# Paras Vora

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## Education & Training

**Washington University in St. Louis** — **St. Louis, MO**
*BS, Biomedical Engineering and Computer Science* — *Aug. 2011–May 2015*

**University of Kentucky College of Medicine** — **Lexington, KY**
*MD* — *Jul. 2015–Exp. May 2020*

**University of Kentucky Department of Internal Medicine** — **Lexington, KY**
*Internship* — *Exp. Jul. 2020–Jul. 2021*

**University of Kentucky Department of Ophthalmology and Visual Sciences** — **Lexington, KY**
*Residency* — *Jul. 2021–Exp. Jul. 2024*

## Honors & Awards

**Development and Innovation Award |** "Real-Time Stereoscopic Slit Lamp Videography" — **Lexington, KY**
*University of Kentucky Global Ophthalmology | Dr. Eric Higgins* — *April 2019*

**Best Poster Award |** "Using Artificial Intelligence to Facilitate Eye Disease Detection" — **Lexington, KY**
*Markey Cancer Center Research Day | Dr. Romulo Albuquerque* — *May 2018*
*Clinical and Translational Science - Graduate Students Section*

**Outstanding Leadership & Community Service Award |** University of Kentucky — **Lexington, KY**
*Salvation Army Clinic* — *Apr. 2017*

**Medical Student Travel Scholarship |** Society of Interventional Radiology — **Washington, DC**
*Annual Scientific Meeting* — *Mar. 2017*

## Research & Intellectual Contributions

### Research Projects

Student Researcher — **Lexington, KY**
*Advisor: Eric Higgins, MD, University of Kentucky* — *Dec. 2019–Present*
*Department of Ophthalmology and Visual Sciences*
**Project: Semantic Vessel and Lesion Segmentation in Diabetic Retinopathy**

Student Researcher — **Lexington, KY**
*Advisor: Eric Higgins, MD, University of Kentucky* — *Jul. 2019–Present*
*Department of Ophthalmology and Visual Sciences*
**Project: Low-Cost Nonmydriatic Fundus Camera - A 2019 Update**

Student Researcher — **Lexington, KY**
*Advisor: Eric Higgins, MD, University of Kentucky* — *Apr. 2019–Present*
*Department of Ophthalmology and Visual Sciences*
**Project: Teaching Ophthalmology in 3D/VR**

Student Researcher — **Lexington, KY**
*Advisor: Eric Higgins, MD, University of Kentucky* — *Apr. 2019–Present*
*Department of Ophthalmology and Visual Sciences*
**Project: Real-Time Stereoscopic Slit Lamp Videography**

NIH TL1 Research Trainee **Lexington, KY**
*Advisor: Romulo Albuquerque, DDS, MD/PhD, University of Kentucky* *Jun. 2018*
*Department of Ophthalmology and Visual Sciences*
**Project: 3D-Printed Transilluminating Scleral Depressor for Vitrectomy Surgery**

NIH TL1 Research Trainee **Lexington, KY**
*Advisor: Romulo Albuquerque, DDS, MD/PhD, University of Kentucky* *Jun. 2017–Jun. 2019*
*Department of Ophthalmology and Visual Sciences*
**Project: Non-Contrast Retinal Video Processing to Assess Retinal and Choroidal Perfusion**

NIH TL1 Research Trainee **Lexington, KY**
*Advisor: Romulo Albuquerque, DDS, MD/PhD, University of Kentucky* *Aug. 2017–Jun. 2018*
*Department of Ophthalmology and Visual Sciences*
**Project: Development of Dry Eye Syndrome and Corneal Sensitivity after Vitreoretinal Surgery**

Researcher **St. Louis, MO**
*Advisors: Jennifer Silva, MD and Jonathan Silva, PhD* *May 2016–Aug. 2016*
*Washington University School of Medicine, Department of Pediatric Cardiology*
*Washington University in St. Louis, Department of Biomedical Engineering*
**Project: Augmented Reality Applications for Cardiac Catheterization Procedures**

Student Researcher, Research in Surgery Elective **Lexington, KY**
*Advisor: Romulo Albuquerque, DDS, MD/PhD, University of Kentucky* *Jan. 2016–Jun. 2016*
*Department of Ophthalmology and Visual Sciences*
**Project: Conditional Genetic Knock-out in Trigeminal Ganglia Following Corneal Nerve Injury**

Student Researcher **St. Louis, MO**
*Advisor: Deborah Veis (Novack), MD/PhD, Washington University School of Medicine* *August 2013–May 2014*
*Division of Bone and Mineral Diseases*
**Project: Effect of Low Dose Hydrogen Peroxide on Bone Turnover**

