Stanford

Brian Soetikno

- Postdoctoral Research Fellow, Ophthalmology
- Masters Student in Clinical Informatics Management, admitted Summer 2021

Bio

BIO

Brian Soetikno grew up in Union City, CA. He received his BS in Biomedical Engineering from Washington University in St. Louis, MO, where he studied biomedical optics under the mentorship of Lihong Wang, PhD. In the summer of 2013, he entered the Medical Scientist (MD/PhD) Training Program at the Northwestern University Feinberg School of Medicine, Chicago, IL. He completed a PhD in Biomedical Engineering in 2018 under the combined mentorship of Amani Fawzi, MD and Hao Zhang, PhD, which focused on retinal imaging. Specifically, his dissertation described advances in functional optical coherence tomography (OCT), including retinal oximetry with visible-light OCT and OCT angiography. He graduated with his MD in 2020 and joined the Stanford Ophthalmology Advance Research (SOAR) residency. Brian aspires to ultimately pursue a career in academic ophthalmology, where he hopes to combine his passion for engineering, innovation, and ocular surgery.

HONORS AND AWARDS

- AUPO/RPB Research Forum Invited Talk, AUPO (2020)
- Lee M. Jampol Ophthalmology Medical Student Award, Northwestern University (2020)
- BME Research Day Imaging and Biophotonics Research Progress Award, Northwestern University (2017)
- Outstanding Poster Award, OCTA Summit 2017, Portland, OR (2017)
- NIH F30 Ruth L. Kirschstein National Research Service Award, National Eye Institute (2016)
- ARVO Travel Award, National Eye Institute (2015)
- Harvard-MIT Biomedical Optics Summer Institute Fellowship, Harvard-MIT (2012)
- AMGEN Summer Research Fellowship, AMGEN (2011)

PROFESSIONAL EDUCATION

- Doctor of Philosophy, Northwestern University (2018)
- M.D., Northwestern University , Medicine (2020)
- Ph.D., Northwestern University , Biomedical Engineering (2018)
- B.S., Washington University in St. Louis , Biomedical Engineering (2013)

Publications

PUBLICATIONS

- **RainbowSTORM: An open-source ImageJ plug-in for spectroscopic single-molecule localization microscopy (sSMLM) data analysis and image reconstruction.** *Bioinformatics (Oxford, England)*
  Davis, J. L., Soetikno, B., Song, K., Zhang, Y., Sun, C., Zhang, H. F.

