

Aaron S. Coyner

EDUCATION

- June 2020 (expected) **Doctor of Philosophy (PhD)** – *Oregon Health & Science University*, Portland, OR
Bioinformatics and Computational Biomedicine
Dissertation Title: Machine Learning for Disease Detection and Prediction in Retinopathy of Prematurity
Dissertation Advisory Committee: Michael F. Chiang, MD, MA, Kemal Sonmez, PhD, Jayashree Kalpathy-Cramer, PhD, J. Peter Campbell, MD
- June 2014 **Bachelor of Science (BS)** – *Pacific Lutheran University*, Tacoma, WA
Biochemistry
- August 2012 **Associate of Science (AS)** – *Pierce College*, Lakewood, WA
Chemistry

HONORS AND AWARDS

Oregon Health & Science University

June 2016 – **Present** National Library of Medicine Training Grant: T15 LM007088

Pacific Lutheran University

- Aug 2012 – June 2014 Provost Merit Scholarship
Aug 2012 – June 2014 Academic Merit Award
Aug 2012 – June 2014 Phi Theta Kappa Scholarship
Aug 2012 – June 2014 Tacoma Rainiers Scholarship
Aug 2012 – June 2014 Larson, Ludwig and Clara Scholarship

Pierce College

- Dec 2011 – Aug 2012 Phi Theta Kappa Award
Sep 2010 – Aug 2012 Dean's List

RESEARCH EXPERIENCE

- June 2016 – **Present** **PhD Candidate** – *Oregon Health & Science University*, Portland, OR
Dissertation Title: Machine Learning for Disease Detection and Prediction in Retinopathy of Prematurity
Specializations: Retinopathy of Prematurity, Deep Neural Networks, Image Analysis, Generative Adversarial Networks, Graphical User Interface Development, R, Python, JavaScript
- Aug 2014 – Dec 2016 **Research Assistant II** – *Oregon Health & Science University*, Portland, OR
Specializations: Mouse Handling, Optical Coherence Tomography, Electroretinogram, Western Blot, Immunohistochemistry, Adobe Creative Suite, R, Python, MATLAB
- Sep 2013 – May 2014 **Student Research Assistant** – *Pacific Lutheran University*, Tacoma, WA
Specializations: Polymer Synthesis, Gel, Liquid, and Flash Chromatography, FTIR, UV, and NMR Spectroscopy, IGOR Pro, MATLAB

TEACHING EXPERIENCE

- April 2019 – **Present** **Teaching Assistant** – *Oregon Health & Science University*
CS 659: Machine Learning

Sep 2018 – Dec 2018 **Teaching Assistant** – Oregon Health & Science University
MATH 630: Probability & Statistical Inference for Scientists and Engineers

June 2018 – Sep 2018 **Teaching Assistant** – Oregon Health & Science University
BSTA 525: Introduction to Biostatistics

Nov 2011 – Dec 2012 **Peer Tutor** – Pierce College
Calculus, Physics, General Chemistry, and Organic Chemistry

PATENTS

1. Chiang MF, Campbell JP, Ostmo Susan, Chan RVP, Kalpathy-Cramer J, Brown JM, Erdogmus D, Ionnidis S, **Coyner AS**. Systems, Devices, and Methods for Identifying Plus Disease Using Deep Convolutional Neural Networks. United States Patent, No. 0046-0026USP1

PEER-REVIEWED PUBLICATIONS

1. **Coyner AS**, Swan R, Brown JM, et al. Automated Fundus Image Quality Assessment in Retinopathy of Prematurity Using Deep Convolutional Neural Networks . *Ophthalmology Retina*. In press.
2. **Coyner AS**, Campbell JP, Chiang MF. Demystifying the Jargon: The Bridge between Ophthalmology and Artificial Intelligence. *Ophthalmology Retina*. In press.
3. **Coyner AS**, Swan R, Brown JM, et al. Deep Learning for Image Quality Assessment of Fundus Images in Retinopathy of Prematurity. *AMIA Annu Symp Proc*. 2018;2018:1224–1232. Published 2018 Dec 5.
4. Al-Qahtani AA, Ba-Ali S, Alabduljalil T, **Coyner AS**, et al. Scleral Pits in Choroideremia: Implications for Retinal Gene Therapy. *Retina*. 2018 Sep; 38(9): 1725–1730. doi: 10.1097/IAE.0000000000001957
5. Ku CA, Ryals RC, Jiang D, **Coyner AS**, et al. The Role of ERK1/2 Activation in Sarpogrelate-Mediated Neuroprotection. *Invest Ophthalmol Vis Sci*. 2018;59(1):462–471. doi:10.1167/iovs.17-23159
6. Ryals RC, Andrews MD, Datta S, **Coyner AS**, et al. Long-term Characterization of Retinal Degeneration in Royal College of Surgeons Rats Using Spectral-Domain Optical Coherence Tomography. *Invest Ophthalmol Vis Sci*. 2017;58(3):1378–1386. doi:10.1167/iovs.16-20363
7. **Coyner AS**, Ryals RC, Ku CA, et al. Retinal Neuroprotective Effects of Flibanserin, an FDA-Approved Dual Serotonin Receptor Agonist-Antagonist. *PLoS One*. 2016;11(7):e0159776. doi:10.1371/journal.pone.0159776
8. Tullis BE, Ryals RC, **Coyner AS**, et al. Sarpogrelate, a 5-HT_{2A} Receptor Antagonist, Protects the Retina From Light-Induced Retinopathy. *Invest Ophthalmol Vis Sci*. 2015;56(8):4560–4569. doi:10.1167/iovs.15-16378

CONFERENCE PRESENTATIONS

1. **Coyner AS**, Swan R, Brown JM, et al. Deep Learning for Image Quality Assessment of Fundus Images in Retinopathy of Prematurity. *American Medical Informatics Association Annual Symposium*. November 2018. San Francisco, CA.
2. **Coyner AS**, Swan R, Brown JM, et al. Deep Learning for Image Quality Assessment of Fundus Images in Retinopathy of Prematurity. *Association for Research in Vision and Ophthalmology Annual Conference*. May 2018. Honolulu, HI.
3. **Coyner AS**, Swan R, Kalpathy-Cramer J, et al. Automated Image Quality Assessment for Fundus Images in Retinopathy of Prematurity. *American Medical Informatics Association Annual Symposium*. November 2017. Washington, DC.
4. **Coyner AS**, Swan R, Kalpathy-Cramer J, et al. Automated Image Quality Assessment for Fundus Images in Retinopathy of Prematurity. *Association for Research in Vision and Ophthalmology Annual Conference*. May 2017. Baltimore, MD.
5. **Coyner AS**, Ryals RC, Ku CA, et al. Flibanserin, a FDA approved dual serotonin receptor agonist-antagonist, provides retinal neuroprotection from light induced damage. *2016 Association for Research in Vision and Ophthalmology Annual Conference*. May 2016. Denver, CO.

PROFESSIONAL AFFILIATIONS

2016 – Present	American Medical Informatics Association (AMIA)
2014 – Present	Association for Research in Vision and Ophthalmology (ARVO)
2012 – 2015	American Chemical Society (ACS)
2010 – 2014	Phi Theta Kappa (PTK)

VOLUNTEER EXPERIENCE

Sep 2015 – Present	Casey Outreach Van Provided optometry screening services for underserved communities in Portland, Gresham, and Hillsboro.
Aug 2013	VIDA Volunteer Services Provided dental services and patient education to underserved communities in Costa Rica and Nicaragua.
Sep 2011 – Dec 2012	Guide Dogs for the Blind Trained and raised two guide dog puppies.