



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: <https://dubralab.stanford.edu/>

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

Med Scholar Project Advisor

Jason Gomez

Postdoctoral Faculty Sponsor

Gaston Ali Ayubi Zavalla, Aubrey Hargrave, Tingwei Zhang

Publications

PUBLICATIONS

- **Hybrid FPGA-CPU pupil tracker** *BIOMEDICAL OPTICS EXPRESS*
Kowalski, B., Huang, X., Steven, S., Dubra, A.
2021; 12 (10): 6496-6513
- **Fundus albipunctatus photoreceptor microstructure revealed using adaptive optics scanning light ophthalmoscopy.** *American journal of ophthalmology case reports*
Sobol, E. K., Deobhakta, A., Wilkins, C. S., Francis, J. H., Chui, T. Y., Dubra, A., Zhou, D. B., Castanos, M. V., Lema, G. M., Rosen, R. B., Migacz, J. V.
2021; 22: 101090
- **Direct comparison of photoreceptor reflectivity measurements using simultaneous adaptive optics SLO and OCT**
Bower, A., Liu, T., Liu, Z., Aguilera, N., Li, J., Lu, R., Giannini, J., Cornelissen, S., Dubra, A., Hammer, D., Tam, J.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2021
- **Adaptive optics fluorescence lifetime ophthalmoscopy of iGlucoSnFR-TS suggests increased glucose in RPE of rho(-/-) compared to healthy mice**
Kunala, K., Xue, Y., Huynh, K., Yang, Q., Parkins, K., Steven, S., Dubra, A., Cepko, C., Hunter, J.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2021

- **Correction of resonant optical scanner dynamic aberrations using nodal aberration theory** *OPTICS EXPRESS*
Huang, X., Dubra, A.
2021; 29 (7): 10346–63
- **In-vivo sub-diffraction adaptive optics imaging of photoreceptors in the human eye with annular pupil illumination and sub-Airy detection.** *Optica*
Lu, R., Aguilera, N., Liu, T., Liu, J., Giannini, J. P., Li, J., Bower, A. J., Dubra, A., Tam, J.
2021; 8 (3): 333-343
- **Persistent Dark Cones in Oligocone Trichromacy Revealed by Multimodal Adaptive Optics Ophthalmoscopy** *FRONTIERS IN AGING NEUROSCIENCE*
Li, J., Liu, T., Flynn, O. J., Turriff, A., Liu, Z., Ullah, E., Liu, J., Dubra, A., Johnson, M. A., Brooks, B. P., Hufnagel, R. B., Hammer, D. X., Hury, et al
2021; 13: 629214
- **multimodal visualization of the human retinal pigment epithelial mosaic** *BIOMEDICAL OPTICS EXPRESS*
BOWER, A. J., LIU, T. O., AGUILERA, N. Y., LI, J. E., LIU, J. I., LU, R. N., GIANNINI, J. P., HURYN, L. A., DUBRA, A. O., LIU, Z. N., HAMMER, D. X., TAM, J. Y.
2021; 12 (3): 1449–66
- **Comparison of confocal and non-confocal split-detection cone photoreceptor imaging** *Biomedical Optics Express*
Sredar, N., Razeen, M., Kowalski, B., Carroll, J., Dubra, A.
2021; 12 (2): 737–55
- **Hybrid FPGA-CPU pupil tracker.** *Biomedical optics express*
Kowalski, B., Huang, X., Steven, S., Dubra, A.
2021; 12 (10): 6496-6513
- **Novel Foveal Features Associated With Vision Impairment in Multiple Sclerosis.** *Investigative ophthalmology & visual science*
Hargrave, A., Sredar, N., Khushzad, F., Yarp, J., Tomczak, A., Han, M., Kipp, L., Dubra, A., Moss, H. E.
2021; 62 (12): 27
- **Shack-Hartmann wavefront sensor optical dynamic range** *Optics Express*
Akondi, V., Dubra, A.
2021; 29 (6): 8417-8429
- **Integrating adaptive optics-SLO and OCT for multimodal visualization of the human retinal pigment epithelial mosaic.** *Biomedical optics express*
Bower, A. J., Liu, T. n., Aguilera, N. n., Li, J. n., Liu, J. n., Lu, R. n., Giannini, J. P., Hury, L. A., Dubra, A. n., Liu, Z. n., Hammer, D. X., Tam, J. n.
2021; 12 (3): 1449–66
- **Multi-layer Shack-Hartmann wavefront sensing in the point source regime.** *Biomedical optics express*
Akondi, V. n., Dubra, A. n.
2021; 12 (1): 409–32
- **Comparison of confocal and non-confocal split-detection cone photoreceptor imaging.** *Biomedical optics express*
Sredar, N. n., Razeen, M. n., Kowalski, B. n., Carroll, J. n., Dubra, A. n.
2021; 12 (2): 737–55
- **Multi-layer Shack-Hartmann wavefront sensing in the point source regime** *Biomedical Optics Express*
Akondi, V., Dubra, A.
2021; 12 (1): 409-432
- **Discovery and clinical translation of novel glaucoma biomarkers.** *Progress in retinal and eye research*
Beykin, G., Norcia, A. M., Srinivasan, V. J., Dubra, A., Goldberg, J. L.
2020: 100875
- **Quadrant Non-Confocal AOSLO Imaging of Retinal Vasculature**
Migacz, J. V., Sredar, N., Zhou, D. B., Toral, M., Pinhas, A., Dubra, A., Rosen, R., Chui, T. P.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2020
- **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)

