Lee J, Singh K. Novel Parameter of Corneal Biomechanics That Differentiate Normals from Glaucoma. *J Glaucoma*. 2016 Jun;25(6):e603-9.
- 57) Choi DY, **Chang RT**, Yegnashankaran K, Friedman NJ. Reversible Conjunctival Pigmentation Associated With Prostaglandin Use. *J Glaucoma*. 2016 Jan;25(1):e56-7.
- 58) Mwanza JC, Warren JL, Hochberg JT, Budenz DL, **Chang RT**, Ramulu PY. Combining Frequency Doubling Technology and Scanning Laser Polarimetry for Glaucoma Detection. *J Glaucoma*. 2015 Oct-Nov;24(8):561-7.

- 59) Lin SR, Lai I, Dutta S, Singh K, **Chang RT**. Quantitative Measurement of Fixation Stability During Rarebit Perimetry and Humphrey Visual Field Testing. *J Glaucoma*. 2015 Feb;24(2):100-4.
- 60) Do AT, Ilango K, Ramasamy D, Kalidasan S, Balakrishnan V, **Chang RT**. Effectiveness of Low Vision Services in Improving Patient Quality of Life at Aravind Eye Hospital. *Indian J Ophthalmol*. 2014 Dec;62(12):1125-31.
- 61) Lin SR, Fijalkowski N, Lin BR, Li F, Singh K, **Chang RT**. Parallel Rarebit: A Novel, Large-Scale Visual Screening Methodology for School-Age Children. *Clin Exp Optom*. 2014 Nov;97(6):528-33.
- 62) Silva RA, **Chang RT**, Moshfeghi DM, Leng T. Optic Nerve Pit-associated Choroidal Cleft. *JAMA Ophthalmol*. 2014 Sep 1;132(9):1142.
- 63) Mwanza JC, Budenz DL, Godfrey DG, Neelakantan A, Sayyad FE, **Chang RT**, Lee RK. Diagnostic Performance of Optical Coherence Tomography Ganglion Cell-Inner Plexiform Layer Thickness Measurements in Early Glaucoma. *Ophthalmology*. 2014 Apr;121(4):849-54.
- 64) Lee JWY, Chan JCH, **Chang RT**, Singh K, Liu CCL, Gangwani R, Wong MOM, Lai JSM. Corneal Changes After a Single Session of Selective Laser Trabeculoplasty for Open Angle Glaucoma. *Eye (Lond)*. 2014 Jan;28(1):47-52. Epub 2013 Oct 18.
- 65) Mwanza JC, Durbin MK, Budenz DL, Sayyad FE, **Chang RT**, et al. Glaucoma Diagnostic Accuracy of Ganglion Cell-Inner Plexiform Layer Thickness: Comparison with Nerve Fiber Layer and Optic Nerve Head. *Ophthalmology*. 2012 Jun;119(6):1151-8. Epub 2012 Feb 23.
- 66) Mwanza JC, Oakley JD, Budenz DL, **Chang RT**, et al. Macular Ganglion Cell-Inner Plexiform Layer: Automated Detection and Thickness Reproducibility with Spectral-Domain Optical Coherence Tomography in Glaucoma. *Invest Ophthalmol Vis Sci*. 2011 Oct 21;52(11):8323-9.
- 67) Bhorade AM, Wilson BS, Gordon MO, Palmberg P, Weinreb RN, Miller E, **Chang RT**, Kass MA; for the Ocular Hypertension Treatment Study Group. The Utility of the Monocular Trial Data from the Ocular Hypertension Treatment Study. *Ophthalmology*. 2010 Jul 8. Epub 2010 Aug 12.
- 68) Mwanza JC, **Chang RT**, Budenz DL, et al. Reproducibility of Peripapillary Retinal Nerve Fiber Layer Thickness and Optic Nerve Head Parameters Measured with CirrusTM HD-OCT in Glaucomatous Eyes. *Invest Ophthalmol Vis Sci*. 2010 Jun 23. Epub 2010 Jun 23.
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- 72) Budenz DL, **Chang RT**, Huang X, et al. Reproducibility of Retinal Nerve Fiber Thickness Measurements Using the Stratus OCT in Normal and Glaucomatous Eyes. *Invest Ophthalmol Vis Sci* 2005 Jul;46(7):2440-3.
- 73) Mino de Kaspar H, **Chang RT**, Singh K, et al. Prospective Randomized Comparison of 2 Different Methods of 5% Povidone-Iodine Applications for Anterior Segment Intraocular Surgery. *Arch Ophthalmol* 2005 Feb;123(2):161-5.
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- 75) De Kaspar HM, **Chang RT**, Shriver EM, et al. Three-day Application of Topical Ofloxacin Reduces the Contamination Rate of Microsurgical Knives in Cataract Surgery: a Prospective Randomized Study. *Ophthalmology* 2004 Jul;111(7):1352-5.
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PEER-REVIEWED OTHER REVIEW PUBLICATIONS AND EDITORIALS

