

Trent J. Bowen, MD

PRACTICE

Saguaro Ophthalmology, LLC
1760 E Pecos Rd. Suite 201
Gilbert, AZ 85295

EDUCATION AND TRAINING

Baylor College of Medicine, Glaucoma Fellowship, 2020 to 2021
University of Texas Southwestern, Ophthalmology Residency, 2017 to 2020
University of Arizona College of Medicine – Phoenix, Preliminary Internal Medicine Internship, 2016 to 2017
University of Arizona College of Medicine – Tucson, M.D., Distinction in Research/Community Service, Class of 2016
Barrett, The Honors College at Arizona State University, B.S. in Physics with a Minor in Biochemistry,
3.94 GPA, Summa Cum Laude, Class of 2012

RESEARCH EXPERIENCE

Resident Research, Department of Ophthalmology at the University of Texas Southwestern, August 2017 to July 2020
First Year Study: Demonstrated the long-term intraocular pressure lowering effect of femtosecond laser assisted cataract surgery in comparison to standard manual cataract surgery.
Second and Third Year Study: Demonstrated that intraocular pressure goals for patients with severe secondary glaucoma do not need to be as low as patients with advanced primary open angle glaucoma to prevent visual field progression in comparison to the classic findings from the Advanced Glaucoma Intervention Study (AGIS).
Medical Student Research, Department of Ophthalmology at the University of Arizona, January 2013 to May 2016
Examined the role of myocilin in the pathogenesis of glaucoma and controlling intraocular pressure through studying its involvement in cellular signaling and exosome release.
Undergraduate Research, Single Molecule Biophysics at Arizona State University, November 2009 to May 2012
Studied how methylation, a structural alteration to DNA, affects higher order chromosomal organization with atomic force microscopy to develop a model for gene silencing.
Summer Undergraduate Research Internship, National Cancer Institute, June 2011 to August 2011
Analyzed epigenetic factors associated with transcription of the centromere to further the understanding of centromere formation within the Chromatin Structure and Epigenetic Mechanisms Unit.
Independent Undergraduate Research, Emmanuel Eye Centre, Accra, Ghana, July 2010
Performed an IRB approved study with personal interviews with glaucoma patients about their knowledge of glaucoma, barriers to medical care, and feelings about their vision treatment to learn about barriers to vision care.

NON-RESEARCH EXPERIENCE

Osmosis Ophthalmology Team Contributor, Osmosis.org, June 2014 to July 2014
Contributed original ophthalmology practice questions for the Osmosis question platform designed to aid medical students in studying for the USMLE Step 1 board examination.
Sight Savers Coordinator, University of Arizona College of Medicine, January 2013 to April 2014
Organized monthly vision screenings for underinsured patients in Tucson, Arizona.
Women's Clinic Lab Coordinator, University of Arizona College of Medicine, January 2013 to April 2014
Performed lab tests at the student-run clinic for the women of Emerge! Center Against Domestic Abuse.
CPR Instructor, University of Arizona College of Medicine, September 2012 to April 2014
Instructed 17 chest compression only CPR classes within the Tucson community with the REACT (Resuscitation Education and CPR Training) group, a student run organization.
Global Health Forum HIV/AIDS Week Committee Chair, August 2013 to December 2013
Organized two lectures, a film showing, and a fundraiser (\$300 for the Southern Arizona AIDS Foundation) for the 2013 World AIDS Day.
Emergency Room Scribe, Banner Boswell and Del E. Webb Medical Centers, August 2011 to February 2012
Assisted emergency physicians in maintaining the medical record of each patient's stay by recording pertinent history, noting the physical exam findings, and managing the chart.
Teaching Assistant, ASU Department of Physics, January 2011 to May 2011
Instructed two sections of a university level physics lab and aided students in scientific lab report writing and developing strategies to solving classical physics problems.
Volunteer EMT, Student Emergency Medical Services, September 2010 to May 2011
Provided EMT support at community and sports events at ASU.
Optometric Technician, Farr Eyecare Group, January 2009 to January 2011
Prepared patients to see the doctor by measuring visual acuities, recording a medical history, and performing several other prescreening measurements.

