

Stanford



Alfredo Dubra, PhD

Associate Professor of Ophthalmology

Bio

BIO

My interest in ophthalmology started at a very early age, motivated by my own amblyopia and hyperopia. These led me to study physics and optics, with my first research experience at undergraduate and master's level at the Applied Optics Group of the Universidad de la República in Uruguay. I then pursued my PhD work and a first postdoctoral position at the Photonics Group in Imperial College London, where I worked on instrumentation to study the topography of the tear film and adaptive optics (AO). The desire to advance AO for retinal imaging took me to the University of Rochester, where the interaction with patients affected by blinding conditions provided me with the determination to go beyond the proof-of-principle experiments after which many technologies are abandoned. Therefore, since starting my research group at the University of Rochester first, and at the Medical College of Wisconsin later and now at Stanford we have focused on the development and translation of AO and microscopy techniques into tools that can be used to address real clinical problems.

ACADEMIC APPOINTMENTS

- Associate Professor, Ophthalmology
- Member, Bio-X
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Honorary Lecturer of Ophthalmology, University College London (UK), (2013- present)
- Associate Adjunct Professor of Ophthalmology, Medical College of Wisconsin, (2016- present)

HONORS AND AWARDS

- Overseas Research Student Award, Universities UK (Ex. Committee of Vice-Chancellors & Principals) (2000)
- Career Award at the Scientific Interface, Burroughs Wellcome Fund (2008)
- Career Development Award, Research to Prevent Blindness (2012)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, The International Society for Optics and Photonics (2011 - present)
- Member, Association for Research in Vision and Ophthalmology (2001 - present)
- Member, Optical Society of America (2008 - present)

PROFESSIONAL EDUCATION

- PhD, Imperial College London, UK , Physics (2004)
- MSc, Universidad de la República, Uruguay , Physics (2000)

- BSc, Universidad de la República, Uruguay , Physics (1998)

PATENTS

- Alfredo Dubra. "United States Patent 8,226,236 Method and apparatus for imaging in an eye", University Of Rochester, May 18, 2006

LINKS

- Dubra Lab: <http://med.stanford.edu/dubralab.html>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

The optics of the eye can be thought of as an imperfect microscope objective through which the retina can be observed. Our lab uses adaptive optics, a technology originally developed to observe distant stars and galaxies to improve this microscope objective so that individual retinal and blood cells can be visualized. Moreover, we use and invent new microscopy imaging methods to reveal cellular and sub-cellular structures in the eye through a multidisciplinary approach that integrates optics, computer science, vision science, electrical engineering and other engineering disciplines.

Teaching

COURSES

2019-20

- Introduction to Fourier Optics: EE 238 (Spr)

2018-19

- Introduction to Fourier Optics: EE 238 (Spr)

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Aubrey Hargrave, Nripun Sredar

Publications

PUBLICATIONS

- **Intraobserver Repeatability and Interobserver Reproducibility of Foveal Cone Density Measurements in CNGA3- and CNGB3-Associated Achromatopsia** *TRANSLATIONAL VISION SCIENCE & TECHNOLOGY*
Georgiou, M., Litts, K. M., Singh, N., Kane, T., Patterson, E. J., Hirji, N., Kalitzeos, A., Dubra, A., Michaelides, M., Carroll, J.
2020; 9 (7)
- **Photoreceptor Structure in GNAT2-Associated Achromatopsia** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
Georgiou, M., Singh, N., Kane, T., Robson, A. G., Kalitzeos, A., Hirji, N., Webster, A. R., Dubra, A., Carroll, J., Michaelides, M.
2020; 61 (3): 40
- **Average gradient of Zernike polynomials over polygons** *Optics Express*
Akondi, V., Dubra, A.
2020; 28 (13): 18876-18886
- **ANATOMIC, GENETIC AND FUNCTIONAL PROPERTIES OF THE RETINAL CIRCULATION IN PULMONARY HYPERTENSION** *Pulmonary Circulation*
Nickel, N. P., Shamskhou, E. A., Razeen, M., Condon, D., Messentier, L., Dubra, A., Liao, Y., Zamanian, R. T., Yuan, K., de Jesus Perez, V. A.
2020
- **Advances in Retinal Imaging** *NEUROPHOTONICS*
Yi, J., Dubra, A., Farsiu, S.