- 77) Tham YC, Goh JHL, Nderitu P, et al, Global RETFound Consortium. Building the World's First Truly Global Medical Foundation Model. *Nat Med*. 2025 Sep 8. doi: 10.1038/s41591-025-03859-5. Online ahead of print.

- 78) Yang Z, Wang D, Zhou F, Song D, Zhang Y, Jiang J, Kong K, Liu X, Qiao Y, **Chang RT**, et al. Understanding Natural Language: Potential Application of Large Language Models to Ophthalmology. *Asia Pac J Ophthalmol (Phila)*. 2024 Jul-Aug;13(4):100085.
- 79) Aziz R., **Chang RT**, Moss HE. Assessing Illness Perception Factors Associated with Educational Needs in Neuro-Ophthalmology. LIPPINCOTT WILLIAMS & WILKINS. 2020
- 80) Noury E, Mannil SS, **Chang RT**, Ran AR, Cheung CY, Thapa SS, Rao HL, Dasari S, Riyazuddin M, Nagaraj S, Zadeh R. Finding New Diagnostic Information for Detecting Glaucoma using Neural Networks. updated <https://arxiv.org/abs/1910.06302v2>, 9/3/20
- 81) Noury E, Mannil SS, **Chang RT**, Ran AR, Cheung CY, Thapa SS, Rao HL, Dasari S, Riyazuddin M, Nagaraj S, Zadeh R. Detecting Glaucoma Using 3D Convolutional Neural Network of Raw SD-OCT Optic Nerve Scans. arXiv:1910.06302v1, 10/14/19
- 82) Piech C, Malik A, Scott LM, **Chang RT**, Lin CC. "The Stanford Acuity Test: A Probabilistic Approach for Precise Visual Acuity Testing" arXiv:1906.01811v1
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POSTER PRESENTATIONS

- 1) "Impact on intraocular pressure after switching to Latanoprostene Bunod in patients with glaucoma in real-world clinical practice," "Aqueous Humor Neurofilament Light Chain Level as a Candidate Biomarker for Glaucoma Disease Staging," "Evaluating RetFound: A Foundation Model for Glaucoma Detection Using Macular OCT Images," "Swept Source Optical Coherence Tomography Microvascular Dropout as a Potential Differentiator Between Perimetric Glaucoma and Degenerative Myopia (ARVO) poster, Salt Lake City, 5/25
- 2) "Multimodal Artificial Intelligence Models Predicting Progression to Surgery Using Electronic Health Records and Retinal Nerve Fiber Layer Scans" (ARVO) poster, Seattle – 5/7/24
- 3) "Digitization of Humphrey Field Analyzer Reports Into CSV File", "Timing of Intraocular Pressure Measurements for Patients with Primary Open-Angle Glaucoma and/or Ocular Hypertension Treated with Prostaglandin Analogs: an Academy IRIS® Registry Analysis" American Glaucoma Society, Austin 2023
- 4) "A Multi-Task Deep-Learning System to Classify Diabetic Macular Edema for Different Optical Coherence Tomography Devices: A Multi-Center Analysis" Macula Society, Berlin 2022
- 5) "Correlated Changes in Retinal Thickness and Visuomotor Function in Asymptomatic Hydroxychloroquine Toxicity Patients", "Repeatability and Correlation of a Virtual Reality Perimeter with Standard Automated Perimetry in Glaucoma Patients", "Feasibility of Glaucoma