Summer Undergraduate Research Fellow **St. Louis, MO**
*Advisor: Deborah Veis (Novack), MD/PhD, Washington University School of Medicine* *May 2013–August 2013*
*Division of Bone and Mineral Diseases*
**Project: The Role of TGF-Beta in RANKL-Induced Osteoclastogenesis**

Student Researcher **St. Louis, MO**
*Advisor: Deborah Veis (Novack), MD/PhD, Washington University School of Medicine* *Aug. 2012–May 2013*
*Division of Bone and Mineral Diseases*
**Project: Effect of IAP Antagonists on Bone Turnover**

Summer Research Fellow **Owensboro, KY**
*Advisor: Uma Sankar, PhD, University of Louisville* *May 2012–Aug. 2012*
**Project: Lentiviral Cloning of GFER in Cancer Cell Lines**

## Peer-Reviewed Publications

[1] J. Cho, N. Bell, G. Botzet, **P. Vora**, B. J. Fowler, R. Donahue, H. Bush, B. K. Taylor, and R. J. C. Albuquerque. "Latent Sensitization in a Mouse Model of Ocular Neuropathic Pain". In: *Translational Vision Science & Technology* 8.2 (Mar. 2019), pp. 6–6. ISSN: 2164-2591.

[2] C. Yang, J. L. Davis, R. Zeng, **P. Vora**, X. Su, L. I. Collins, S. Vangveravong, R. H. Mach, D. Piwnica-Worms, K. N. Weilbaecher, R. Faccio, and D. V. Novack. "Antagonism of Inhibitor of Apoptosis Proteins Increases Bone Metastasis via Unexpected Osteoclast Activation". In: *Cancer Discovery* (2012). ISSN: 2159-8274.

## Abstract Presentations

[1] N. Fowler, R. Albuquerque, J. Cho, N. Bell, **P. Vora**, and G. Botzet. "Naltrexone as a Diagnostic Tool in Ocular Neuropathic Pain". In: *Journal of Clinical and Translational Science* 3.s1 (Mar. 2019), pp. 16–17.

[2] **P. Vora** and R. J. Albuquerque. "Using Artificial Intelligence to Facilitate Eye Disease Detection". In: *Markey Cancer Center Research Day*. Lexington, Kentucky, May 2018.

[3] **P. Vora**, N. Bell, J. Cho, G. Botzet, and R. Albuquerque. "Visualizing Retinal and Choroidal Blood Flow Noninvasively". In: *Association for Research in Vision and Ophthalmology Annual Meeting*. Honolulu, Hawaii, May 2018.

[4] R. Albuquerque, J. Cho, N. Bell, G. Botzet, **P. Vora**, and B. Taylor. "Peripheral Latent Sensitization Masks Chronic Ocular Pain". In: *Association for Research in Vision and Ophthalmology Annual Meeting*. Honolulu, Hawaii, May 2018.

[5] **P. Vora**, N. Bell, J. Cho, G. Botzet, and R. Albuquerque. "Optimizing a technique for visualizing retinal and choroidal blood flow noninvasively". In: *Journal of Clinical and Translational Science* 2.S1 (Apr. 2018), pp. 22–23.

[6] R. Patel, **P. Vora**, N. Bell, J. Cho, C. Williams, and R. Albuquerque. "Development of Dry Eye Symptoms and Corneal Sensitivity after Ocular Surgeries". In: *13th Annual Center for Clinical and Translational Science Spring Conference*. Lexington, Kentucky, Apr. 2018.

[7] **P. Vora**, N. Bell, J. Cho, G. Botzet, and R. Albuquerque. "Non-Contrast Retinal Video Processing to Reveal Hidden Changes". In: *AOA Groves Memorial Student Research Symposium*. Lexington, Kentucky, Mar. 2018.

[8] **P. Vora** and R. Albuquerque. "Eulerian Video Magnification: A Novel Approach to Assess Choroidal Blood Flow". In: *12th Annual Center for Clinical and Translational Science Spring Conference*. Lexington, Kentucky, Mar. 2017.

### Oral Presentations

[1] **P. Vora**. "Visualizing Retinal Blood Flow Noninvasively". 13th Annual Center for Clinical and Translational Science Spring Conference. Apr. 2018.