2019; 6 (4)

- **Special Section Guest Editorial: Advances in Retinal Imaging.** *Neurophotonics*
Yi, J., Dubra, A., Farsiu, S.
2019; 6 (4): 041101
- **RAC-CNN: multimodal deep learning based automatic detection and classification of rod and cone photoreceptors in adaptive optics scanning light ophthalmoscope images** *BIOMEDICAL OPTICS EXPRESS*
Cunefare, D., Huckenpahler, A. L., Patterson, E. J., Dubra, A., Carroll, J., Farsiu, S.
2019; 10 (8): 3815–32
- **Quantifying nystagmus in patients with Achromatopsia using image-based tracking with AOSLO**
Kane, T., Singh, N., Georgiou, M., Dubra, A., Michaelides, M., Kalitzeos, A.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2019
- **Reflectance adaptive optics scanning light ophthalmoscopy of epiretinal membranes**
Razeen, M. M., Leng, T., Dubra, A.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2019
- **Shack-Hartmann wavefront sensor bias at the pupil boundary: problem and solution**
Akondi, V., Dubra, A.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2019
- **Chromatic Shack-Hartmann wavefront sensor with adaptive optics correction of monochromatic aberrations**
Steven, S., Akondi, V., Dubra, A.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2019
- **Deep learning multimodal detection and classification of cone and rod photoreceptors in adaptive optics scanning light ophthalmoscope images**
Cunefare, D., Huckenpahler, A. L., Patterson, E. J., Dubra, A., Carroll, J., Farsiu, S.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2019
- **Adaptive Optics Findings in Vogt-Koyanagi-Harada Disease**
Pham, A., Halim, M., Razeen, M. M., Hassan, M., Ormaechea, M., Razeen, E., Uludag, G., Anh Ngoc Tram Tran, Al-Kirwi, K., Mahajan, S., Afridi, R., Dubra, A., Quan Dong Nguyen
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2019
- **Natural history of foveal cone structure in RPE65-associated Leber congenital amaurosis (LCA)**
Kalitzeos, A., Kumaran, N., Georgiou, M., Singh, N., Kane, T., Kasilian, M., Dubra, A., Carroll, J., Michaelides, M.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2019
- **Deep Phenotyping of PDE6C-Associated Retinopathy**
Georgiou, M., Robson, A. G., Hirji, N., Singh, N., Kane, T., Dubra, A., Carroll, J., Webster, A., Kalitzeos, A., Michaelides, M.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2019
- **Evaluating seasonal changes of cone photoreceptor structure in the 13-lined ground squirrel** *VISION RESEARCH*
Sajdak, B. S., Salmon, A. E., Litts, K. M., Wells, C., Allen, K. P., Dubra, A., Merriman, D. K., Carroll, J.
2019; 158: 90–99
- **Design of two spherical mirror unobscured relay telescopes using nodal aberration theory** *OPTICS EXPRESS*
Steven, S., Bentley, J., Dubra, A.
2019; 27 (8): 11205–26
- **CELLULAR IMAGING OF THE TAPETAL-LIKE REFLEX IN CARRIERS OF RPGR-ASSOCIATED RETINOPATHY** *RETINA-THE JOURNAL OF RETINAL AND VITREOUS DISEASES*
Kalitzeos, A., Samra, R., Kasilian, M., Tee, J. L., Strampe, M., Langlo, C., Webster, A. R., Dubra, A., Carroll, J., Michaelides, M.
2019; 39 (3): 570–80
- **Evaluating Seasonal Changes of Cone Photoreceptor Structure in the 13-Lined Ground Squirrel.** *Vision research*
Sajdak, B. S., Salmon, A. E., Litts, K. M., Wells, C., Allen, K. P., Dubra, A., Merriman, D. K., Carroll, J.
2019