Emergency Room Volunteer, Maricopa Medical Center, August 2010 to December 2010

Assisted emergency room technicians in preparing rooms for patients.

Unite For Sight Global Impact Fellow, Ghana, July 2010

Fundraised \$1775 for cataract surgeries, collected 500 pairs of reading glasses, and assisted vision care outreaches in rural areas of Ghana to help local Ghanaian vision care providers serve patients without access to care.

Ophthalmology Intern, Precision Eyecare, August 2009 to December 2009

Performed prescreening tests for Dr. Chercoun, a cornea specialist and ophthalmologist, by recording patient medical history, visual fields testing, and visual acuity measurement.

FUNDING

Newsome and Mildred Holesapple Estate to Benefit Outstanding Medical Student Research Award, 2016

\$2,000 award for research in the role of myocilin in cellular signaling and pathogenesis of glaucoma.

Alpha Omega Alpha Carolyn L. Kuckein Student Research Fellowship Award, 2014

\$5,000 grant to investigate the role of myocilin in cellular signaling and pathogenesis of glaucoma.

Arizona Research Labs Confocal Microscopy Grant, May 2013 to September 2013

\$1,000 research grant for training and use of a confocal microscope at the University of Arizona.

Medical Student Research Program, June 2013 to August 2013

Summer program providing funding for my glaucoma research studying myocilin and a curriculum on medical ignorance and proposing research questions.

NASA Space Grant Program, August 2010 to May 2011

Program providing funding for my methylation and DNA structure research and service opportunities in community science education.

ORAL PRESENTATIONS

“Clinical Outcomes of Ab Externo Versus Ab Interno Xen Gel Stent” Baylor College of Medicine Resident/Fellow Research Day (June 9, 2021)

“Intraocular Pressure Goals in Severe Secondary Glaucoma” University of Texas Southwestern Ophthalmology 39th Annual Resident and Alumni Day (June 1, 2019)

10 separate unique and challenging case presentations at UT Southwestern Grand Rounds and Bimonthly Conferences, (2017 – 2019)

“Examining Myocilin and Its Role in the Pathogenesis of Glaucoma” University of Arizona Medical Student Research Distinction Track Symposium (March 9, 2016)

“Optic Nerve Drusen” University of Arizona Department of Ophthalmology and Vision Science Grand Rounds (October 21, 2015)

“Drug Induced Uveitis” Duke University Department of Ophthalmology Grand Rounds (September 23, 2015)

“A Case of a Blonde Fundus” Oregon Health and Sciences University Department of Ophthalmology Grand Rounds (August 18, 2015)

“Examining Myocilin’s Role in Receptor Endocytosis” University of Arizona Medical Student Research Program Symposium (July 31, 2013)

“Examining Preventive Glaucoma Care in Accra, Ghana” Unite For Sight Global Health and Innovation Conference at Yale University (April 17, 2011) and at the ASU School of Human Evolution and Social Change Research Symposium (April 29, 2011)

“Studying Methylated Chromatin with Atomic Force Microscopy Recognition Imaging” NASA Space Grant Research Symposium (April 9, 2011)

POSTER PRESENTATIONS

Bowen, T.J., Vigil, E., Nathan, N. “Intraocular Pressure Goals in Severe Secondary Glaucoma” American Glaucoma Society 2020 Annual Meeting (February 28, 2020)

Bowen, T.J., Basirat, A., Wiles, J., Whitson, J. “The Effect of Femtosecond Laser Assisted Cataract Surgery on Intraocular Pressure” University of Texas Southwestern Ophthalmology 38th Annual Resident and Alumni Day (June 2, 2018)

Bowen, T.J., Congrove, N.R., Stamer, D.W., McKay, B.S. “Glaucoma Causing Mutations Alter Cell Signaling” University of Arizona Graduate Medical Education Scholarly Day (May 19, 2015)