2020

- **Spectrally dependent roll-off in visible-light optical coherence tomography** *OPTICS LETTERS*
  Rubinoff, I., Soetikno, B., Miller, D. A., Rischall, I., Fawzi, A., Kuranov, R., Zhang, H. F.
  2020; 45 (9): 2680–83
- **Perivenular Capillary Loss: An Early, Quantifiable Change in Macular Telangiectasia Type 2** *TRANSLATIONAL VISION SCIENCE & TECHNOLOGY*
  Micevych, P. S., Soetikno, B. T., Fawzi, A. A.
  2020; 9 (4): 5
- **MULTILEVEL ISCHEMIA IN DISORGANIZATION OF THE RETINAL INNER LAYERS ON PROJECTION-RESOLVED OPTICAL COHERENCE TOMOGRAPHY ANGIOGRAPHY** *RETINA-THE JOURNAL OF RETINAL AND VITREOUS DISEASES*
  Onishi, A. C., Ashraf, M., Soetikno, B. T., Fawzi, A. A.
  2019; 39 (8): 1588–94
- **Advanced image processing for visible-light OCT oximetry in rodents**
  Soetikno, B., Beckmann, L., Qiao, D., Benson, N., Zhang, X., Shu, X., Rubinoff, I., Kuranov, R., Fawzi, A. A., Zhang, H. F.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2019
- **Drusen diagnosis comparison between hyper-spectral and color retinal mages** *BIOMEDICAL OPTICS EXPRESS*
  Wang, Y., Soetikno, B., Furst, J., Raicu, D., Fawzi, A. A.
  2019; 10 (2): 914–31
- **Monitoring Acute Stroke in Mouse Model Using Laser Speckle Imaging-Guided Visible-Light Optical Coherence Tomography** *IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING*
  Liu, Q., Chen, S., Soetikno, B., Liu, W., Tong, S., Zhang, H. F.
  2018; 65 (10): 2136–42
- **The Correlation of Pars Plana Incision and Transient Hypotony After Silicone Oil Removal** *OPHTHALMIC SURGERY LASERS & IMAGING RETINA*
  Zhang, X., Chen, B., Yang, H., Song, Y., Zhang, D., Soetikno, B. T., Sun, X.
  2018; 49 (9): E44–E51
- **Visible-light optical coherence tomography oximetry based on circumpapillary scan and graph-search segmentation** *BIOMEDICAL OPTICS EXPRESS*
  Soetikno, B. T., Beckmann, L., Zhang, X., Fawzi, A. A., Zhang, H. F.
  2018; 9 (8): 3640–52
- **Longitudinal characterization of branched retinal vein occlusions created by imaging-guided photocoagulation**
  Soetikno, B., Beckmann, L., Zhang, X., Ryu, H., Fawzi, A., Zhang, H. F.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2018
- **Projection-Resolved OCT Angiography of Microvascular Changes in Paracentral Acute Middle Maculopathy and Acute Macular Neuroretinopathy** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
  Chu, S., Nesper, P. L., Soetikno, B. T., Bakri, S. J., Fawzi, A. A.
  2018; 59 (7): 2913–22
- **Volume-Rendered Projection-Resolved OCT Angiography: 3D Lesion Complexity Is Associated With Therapy Response in Wet Age-Related Macular Degeneration** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
  Nesper, P. L., Soetikno, B. T., Treister, A. D., Fawzi, A. A.
  2018; 59 (5): 1944–52
- **OCT angiography and visible-light OCT in diabetic retinopathy** *VISION RESEARCH*
  Nesper, P. L., Soetikno, B. T., Zhang, H. F., Fawzi, A. A.
  2017; 139: 191–203
- **Optical coherence tomography angiography of retinal vascular occlusions produced by imaging-guided laser photocoagulation** *BIOMEDICAL OPTICS EXPRESS*
  Soetikno, B. T., Shu, X., Liu, Q., Liu, W., Chen, S., Beckmann, L., Fawzi, A. A., Zhang, H. F.
  2017; 8 (8): 3571–82
- **Parallel Three-Dimensional Tracking of Quantum Rods Using Polarization-Sensitive Spectroscopic Photon Localization Microscopy** *ACS PHOTONICS*
  Dong, B., Soetikno, B. T., Chen, X., Backman, V., Sun, C., Zhang, H. F.

2017; 4 (7): 1747–52

- **Monitoring retinal vascular occlusions in rodents with OCT angiography**
  Soetikno, B., Shu, X., Liu, Q., Liu, W., Chen, S., Beckmann, L., Fawzi, A. A., Zhang, H. F.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2017

- **Stochastic fluorescence switching of nucleic acids under visible light illumination** *OPTICS EXPRESS*
  Dong, B., Almassalha, L. M., Soetikno, B. T., Chandler, J. E., The-Quyen Nguyen, Urban, B. E., Sun, C., Zhang, H. F., Backman, V.
  2017; 25 (7): 7929–44

- **Increased Retinal Oxygen Metabolism Precedes Microvascular Alterations in Type 1 Diabetic Mice** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
  Liu, W., Wang, S., Soetikno, B., Yi, J., Zhang, K., Chen, S., Linsenmeier, R. A., Sorenson, C. M., Sheibani, N., Zhang, H. F.
  2017; 58 (2): 981–89

- **Choriocapillaris Nonperfusion is Associated With Poor Visual Acuity in Eyes With Reticular Pseudodrusen** *AMERICAN JOURNAL OF OPHTHALMOLOGY*
  Nesper, P. L., Soetikno, B. T., Fawzi, A. A.
  2017; 174: 42–55

- **Imaging hemodynamic response after distal middle cerebral artery occlusion with combined laser speckle imaging and visible-light optical coherence tomography**
  Liu, Q., Chen, S., Soetikno, B., Tong, S., Zhang, H. F., IEEE
  IEEE.2017: 62–65

- **CHARACTERIZATION OF THE MIDDLE CAPILLARY PLEXUS USING OPTICAL COHERENCE TOMOGRAPHY ANGIOGRAPHY IN HEALTHY AND DIABETIC EYES** *RETINA-THE JOURNAL OF RETINAL AND VITREOUS DISEASES*
  Park, J. J., Soetikno, B. T., Fawzi, A. A.
  2016; 36 (11): 2039–50