- **Adaptive Optics Retinal Imaging in CNGA3-Associated Achromatopsia: Retinal Characterization, Interocular Symmetry, and Intrafamilial Variability.** *Investigative ophthalmology & visual science*
Georgiou, M., Litts, K. M., Kalitzeos, A., Langlo, C. S., Kane, T., Singh, N., Kassilian, M., Hirji, N., Kumaran, N., Dubra, A., Carroll, J., Michaelides, M.
2019; 60 (1): 383–96
- **Deep Phenotyping of PDE6C-Associated Achromatopsia.** *Investigative ophthalmology & visual science*
Georgiou, M., Robson, A. G., Singh, N., Pontikos, N., Kane, T., Hirji, N., Ripamonti, C., Rotsos, T., Dubra, A., Kalitzeos, A., Webster, A. R., Carroll, J., Michaelides, et al
2019; 60 (15): 5112–23
- **Centroid error due to non-uniform lenslet illumination in the Shack-Hartmann wavefront sensor** *Optics Letters*
Akondi, V., Steven, S., Dubra, A.
2019; 44 (17): 4167-4170
- **Accounting for focal shift in the Shack-Hartmann wavefront sensor** *Optics Letters*
Akondi, V., Dubra, A.
2019; 44 (17): 4151-4154
- **RAC-CNN: multimodal deep learning based automatic detection and classification of rod and cone photoreceptors in adaptive optics scanning light ophthalmoscope images.** *Biomedical optics express*
Cunefare, D., Huckenpahler, A. L., Patterson, E. J., Dubra, A., Carroll, J., Farsiu, S.
2019; 10 (8): 3815–32
- **Long eye relief fundus camera and fixation target with partial correction of ocular longitudinal chromatic aberration** *BIOMEDICAL OPTICS EXPRESS*
Steven, S., Sulai, Y. N., Cheong, S. K., Bentley, J., Dubra, A.
2018; 9 (12): 6017–37
- **Fast adaptive optics scanning light ophthalmoscope retinal montaging** *BIOMEDICAL OPTICS EXPRESS*
Davidson, B., Kalitzeos, A., Carroll, J., Dubra, A., Ourselin, S., Michaelides, M., Bergeles, C.
2018; 9 (9): 4317–28
- **Cone Photoreceptor Cell Segmentation and Diameter Measurement on Adaptive Optics Images Using Circularly Constrained Active Contour Model** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
Liu, J., Jung, H., Dubra, A., Tam, J.
2018; 59 (11): 4639–52
- **Adaptive optics imaging of inherited retinal diseases** *BRITISH JOURNAL OF OPHTHALMOLOGY*
Georgiou, M., Kalitzeos, A., Patterson, E. J., Dubra, A., Carroll, J., Michaelides, M.
2018; 102 (8): 1028–35
- **Deep learning based detection of cone photoreceptors with multimodal adaptive optics scanning light ophthalmoscope images of achromatopsia** *BIOMEDICAL OPTICS EXPRESS*
Cunefare, D., Langlo, C. S., Patterson, E. J., Blau, S., Dubra, A., Carroll, J., Farsiu, S.
2018; 9 (8)
- **Spatial summation in the human fovea: Do normal optical aberrations and fixational eye movements have an effect?** *JOURNAL OF VISION*
Tuten, W. S., Cooper, R. F., Tiruveedhula, P., Dubra, A., Roorda, A., Cottaris, N. P., Brainard, D. H., Morgan, J. W.
2018; 18 (8): 6
- **High resolution imaging of retinal detachment in the cone-dominant ground squirrel**
Salmon, A. E., Sajdak, B. S., Connor, T. B., Dubra, A., Carroll, J.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2018
- **Characterization of Retinal Structure in CNGA3-associated Achromatopsia**
Georgiou, M., Langlo, C. S., Kalitzeos, A., Hirji, N., Kumaran, N., Dubra, A., Carroll, J., Michaelides, M.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2018
- **Interocular symmetry of foveal cone topography in achromatopsia (ACHM)**
Litts, K. M., Langlo, C. S., Patterson, E. J., Mastey, R., Cava, J. A., May, P., Lam, B. L., Fishman, G. A., Pennesi, M. E., Kay, C. N., Dubra, A., Hauswirth, W. W., Beasley, et al

ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2018

- **Non-confocal quad-detection adaptive optics scanning light ophthalmoscopy of the photoreceptor mosaic**
Sredar, N., Kowalski, B., Razeen, M. M., Steven, S., Dubra, A.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2018
- **High Resolution Imaging of Inner Retinal Microcystic Changes in Glaucoma**
Razeen, M. M., Steven, S., Sredar, N., Cheong, S., Yarp, J., Nunez, M., Goldberg, J. L., Dubra, A.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2018
- **Convolutional neural network based detection of cones in multimodal adaptive optics scanning light ophthalmoscope images of achromatopsia**
Cunefare, D., Patterson, E. J., Blau, S., Langlo, C. S., Dubra, A., Carroll, J., Farsiu, S.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2018
- **Achromatized visible light OCT for ultrahigh resolution retinal imaging**
Zhang, T., Chong, S., Kho, A., Bernucci, M., Dubra, A., Srinivasan, V.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2018
- **Adaptive optics retinal imaging in glaucoma**
Dubra, A.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2018
- **Automatic Cone Photoreceptor Localisation in Healthy and Stargardt Afflicted Retinas Using Deep Learning** *SCIENTIFIC REPORTS*
Davidson, B., Kalitzeos, A., Carroll, J., Dubra, A., Ourselin, S., Michaelides, M., Bergeles, C.
2018; 8: 7911
- **The Reliability of Cone Density Measurements in the Presence of Rods** *TRANSLATIONAL VISION SCIENCE & TECHNOLOGY*
Morgan, J. W., Vergilio, G. K., Hsu, J., Dubra, A., Cooper, R. F.
2018; 7 (3): 21
- **Non-invasive assessment of human cone photoreceptor function (vol 8, pg 5098, 2017)** *BIOMEDICAL OPTICS EXPRESS*
Cooper, R. F., Tuten, W. S., Dubra, A., Brainard, D. H., Morgan, J. W.
2018; 9 (4): 1842
- **Ultrahigh resolution retinal imaging by visible light OCT with longitudinal achromatization** *BIOMEDICAL OPTICS EXPRESS*
Chong, S., Zhang, T., Kho, A., Bernucci, M. T., Dubra, A., Srinivasan, V. J.
2018; 9 (4): 1477–91
- **Sub-Airy Confocal Adaptive Optics Scanning Ophthalmoscopy** *TRANSLATIONAL VISION SCIENCE & TECHNOLOGY*
Sredar, N., Fagbemi, O. E., Dubra, A.
2018; 7 (2): 17
- **Phenotypic diversity in autosomal-dominant cone-rod dystrophy elucidated by adaptive optics retinal imaging.** *The British journal of ophthalmology*
Song, H., Rossi, E. A., Stone, E., Latchney, L., Williams, D., Dubra, A., Chung, M.
2018; 102 (1): 136–41
- **Visible Light Optical Coherence Microscopy Imaging of the Mouse Cortex with Femtoliter Volume Resolution**
Merkle, C. W., Chong, S., Kho, A. M., Zhu, J., Kholiqov, O., Dubra, A., Srinivasan, V. J., Izatt, J. A., Fujimoto, J. G., Tuchin, V. V.
SPIE-INT SOC OPTICAL ENGINEERING.2018
- **Long eye relief fundus camera and fixation target with partial correction of ocular longitudinal chromatic aberration.** *Biomedical optics express*
Steven, S., Sulai, Y. N., Cheong, S. K., Bentley, J., Dubra, A.
2018; 9 (12): 6017–37
- **Deep learning based detection of cone photoreceptors with multimodal adaptive optics scanning light ophthalmoscope images of achromatopsia.** *Biomedical optics express*
Cunefare, D., Langlo, C. S., Patterson, E. J., Blau, S., Dubra, A., Carroll, J., Farsiu, S.
2018; 9 (8): 3740–56
- **Cone Photoreceptor Cell Segmentation and Diameter Measurement on Adaptive Optics Images Using Circularly Constrained Active Contour Model.** *Investigative ophthalmology & visual science*