- Home Self Testing Using a Virtual Reality Visual Field Test Combined with Home Tonometry" (ARVO) poster, Denver - 5/1/22
- 6) "Comparison of Virtual Reality (PalmScan VF2000) Visual Fields Analyzer with Humphrey Visual Field in Glaucoma Patients", "A Multi-Task Deep Learning System to Detect Diabetic Macular Edema and Retinal Abnormalities for Different Optical Coherence Tomography Devices," "An Open-Label Phase Ib Study to Evaluate Retinal Imaging After Short-term Use of the Balance Goggles System (BGS) in Patients with Glaucoma", "Intervisit Repeatability of a Combined Retinal Ganglion Cell Index in Glaucoma" The Association for Research and Vision in Ophthalmology (ARVO) poster, Baltimore - 5/3/20 cancelled
 - 7) "Novel Deep Learning Algorithm Identifying Glaucoma Using Cirrus OCT 3D ONH Cube Scans" American Academy of Ophthalmology (AAO) EPoster, San Francisco – 10/12/19
 - 8) Wang SY, Hernandez-Boussard, T, Chang RT, Pershing S. "Understanding Patient Attitudes Toward Multifocal Intraocular Lenses Through Natural Language Processing of Online Medical Forums." Accepted MedInfo 2019
 - 9) "Refractive Outcomes of Patients Undergoing Combined Cataract Extraction / Cypass Supraciliary Micro-Stent Versus Cataract Surgery Alone" American Society of Cataract and Refractive Surgery (ASCRS) Paper, San Diego - 5/5/19
 - 10) "Diagnostic Assessment of RNFL Segmentation using a Hybrid Deep Learning Approach," "Novel Deep Learning Based Algorithm for Macula and Optic Nerve Head Segmentation versus Cirrus Optical Coherence Tomography in Identifying Glaucoma," "Smartphone-based Retinal Imaging to Characterize Early Functional Retinal Vascular Changes in Diabetic Retinopathy," "A 3D Deep Learning System for Detecting Glaucomatous Optic Neuropathy from Volumetric and En Face Optical Coherence Tomography Scans," "Recombinant human nerve growth factor (rhNGF) eye drops for glaucoma: Results from a prospective double -masked randomized controlled trial" The Association for Research and Vision in Ophthalmology (ARVO) poster, Vancouver - 4/28/19
 - 11) "A Deep Learning System for Detecting Glaucomatous Optic Neuropathy and Age-Related Macular Degeneration Based on Color Fundus Photographs" World Ophthalmology Congress (WOC) Poster, Barcelona – 6/16/18
 - 12) "Effectiveness of Trabecular Microbypass Stent Implantation (iStent) on Intraocular Pressure in Moderate and Severe Glaucoma: One Year Results" European Glaucoma Society (EGS) Poster, Florence – 5/19/18
 - 13) "Automatic Identification of Referral-Warranted Diabetic Retinopathy Using Deep Learning on Mobile Phone Images," "Characteristics of Cataract Surgery Patients Influencing Press Ganey patient satisfaction Scores," "Comparison of Automated Self-Refraction Using NETRA with Table-Mounted Autorefractor and Subjective Refraction in an Academic Optometry Clinic," "Reduction of Ocular Antihypertensive Medication Usage After IStent Implantation in a Large U.S. Managed Care Network," The Association for Research and Vision in Ophthalmology (ARVO) poster, Honolulu – 5/7/18
 - 14) "Demographic and Postoperative Clinic Visit Factors Impacting Patients' Likelihood of Recommending Providers," "Evaluating Press Ganey Patient Satisfaction Scores in Postoperative Cataract and Glaucoma Patients: Are Patient Satisfaction Scores a Reliable Vehicle to Measure Quality of Care?" American Academy of Ophthalmology (AAO) paper – 2017
 - 15) Lee W, Fisher AC, **Chang RT**. "Comparison of Endoscopic Cyclophotocoagulation Versus Micropulse Transscleral Cyclophotocoagulation in the Treatment of Glaucoma." Stanford Ophthalmology Day Presentation, 6/24/17.
 - 16) Russakoff DB, Oakley JD, **Chang R**. "Deep Convolutional Neural Networks for Automated OCT Pathology Recognition." The Association for Research and Vision in Ophthalmology (ARVO) poster, Baltimore – 5/7/17.
 - 17) Au TJ, Lee M, Singh K, **Chang R**. "Three Year Follow-up of Serial Structural and Function Testing in High Myopes Without Elevated Intraocular Pressure." The Association for Research and Vision in Ophthalmology (ARVO) poster, Baltimore – 5/10/17.
 - 18) Wang JK, **Chang RT**, Pamnani R, Capasso R, "An Extended Hackathon Model to Teach Core Concepts of Biodesign" 3rd Annual Stanford Global Health Research Convening – 1/18/17
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- 20) Ludwig CA, Newsom M, **Chang RT**. Timing and Quality of Smartphone Adapter Photos to Screen the Anterior Segment of 751 Healthy Students in India, Association for Clinical and Translational Science poster, Washington DC – 4/13/16
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 - 24) “Design and Rapid Prototyping of a Novel 3-D Printed Smartphone Lens Adapter System” American Academy of Ophthalmology (AAO) Poster PO328, Chicago – 10/20/14
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 - 28) Choi D, Pershing S, Vaziri K, Moshfeghi D, **Chang RT**. “Increasing Incidence of Conjunctival Lesion Excisions After Popularization of Prostaglandin Analogs” American Society of Cataract and Refractive Surgery (ASCRS) Presentation, Boston – 4/26/14
 - 29) “Analyzing Shape Parameterization of SD-OCT Optic Nerve Head Images in High Myopes as a Predictor of Visual Field Defects,” “Cirrus SD-OCT Ganglion Cell Analysis Segmentation Errors in High Myopes,” “Clinical Utility of Web-based Office and Home Peristat for the Detection of Visual Field Defects in Glaucoma Patients,” “Comparison of Online Perimetry and Humphrey Visual Field in Patients with Glaucoma,” “Diagnostic Efficacy of RNFL Thickness Sectors for Glaucoma Detection” The Association for Research and Vision in Ophthalmology (ARVO) posters, Seattle – 5/6/13-5/8/13
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 - 32) Lee R, **Chang RT**, Wong I, and Singh K. Novel Corneal Biomechanical Parameters in Glaucoma Eyes vs. Normal Eyes. American Glaucoma Society (AGS) Poster Presentation, San Francisco – 3/1/13
 - 33) Lin SR, Lai IN, **Chang RT**, Dutta S, Singh K. Comparison of Fixation Target Stability for RareBit and Humphrey Visual Field Tests, European Glaucoma Society (EGS) Poster Presentation, Copenhagen, Denmark – 6/20/12
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D. Grants and Media