- **Multi-directional image fusion in AOSLO angiography**
Migacz, J. V., Sredar, N., Zhou, D. B., Castanos, M. V., Pinhas, A., Weitz, R., Dubra, A., Rosen, R. B., Chui, T.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2020
- **Dynamic Visualization of Abnormal Parafoveal Blood Flow in Sickle Cell Patients Using AOSLO Vascular Imaging**
Pinhas, A., Migacz, J. V., Zhou, D., Toral, M., Israel, S., Sun, V., Gillette, P., Sredar, N., Dubra, A., Glassberg, J., Rosen, R. B., Chui, T.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2020
- **Functional consequences of disrupted cone photoreceptor reflectivity visualized using multimodal adaptive optics retinal imaging in oligocone trichromacy**
Li, J., Liu, T., Flynn, O., Turriff, A., Liu, Z., Liu, J., Dubra, A., Hufnagel, R., Johnson, M. A., Brooks, B., Hammer, D. X., Huryn, L., Jeffrey, et al
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2020
- **Multimodal cellular assessment of the retinal pigment epithelium using an integrated adaptive optics retinal imager**
Bower, A. J., Liu, T., Li, J., Aguilera, N., Liu, J., Lu, R., Giannini, J., Huryn, L., Dubra, A., Liu, Z., Hammer, D., Tam, J.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2020
- **Characterization of Retinal vascular changes in Multiple Sclerosis using Adaptive Optics and OCTA**
Khushzad, F., Yarp, J., Hargrave, A., Sredar, N., Mahesh, V., Tomczak, A., Kipp, L., Han, M., Dubra, A., Moss, H.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2020
- **Novel microscopic foveal pit pathology in multiple sclerosis revealed with adaptive optics ophthalmoscopy**
Hargrave, A., Sredar, N., Razeen, M. M., Khushzad, F., Yarp, J., Leishangthem, L., Tomczak, A., Kipp, L., Han, M., Kowalski, B., Dubra, A., Moss, H.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2020
- **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
- **Dynamic distortion in resonant galvanometric optical scanners** *Optica*
Akondi, V., Kowalski, B., Burns, S. A., Dubra, A.
2020; 7 (11): 1506-1513
- **Dynamic distortion in resonant galvanometric optical scanners.** *Optica*
Akondi, V., Kowalski, B., Burns, S. A., Dubra, A.
2020; 7 (11): 1506-1513
- **ANATOMIC, GENETIC AND FUNCTIONAL PROPERTIES OF THE RETINAL CIRCULATION IN PULMONARY HYPERTENSION** *Pulmonary Circulation*
Nickel, N. P., Shamskhov, E. A., Razeen, M., Condon, D., Messentier, L., Dubra, A., Liao, Y., Zamanian, R. T., Yuan, K., de Jesus Perez, V. A.
2020
- **Average gradient of Zernike polynomials over polygons** *Optics Express*
Akondi, V., Dubra, A.
2020; 28 (13): 18876-18886
- **Intraobserver Repeatability and Interobserver Reproducibility of Foveal Cone Density Measurements in CNGA3- and CNGB3-Associated Achromatopsia.** *Translational vision science & technology*
Georgiou, M. n., Litts, K. M., Singh, N. n., Kane, T. n., Patterson, E. J., Hirji, N. n., Kalitzeos, A. n., Dubra, A. n., Michaelides, M. n., Carroll, J. n.
2020; 9 (7): 37
- **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
- **Near infrared fluorescence detection and evaluation in an adaptive optics scanning laser ophthalmoscope**
Liu, T., Cornelissen, S., Dubra, A., Tam, J.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2019
- **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. n., Robson, A. G., Singh, N. n., Pontikos, N. n., Kane, T. n., Hirji, N. n., Ripamonti, C. n., Rotsos, T. n., Dubra, A. n., Kalitzeos, A. n., Webster, A. R., Carroll, J. n., Michaelides, et al
2019; 60 (15): 5112–23
 - **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): 383-396
 - **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. n., Huckenpahler, A. L., Patterson, E. J., Dubra, A. n., Carroll, J. n., Farsiu, S. n.
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
 - **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
 - **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)
 - **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. n., Rossi, E. A., Stone, E. n., Latchney, L. n., Williams, D. n., Dubra, A. n., Chung, M. n.
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. n., Sulai, Y. N., Cheong, S. K., Bentley, J. n., Dubra, A. n.
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. n., Langlo, C. S., Patterson, E. J., Blau, S. n., Dubra, A. n., Carroll, J. n., Farsiu, S. n.
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. n., Jung, H. n., Dubra, A. n., Tam, J. n.
2018; 59 (11): 4639–52
- **Fast adaptive optics scanning light ophthalmoscope retinal montage.** *Biomedical optics express*
Davidson, B. n., Kalitzeos, A. n., Carroll, J. n., Dubra, A. n., Ourselin, S. n., Michaelides, M. n., Bergeles, C. n.
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. n., Munch, I. C., Larsen, M. n., 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. n., Dubra, A. n., Srinivasan, V. J.
2018; 43 (2): 198–201
- **Spectral sensitivity of the cone photoreceptor intrinsic reflectance response**
Cooper, R. F., Tuten, W., Dubra, A., Brainard, D. H., Morgan, J.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2017
- **Photopic spatial summation in the central retina assessed with adaptive optics**
Tuten, W., Cooper, R. F., Tiruveedhula, P., Dubra, A., Roorda, A., Brainard, D. H., Morgan, J.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2017
- **Automatic detection of cones in multi-modal adaptive optics scanning light ophthalmoscope images of achromatopsia**
Cunefare, D., Langlo, C. S., Dubra, A., Carroll, J., Farsiu, S.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2017
- **Imaging the porcine retina using adaptive optics scanning light ophthalmoscopy**
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