- Liu, J., Jung, H., Dubra, A., Tam, J.
2018; 59 (11): 4639–52
- **Fast adaptive optics scanning light ophthalmoscope retinal montaging.** *Biomedical optics express*
Davidson, B., Kalitzeos, A., Carroll, J., Dubra, A., Ourselin, S., Michaelides, M., Bergeles, C.
2018; 9 (9): 4317–28
 - **New Clinical Opportunities for Retinal Vascular Imaging Adaptive Optics to OCT Angiography**
Rosen, R., Chui, T., Weitz, R., Dubra, A., Carroll, J., Garcia, P., Pinhas, A., Sripsema, N., Mo, S., Agemy, S., Krawitz, B., Podoleanu, A., Bang, et al
SPIE-INT SOC OPTICAL ENGINEERING.2018
 - **Multimodal imaging of small hard retinal drusen in young healthy adults.** *The British journal of ophthalmology*
Pedersen, H. R., Gilson, S. J., Dubra, A., Munch, I. C., Larsen, M., Baraas, R. C.
2018; 102 (1): 146–52
 - **Visible light optical coherence microscopy of the brain with isotropic femtoliter resolution in vivo.** *Optics letters*
Merkle, C. W., Chong, S. P., Kho, A. M., Zhu, J., Dubra, A., Srinivasan, V. J.
2018; 43 (2): 198–201
 - **An Automated Reference Frame Selection (ARFS) Algorithm for Cone Imaging with Adaptive Optics Scanning Light Ophthalmoscopy.** *Translational vision science & technology*
Salmon, A. E., Cooper, R. F., Langlo, C. S., Baghaie, A., Dubra, A., Carroll, J.
2017; 6 (2): 9-?
 - **PHOTORECEPTOR INNER SEGMENT MORPHOLOGY IN BEST VITELLIFORM MACULAR DYSTROPHY.** *Retina (Philadelphia, Pa.)*
Scoles, D., Sulai, Y. N., Cooper, R. F., Higgins, B. P., Johnson, R. D., Carroll, J., Dubra, A., Stepien, K. E.
2017; 37 (4): 741-748
 - **Assessing the spatial relationship between fixation and foveal specializations.** *Vision research*
Wilk, M. A., Dubis, A. M., Cooper, R. F., Summerfelt, P., Dubra, A., Carroll, J.
2017; 132: 53-61
 - **Vision science and adaptive optics, the state of the field.** *Vision research*
Marcos, S., Werner, J. S., Burns, S. A., Merigan, W. H., Artal, P., Atchison, D. A., Hampson, K. M., Legras, R., Lundstrom, L., Yoon, G., Carroll, J., Choi, S. S., Doble, et al
2017
 - **REPEATABILITY AND LONGITUDINAL ASSESSMENT OF FOVEAL CONE STRUCTURE IN CNGB3-ASSOCIATED ACHROMATOPSIA.** *Retina (Philadelphia, Pa.)*
Langlo, C. S., Erker, L. R., Parker, M., Patterson, E. J., Higgins, B. P., Summerfelt, P., Razeen, M. M., Collison, F. T., Fishman, G. A., Kay, C. N., Zhang, J., Weleber, R. G., Yang, et al
2017
 - **Reliability and Repeatability of Cone Density Measurements in Patients With Stargardt Disease and RPGR-Associated Retinopathy.** *Investigative ophthalmology & visual science*
Tanna, P., Kasilian, M., Strauss, R., Tee, J., Kalitzeos, A., Tarima, S., Visotcky, A., Dubra, A., Carroll, J., Michaelides, M.
2017; 58 (9): 3608–15
 - **Open source software for automatic detection of cone photoreceptors in adaptive optics ophthalmoscopy using convolutional neural networks.** *Scientific reports*
Cunefare, D., Fang, L., Cooper, R. F., Dubra, A., Carroll, J., Farsiu, S.
2017; 7 (1): 6620
 - **Non-invasive assessment of human cone photoreceptor function.** *Biomedical optics express*
Cooper, R. F., Tuten, W. S., Dubra, A., Brainard, D. H., Morgan, J. I.
2017; 8 (11): 5098–5112
 - **CELLULAR IMAGING OF THE TAPETAL-LIKE REFLEX IN CARRIERS OF RPGR-ASSOCIATED RETINOPATHY.** *Retina (Philadelphia, Pa.)*
Kalitzeos, A., Samra, R., Kasilian, M., Tee, J. J., Strampe, M., Langlo, C., Webster, A. R., Dubra, A., Carroll, J., Michaelides, M.
2017