Title	Granting Agency	Role	Dates
<i>Empowering a Future-Ready World: Exploring AI and Generative Models in Healthcare</i>	<i>Stanford Center Peking Univ. Graduate Seminar Program Award</i>	<i>PI</i>	<i>2025</i>
<i>Longitudinal Aqueous Humor NFL in Glaucoma</i>	<i>Genentech</i>	<i>PI</i>	<i>2025-2026</i>
<i>Glaucoma Biorepository Study</i>	<i>Calico</i>	<i>PI</i>	<i>2025-2026</i>
<i>Swept Source OCT Imaging with the DREAM VG-OCT</i>	<i>Intalight</i>	<i>PI</i>	<i>2023-2024</i>
<i>Comparing NGENUITY vs conventional microscope in a new Hydrus user</i>	<i>Alcon</i>	<i>PI</i>	<i>2022-2024</i>
<i>Biorepository in Glaucoma</i>	<i>Genentech</i>	<i>PI</i>	<i>2021-2023</i>
<i>An Open-Label Phase I Study to Evaluate the Correlation and Repeatability of Olleyes with Standard Automated Perimetry in Glaucoma</i>	<i>Genentech</i>	<i>PI</i>	<i>2021-2022</i>
<i>Machine Learning for Eye Care in Nepal: Expanding Access and Improving Care</i>	<i>Stanford Center for Innovation in Global Health Seed 2017</i>	<i>PI</i>	<i>2018-2019</i>
<i>Development and Evaluation of a Compact, Accessible Medical Innovation Curriculum for Undergraduate and Graduate Students</i>	<i>Stanford UAR</i>	<i>PI</i>	<i>Oct 2017</i>
<i>How Can Machine Learning Help Solve Problems in Glaucoma?</i>	<i>Santen</i>	<i>PI</i>	<i>Aug 2017-2019</i>
<i>Designing a Wearable Personal Air Pollution Sensor and Filter Device for China and Beyond</i>	<i>Spectrum Medtech 2016</i>	<i>Co-PI</i>	<i>Jan-Dec 2017</i>
<i>Digital Health Bootcamp Beijing Co-Sponsored with Peking University</i>	<i>Stanford Center Peking Univ. Graduate Seminar Program Award</i>	<i>PI</i>	<i>Aug 2016</i>
<i>Glaucoma Humphrey Field Analyzer / Optical Coherence Tomography Specificity</i>	<i>Carl Zeiss Meditec</i>	<i>PI</i>	<i>Feb-Jun 2017</i>