### Research Certification

**University of Kentucky Collaborative Institutional Training Initiative**
*GCP for Clinical Trials Involving Medical Devices, Biomedical Investigators and Key Personnel* *Jun. 2017–Present*

## Funding

**UK Global Ophthalmology Development & Innovation Grant** *Apr. 2019–Present*
*"Real-Time Stereoscopic Slit Lamp Videography"*

**NIH TL1 Predoctoral Clinical Research Training Fellowship** *Jun. 2017–Jun. 2018*
*"Novel Application of Eulerian Video Magnification for Assessment of Choroidal Perfusion"*

**UK Center for Clinical and Translational Science Small Grant** *Oct. 2017–Oct. 2018*
*"Retinal Video Processing for Non-Contrast Assessment of Retinal and Choroidal Perfusion"*

**Washington University Summer Undergraduate Research Fellowship** *May 2013–Aug. 2013*
*Howard Hughes Medical Institute - "Role of TGF-Beta in RANKL-Induced Osteoclastogenesis"*

## Patents

**Application**: US20190159707A1 - "System and Method for Assessment of Retinal and Choroidal Blood Flow Noninvasively Using Color Amplification," Provisional filed November 30, 2017, Non-Provisional filed November 30, 2018

## Consulting Activities

**Igneous, LLC** **Lexington, KY**
*Co-Founder* *Oct 2017–Present*
Providing technical expertise for patent-pending software algorithm to assess tissue perfusion

**SentiAR, Inc** **St. Louis, MO**
*Consultant* *Aug. 2016–Jan. 2017*
Developed and tested augmented reality applications for cardiac catheterization procedures at St. Louis Children's Hospital

## Professional Activities, Public Service & Professional Development

### Memberships

**Association for Research in Vision and Ophthalmology**: Member *2017–Present*

**American Medical Association**: Member and Delegate *2015–Present*

**Lexington Medical Society**: Member *2015–Present*

### Leadership & Service

**Ophthalmology Interest Group Executive Board** **Lexington, KY**
*Volunteer Coordinator* *May 2019– Present*
Managed medical student volunteers, attendings, and residents at the Salvation Army Ophthalmology Clinic.

**Ophthalmology Interest Group Executive Board** **Lexington, KY**
*President* *May 2017– Jun. 2018*
Formed a free student-run ophthalmology clinic at the Lexington Salvation Army. Featured articles:
- UK Healthcare Blog: https://1n.pm/Do7GF

**Ophthalmology Interest Group Executive Board** **Lexington, KY**
*Vice President* *May 2016–May 2017*
Organized informational career and specialty meetings with various ophthalmologists

**Cardiology & CT Interest Group Executive Board** **Lexington, KY**
*Secretary* *May 2016–May 2018*
Recorded meeting minutes and developed a research project database for medical students

**Ultrasound Interest Group Executive Board** **Lexington, KY**
*Technology Officer* *May 2016–May 2017*
Maintained the website, and assisted in writing the "Case of the Month"

**Salvation Army Student Run Clinic** **Lexington, KY**
*Volunteer* *Jan. 2016–Present*
Helping provide free medical care for Lexington's indigent populations

**Salvation Army Student Run Clinic** **Lexington, KY**
*Technology Officer* *Jun. 2016–Jun. 2017*
Maintained and improved the clinic website, upgraded computers and software to improve patient documentation

**Castlefest Ultrasound Conference** **Lexington, KY**
*Volunteer, Photographer* *Apr. 2017, Apr. 2018*
Photographer for the event. Also served as a live model for attendees to practice ultrasound skills

**Relay For Life Executive Steering Committee** **St. Louis, MO**
*2013-2014: Co-Chair; 2014-2015: Communications Chair* *May 2013–May 2015*
Planned and implemented the annual Relay For Life event on Washington University's campus, helping raise over $600,000 to support cancer research, treatment, and awareness

## Teaching Experience

**Mentor, Neuroscience Course** **Lexington, KY**
*University of Kentucky College of Medicine* *Feb. 2017–May 2017*
Held weekly one-on-one meetings in the Neuroscience course attended by all first year medical students

**Teaching Assistant, Bioengineering Thermodynamics Course** **St. Louis, MO**
*Washington University Department of Biomedical Engineering* *Aug. 2014–Dec. 2014*

Facilitated examination review sessions, graded problem sets and exams

## Other Creative Activity

**Machine Learning Final Project** *2017–2018*

*University of Kentucky Department of Computer Science*

For the Special Topics in Artificial Intelligence course. Implemented an active-learning based software tool in for training a machine learning model to grade diabetic retinopathy from fundus images

**Senior Design Project** *2014–2015*

*Washington University Department of Biomedical Engineering*

Developed and presented software to evaluate reading patterns via eye-tracking hardware. View the final report: http://goo.gl/1Il2Tm

**Relay For Life Event Check-In Page** *2014–2015*

*Washington University in St. Louis*

Final creative project for Rapid Prototyping course, using Javascript, jQuery, PHP, MySQL, and Bootstrap

- Project page: http://parasvora.com/relay-checkin/
- Currently being used to streamline registration and check-in at multiple large events

## Interests

**Travel Photography**: View my photos at https://goo.gl/photos/Xfr3W8DyZ1yfCSRSA

**Other Interests**: Tennis, coffee, computers/current technology, microelectronics