Bowen, T.J., Congrove, N.R., Stamer, D.W., McKay, B.S. “Myocilin Mutations Alter GPCR Endocytosis” Association for Research and Vision in Ophthalmology Annual Meeting (May 6, 2014)

Bowen, T.J., Congrove, N.R., McKay, B.S. “Role of Myocilin in Receptor Endocytosis” American Federation for Medical Research Western Regional Meeting (January 25, 2014)

Bowen, T.J., Ursea, R. “The Eye: The Window to Systemic Disease” The University of Arizona Frontiers in Biomedical Research Poster Forum (October 30, 2013)

- Bowen, T.J.**, Quenet, D., Dalal, Y. "Epigenetic and Transcriptional Factors at the Centromere" National Institutes of Health Summer Internship Program Poster Forum (August 4, 2011)
- Bowen, T.J.** "Examining Preventive Glaucoma Vision Care in Accra, Ghana" American Association for the Advancement of Science Annual Meeting (February 19, 2011)

PUBLICATIONS

- Osa A.A., **Bowen, T.J.**, Whitson, J. "Charles Bonnet Syndrome in a Patient with Parkinson's Disease and Bilateral Posterior Capsule Opacification." *International Medical Case Reports Journal*. January 2020.
- Ursea, R., De Castro, D., **Bowen, T.J.**, Chan, C. "The Role of Conjunctival Biopsy in the Diagnosis of Granulomatosis with Polyangiitis," *Journal of Ophthalmic Inflammation and Infection*. January 2015.
- Locke, C.J., Congrove, N.R., Dismuke, W.M., **Bowen, T.J.**, Stamer, W.D., McKay, B.S. "Controlled Exosome Release From the Retinal Pigment Epithelium In Situ," *Experimental Eye Research*. October 2014.
- McKay, B.S., Congrove, N.R., Johnson, A.A., Dismuke, W.M., **Bowen, T.J.**, Stamer, W.D. "A Role for Myocilin in Receptor-Mediated Endocytosis," *PLoS ONE*. December 2013.
- Bowen, T.J.** "Assessing the Value of Preventive Ophthalmologic Care in Ghana," *University of British Columbia Medical Journal*. September 2011.
- Bowen, T.** "The Value of Preventive Care in Ghana," *ASU Triple Helix Science in Society Review*. Spring 2011.

UNDERGRADUATE HONORS THESIS

- "The Value Between Patients, Physicians, and Medicine," defended October 2011.

HONORS

- 1st Place Baylor College of Medicine Resident/Fellow Research Day Kirk R. Wilhelmus Research Award, Spring 2021
- 1st Place University of Texas Southwestern Alumni Day George E. Holladay Prize for Research, Spring 2020
- 1st Place University of Texas Southwestern Alumni Day George E. Holladay Prize for Research, Spring 2019
- University of Arizona College of Medicine Class of 2016 Outstanding Senior Award, Spring 2016
- University of Arizona College of Medicine Alpha Omega Alpha (AOA) Honor Society Member, Fall 2015
- University of Arizona College of Medicine Gold Humanism Honor Society (GHHS) Member, Spring 2015
- University of Arizona College of Medicine Award of Excellence Scholarship, Fall 2012 – Spring 2016
- Commitment to Underserved People Program Leadership Award, Spring 2014
- AAAS Student Poster Competition Honorable Mention in Social Sciences, Spring 2011
- Arek Dieterle Memorial Award in Physics, Spring 2011
- Alma and Ruth Wilson Scholarship, Spring 2011
- Lux Creative Review Art Award, Spring 2011
- University of British Columbia Think! Speak! Inspire! Global Health Essay Contest Winner, Spring 2011
- ASU President's Scholarship, Fall 2008 – Spring 2012
- ASU College of Liberal Arts and Sciences Dean's List, Fall 2008–Spring 2012
- ELKS Foundation Good Student Scholarship, 2008 – 2009