- **Visible-Light Optical Coherence Tomography Angiography for Monitoring Laser-Induced Choroidal Neovascularization in Mice** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
  Shah, R. S., Soetikno, B. T., Yi, J., Liu, W., Skondra, D., Zhang, H. F., Fawzi, A. A.
  2016; 57 (9): OCT86–OCT95

- **Simultaneous comparison of mouse laser induced choroidal neovascularization histology with visible-light optical coherence tomography angiography**
  Shah, R., Soetikno, B., Yi, J., Liu, W., Skondra, D., Zhang, H. F., Fawzi, A. A.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2016

- **Artifact Removal and 3D Visualization for OCT Angiography**
  Soetikno, B., Park, J., Zhang, H. F., Fawzi, A. A.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2016

- **Optical Coherence Tomography Angiography of Three Retinal Capillary Networks**
  Park, J., Soetikno, B., Nesper, P. L., Fawzi, A. A.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2016

- **Imaging hemodynamic response after ischemic stroke in mouse cortex using visible-light optical coherence tomography.** *Biomedical optics express*
  Chen, S., Liu, Q., Shu, X., Soetikno, B., Tong, S., Zhang, H. F.
  2016; 7 (9): 3377–89

- **Imaging hemodynamic response after ischemic stroke in mouse cortex using visible-light optical coherence tomography** *BIOMEDICAL OPTICS EXPRESS*
  Chen, S., Liu, Q., Shu, X., Soetikno, B., Tong, S., Zhang, H. F.
  2016; 7 (9): 3376–89

- **Visible-light OCT to quantify retinal oxygen metabolism (Conference Presentation)**
  Zhang, H. F., Yi, J., Chen, S., Liu, W., Soetikno, B. T., Izatt, J. A., Fujimoto, J. G., Tuchin, V. V.
  SPIE-INT SOC OPTICAL ENGINEERING.2016

- **A Mouse Model for Laser-induced Choroidal Neovascularization** *JOVE-JOURNAL OF VISUALIZED EXPERIMENTS*
  Shah, R. S., Soetikno, B. T., Lajko, M., Fawzi, A. A.

2015: e53502

- **Inner retinal oxygen metabolism in the 50/10 oxygen-induced retinopathy model** *SCIENTIFIC REPORTS*
  Soetikno, B. T., Yi, J., Shah, R., Liu, W., Purta, P., Zhang, H. F., Fawzi, A. A.
  2015; 5: 16752

- **Histopathological correlation of optical coherence tomography angiography in laser-induced choroidal neovascularization**
  Shah, R. S., Soetikno, B., Liu, W., Yi, J., Zhang, H. F., Fawzi, A. A.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2015

- **Longitudinal monitoring of choroidal neovascularization by OCT angiography in mice**
  Liu, W., Yi, J., Shah, R. S., Soetikno, B., Fawzi, A. A., Zhang, H. F.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2015

- **Oxygen Metabolism of the Inner Retina in the 50/10 Rat Model of Retinopathy of Prematurity**
  Soetikno, B., Yi, J., Purta, P., Liu, W., Shah, R. S., Zhang, H. F., Fawzi, A. A.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2015

- **Simultaneous photoacoustic microscopy of microvascular anatomy, oxygen saturation, and blood flow** *OPTICS LETTERS*
  Ning, B., Kennedy, M. J., Dixon, A. J., Sun, N., Cao, R., Soetikno, B. T., Chen, R., Zhou, Q., Shung, K., Hossack, J. A., Hu, S.
  2015; 40 (6): 910–13

- **Three-dimensional arbitrary trajectory scanning photoacoustic microscopy.** *Journal of biophotonics*
  Yeh, C. n., Soetikno, B. n., Hu, S. n., Maslov, K. I., Wang, L. V.
  2015; 8 (4): 303–8

- **Microvascular quantification based on contour-scanning photoacoustic microscopy.** *Journal of biomedical optics*
  Yeh, C. n., Soetikno, B. n., Hu, S. n., Maslov, K. I., Wang, L. V.
  2014; 19 (9): 96011