- **Automated Photoreceptor Cell Identification on Nonconfocal Adaptive Optics Images Using Multiscale Circular Voting.** *Investigative ophthalmology & visual science*
Liu, J., Jung, H., Dubra, A., Tam, J.
2017; 58 (11): 4477–89
- **Unsupervised identification of cone photoreceptors in non-confocal adaptive optics scanning light ophthalmoscope images.** *Biomedical optics express*
Bergeles, C., Dubis, A. M., Davidson, B., Kasilian, M., Kalitzeos, A., Carroll, J., Dubra, A., Michaelides, M., Ourselin, S.
2017; 8 (6): 3081–94
- **Progression of Local Glaucomatous Damage Near Fixation as Seen with Adaptive Optics Imaging.** *Translational vision science & technology*
Hood, D. C., Lee, D., Jarukasetphon, R., Nunez, J., Mavrommatis, M. A., Rosen, R. B., Ritch, R., Dubra, A., Chui, T. Y.
2017; 6 (4): 6
- **Multimodal Imaging of Photoreceptor Structure in Choroideremia** *PLOS ONE*
Sun, L. W., Johnson, R. D., Williams, V., Summerfelt, P., Dubra, A., Weinberg, D. V., Stepien, K. E., Fishman, G. A., Carroll, J.
2016; 11 (12)
- **Noninvasive imaging of the photoreceptor mosaic response to light stimulation.** *Proceedings of the National Academy of Sciences of the United States of America*
Srinivasan, V. J., Dubra, A.
2016
- **Imaging Foveal Microvasculature: Optical Coherence Tomography Angiography Versus Adaptive Optics Scanning Light Ophthalmoscope Fluorescein Angiography** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
Mo, S., Krawitz, B., Efstathiadis, E., Geyman, L., Weitz, R., Chui, T. P., Carroll, J., Dubra, A., Rosen, R. B.
2016; 57 (9): OCT130–OCT140
- **Residual Foveal Cone Structure in CNGB3-Associated Achromatopsia** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
Langlo, C. S., Patterson, E. J., Higgins, B. P., Summerfelt, P., Razeen, M. M., Erker, L. R., Parker, M., Collison, F. T., Fishman, G. A., Kay, C. N., Zhang, J., Weleber, R. G., Yang, et al
2016; 57 (10): 3984-3995
- **In Vivo Imaging of the Human Retinal Pigment Epithelial Mosaic Using Adaptive Optics Enhanced Indocyanine Green Ophthalmoscopy** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
Tam, J., Liu, J., Dubra, A., Fariss, R.
2016; 57 (10): 4376-4384
- **Cone Photoreceptor Structure in Patients With X-Linked Cone Dysfunction and Red-Green Color Vision Deficiency** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
Patterson, E. J., Wilk, M., Langlo, C. S., Kasilian, M., Ring, M., Hufnagel, R. B., Dubis, A. M., Tee, J. J., Kalitzeos, A., Gardner, J. C., Ahmed, Z. M., Sisk, R. A., Larsen, et al
2016; 57 (8): 3853-3863
- **Assessing Photoreceptor Structure in Retinitis Pigmentosa and Usher Syndrome** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
Sun, L. W., Johnson, R. D., Langlo, C. S., Cooper, R. F., Razeen, M. M., Russillo, M. C., Dubra, A., Connor, T. B., Han, D. P., Pennesi, M. E., Kay, C. N., Weinberg, D. V., Stepien, et al
2016; 57 (6): 2428-2442
- **Longitudinal imaging of microvascular remodelling in proliferative diabetic retinopathy using adaptive optics scanning light ophthalmoscopy** *OPHTHALMIC AND PHYSIOLOGICAL OPTICS*
Chui, T. Y., Pinhas, A., Gan, A., Razeen, M., Shah, N., Cheang, E., Liu, C. L., Dubra, A., Rosen, R. B.
2016; 36 (3): 290-302
- **Automatic detection of cone photoreceptors in split detector adaptive optics scanning light ophthalmoscope images.** *Biomedical optics express*
Cunefare, D., Cooper, R. F., Higgins, B., Katz, D. F., Dubra, A., Carroll, J., Farsiu, S.
2016; 7 (5): 2036-2050
- **Correlating Photoreceptor Mosaic Structure to Clinical Findings in Stargardt Disease** *TRANSLATIONAL VISION SCIENCE & TECHNOLOGY*
Razeen, M. M., Cooper, R. F., Langlo, C. S., Goldberg, M. R., Wilk, M. A., Han, D. P., Connor, T. B., Fishman, G. A., Collison, F. T., Sulai, Y. N., Dubra, A., Carroll, J., Stepien, et al
2016; 5 (2): 6