Digital Health Bootcamp Beijing	Stanford Center Peking Univ. Graduate Seminar Program Award	PI	June-July 2015
091 The Efficacy and Safety of Bimatoprost SR in Patients With Open-angle Glaucoma or Ocular Hypertension	Allergan	Co-PI	2015-2019
Potential Benefits of Circular 2D Polarized LCD TV on Improvement of Eye Fatigue and Eye Movement Control	TCL Research America	Co-PI	Aug 2014-2016
EyeGo Smartphone Ocular Imaging Feasibility Study in China	Stanford Center Peking Univ. Faculty Fellowship Program Award	PI	May-June 2014
EyeGo: Remote Consultation Through Smartphone-Based Ophthalmic Imaging	Stanford Spectrum Medtech	PI	2014
3D printed Smartphone-based Ophthalmic Imaging System for Remote Consultation and Triage	Stanford Society of Physician Scholars (SSPS)	PI	2014
769 A Randomized, Multicenter, Double-Masked, Parallel-Group Study Comparing the Safety and Efficacy of BOL-303259-X 0.024% With Timolol 0.5% in Subjects With Open-Angle Glaucoma or Ocular Hypertension – APOLLO phase 3 study	Bausch and Lomb	PI	2013-2014
Peristat Online Visual Field Screening for Glaucoma	Bio-X Undergraduate Summer Research Program	PI	June-July 2012
Employing Gaze-Tracking Analysis to Determine How Subjects Gather Visual Information During Field Testing	America Glaucoma Society MAPS	PI	May 2010-2011
Cirrus SD OCT – Ganglion Cell Normative Database Collection	Carl Zeiss Meditec	PI	Jan-Apr 2011

PATENTS

- 1) Perkins Coie Single Use Vials for Administering Eye Drops, US Provisional No 62/350,654, filed 6/15/16. Converted by Perkins Coie PCT/US2017/037665, 6/15/17.
- 2) Stanford Office of Technology and Licensing: S16-026-029, US Provisional No 62/289,445, 62/289,457, 62/289,480, 62/289,546, Systems and Methods for Respiratory Health Management, filed 2/1/16. Converted by Wilson Sonsini, PCT/US2017/015816, 2/9/17.
- 3) Stanford Office of Technology and Licensing: S13-195/PCT, US Patent: 14/893,951 Modular Lens Adapters for Mobile Anterior and Posterior Segment Ophthalmoscopy, filed 5/30/14 based on PCT/US2014/040203. International PCT/US2016/024265. Licensed 7/10/15. Granted 9,706,718
- 4) Stanford Office of Technology and Licensing: S15-099/PCT, US Patent: 62/138,271 Modular Smartphone Adapters for Mobile Ophthalmoscopy, filed 3/25/15. Licensed 7/10/15.

EDITORIAL REVIEW SERVICE

- 1) National Eye Institute (NEI) Invited Reviewer – 8/15/24
- 2) National Eye Institute (NEI) ZEY1VSN04 Invited Reviewer– 7/29/21
- 3) National Eye Institute (NEI) ZEY1VSN01 Invited Reviewer - 3/16/20