- **ASSESSING PHOTORECEPTOR STRUCTURE ASSOCIATED WITH ELLIPSOID ZONE DISRUPTIONS VISUALIZED WITH OPTICAL COHERENCE TOMOGRAPHY** *RETINA-THE JOURNAL OF RETINAL AND VITREOUS DISEASES*
Scoles, D., Flatter, J. A., Cooper, R. F., Langlo, C. S., Robison, S., Neitz, M., Weinberg, D. V., Pennesi, M. E., Han, D. P., Dubra, A., Carroll, J.
2016; 36 (1): 91–103
- **Effects of Intraframe Distortion on Measures of Cone Mosaic Geometry from Adaptive Optics Scanning Light Ophthalmoscopy** *TRANSLATIONAL VISION SCIENCE & TECHNOLOGY*
Cooper, R. F., Sulai, Y. N., Dubis, A. M., Chui, T. Y., Rosen, R. B., Michaelides, M., Dubra, A., Carroll, J.
2016; 5 (1): 10
- **Noninvasive imaging of the thirteen-lined ground squirrel photoreceptor mosaic** *VISUAL NEUROSCIENCE*
Sajdak, B., Sulai, Y. N., Langlo, C. S., Luna, G., Fisher, S. K., Merriman, D. K., Dubra, A.
2016; 33: e003
- **Retinal Architecture in RGS9- and R9AP-Associated Retinal Dysfunction (Bradyopsia)** *AMERICAN JOURNAL OF OPHTHALMOLOGY*
Strauss, R. W., Dubis, A. M., Cooper, R. F., Ba-Abbad, R., Moore, A. T., Webster, A. R., Dubra, A., Carroll, J., Michaelides, M.
2015; 160 (6): 1269–75
- **FELLOW EYE CHANGES IN PATIENTS WITH NONISCHEMIC CENTRAL RETINAL VEIN OCCLUSION Assessment of Perfused Foveal Microvascular Density and Identification of Nonperfused Capillaries** *RETINA-THE JOURNAL OF RETINAL AND VITREOUS DISEASES*
Pinhas, A., Dubow, M., Shah, N., Cheang, E., Liu, C. L., Razeen, M., Gan, A., Weitz, R., Sulai, Y. N., Chui, T. Y., Dubra, A., Rosen, R. B.
2015; 35 (10): 2028–2036
- **Details of Glaucomatous Damage Are Better Seen on OCT En Face Images Than on OCT Retinal Nerve Fiber Layer Thickness Maps** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
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