- 4) National Eye Institute (NEI) ZEY1VSN05 Invited Reviewer - 3/25/19
- 5) Invited Reviewer for the Austrian Science Fund Proposal - 12/27/18
- 6) National Eye Institute (NEI) ZEY1VSN01 Invited Reviewer - 10/17/18
- 7) National Eye Institute (NEI) ZEY1VSN04 Invited Reviewer – 7/26/17
- 8) Bay Area Global Health Innovation Challenge Invited Reviewer – 4/3/17
- 9) Stanford Learning Design and Technology (LDT) Invited Reviewer – 7/31/15
- 10) National Eye Institute (NEI) ZEY1VSN01 Invited Reviewer – 3/17/15
- 11) National Eye Institute (NEI) Audacious Goals ZEY1VSN05 Invited Reviewer – 12/11/14
- 12) Editorial Advisory Board for Advances in Therapy – 10/12/09 to present
- 13) British Medical Journal Best Practice Expert Contributor – 7/12/13 to present
- 14) Ad Hoc Reviewer for Ophthalmology, Journal of Cataract and Refractive Surgery, British Journal of Ophthalmology, and Eye – 2011-2020

DIGITAL MEDIA AND INNOVATION COURSES

- 1) Empowering a Future Ready World: Exploring AI And Generative Models Seminar
<https://solo.stanford.edu/opportunities/scpku-summer-seminar-empowering-future-ready-world-exploring-ai-and-generative-models>, 8/4/25
- 2) Digitising the vision test, Perspectives Lancet
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- 3) Eye, Robot: Artificial Intelligence Dramatically Improves Accuracy of Classic Eye Exam
<https://www.sciencemag.org/news/2020/06/eye-robot-artificial-intelligence-dramatically-improves-accuracy-classic-eye-exam>, 6/3/20
- 4) Building a World Where Data Privacy Exists Online
<https://www.nytimes.com/2019/11/10/technology/artificial-intelligence-dawn-song.html>, 11/10/19
- 5) Three Days in Mandalay on the Flying Eye Hospital,
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- 6) AI Needs Your Data and You Should Get Paid For It, <https://www.wired.com/story/ai-needs-data-you-should-get-paid/>, 8/8/19
- 7) Digital Health Innovation Course Leader, Dreamcatchers MedTech Hackathon in Hong Kong 2019, <https://www.dreamcatchers.hku.hk/?p=57491>, 6/24/19-6/30/19
- 8) Eye Ear Nose Throat Innovation Course Co-Organizer, <http://eent.stanford.edu>, 5/16-19/19
- 9) Stanford University Biodesign 374 Medtech Innovation Class Judge, 3/12/19
- 10) Integration of new technology may improve ophthalmologic care, 10/29/18
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- 18) “Artificial intelligence will bring ‘reality’ to glaucoma diagnosis”
<http://ophthalmologytimes.modernmedicine.com/ophthalmologytimes/news/artificial-intelligence-will-bring-reality-glaucoma-diagnosis> 7/15/17

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- 22) Two weeks in China: Lessons on innovating abroad <http://scopeblog.stanford.edu/2016/11/16/two-weeks-in-china-lessons-on-innovating-abroad/>, 11/16/16
- 23) Stanford's first health++ Hackathon brings health care innovators together <http://news.stanford.edu/2016/11/16/stanfords-first-health-hackathon-brings-health-care-innovators-together/>, 11/16/16
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COMMUNITY SERVICE

- 1) Advisor, AI for Eye - 2019-2020
- 2) Member of Orbis, Flying Eye Hospital – 2017 to present
- 3) SHIFT Stanford Student Organization Advisor <http://shift.stanford.edu> – 4/17/15 to 2019
- 4) Pacific Free Clinic Volunteer Stanford Faculty – 2015
- 5) Arbor Free Clinic Volunteer Stanford Faculty – 2014
- 6) Healthy Scholars Foundation Advisory Board – 2014 to 2015
- 7) Keepyoursight.org Foundation Volunteer Technology Advisor – 7/31/13 to 3/31/14
- 8) Stanford Immersion in Medicine Series (SIMS) Shadowing Program Mentor – 2014 to present
- 9) Faculty Mentor for Stanford Class Med 275B: Biomedical Innovation Incubator – 2014 to 2019
- 10) Faculty Mentor for Ophthalmology Electives OPHT 300A, 398A – 2014 to present
- 11) Faculty Mentor for Stanford Class BioE 273: Biodesign for Mobile Health – 2015 to present
- 12) Lifeline Express Foundation Volunteer Educator, annual trips, China – 2010 to present
- 13) Vision Health Fair Volunteer and Disc Photo Reading Center Volunteer, Prevent Blindness Northern California – 2010, 2014
- 14) International Aid Volunteer, Tema Eye Clinic, Ghana – July 2008