

Laura Waller

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Education

Massachusetts Institute of Technology (MIT), Cambridge, MA

Ph.D., Electrical Engineering and Computer Science, 2010
M.Eng., Electrical Engineering and Computer Science, 2005
B.S., Electrical Engineering, 2004

Cambridge University, Cambridge, UK

Cambridge-MIT Institute exchange program, 2002-2003

Experience

Charles A. Desoer Endowed Professor, University of California, Berkeley

07/2021 – present

*Department of Electrical Engineering and Computer Sciences
UCB/UCSF Bioengineering Graduate Group
Affiliate, Applied Science & Technology (AS&T)*

Ted Van Duzer Endowed Associate Professor, University of California, Berkeley

07/2016 – 06/2021

Assistant Professor, University of California, Berkeley

07/2012 – 06/2016

Postdoctoral Research Associate, Princeton University

06/2010 – 06/2012

Department of Electrical Engineering, also part-time Lecturer in Physics

Researcher, Technical University of Munich

08/2007 – 11/2007

Advanced Nanostructures Lab, Walter Schottky Institute

Research Assistant, MIT

09/2004 – 06/2010

*3D Optical Systems Group, Department of Mechanical Engineering
Singapore-MIT Alliance for Research and Technology (SMART) student*

Achievements

- Charles A Desoer Endowed Chair in Engineering 2022-2027
- Chan-Zuckerberg Initiative (CZI) Biohub Investigator Award 2022
- Optical Society of America (OSA) Adolph Lomb Medal 2021
- American Institute for Medical and Biological Engineering (AIMBE) Fellow 2020
- OSA Fellow 2019
- International Society for Optics and Photonics (SPIE) Early Career Achievement Award 2018
- CZI Biohub Investigator Award 2017
- National Academy of Engineering Frontiers of Engineering Participant 2016
- Agilent Early Career Professor Award Finalist for Big Data Technologies in Imaging 2016
- Carol D. Soc Distinguished Graduate Student Mentoring Award for Junior Faculty 2016
- Ted Van Duzer Endowed Professorship of EECS 2016-2020
- Qualcomm Innovation Fellowship 2016
- Packard Fellow, David and Lucile Packard Foundation 2014
- Moore Foundation Data-driven Discovery Investigator Award 2014

10x Genomics EX2012
NanoString v. Harvard
IPR2024-00526

- NSF CAREER Award 2014
- Bakar Fellow 2014
- OSA Ivan P. Kaminow Outstanding Early Career Professional Prize 2012
- MIT George J. Leness Undergraduate Scholarship
- B'nai Brith Award for Excellence in Athletics and Academics
- Conference Paper Awards:
 - 2nd Place Poster Award (N. Aggarwal), *Advanced Imaging Methods conference* 2024
 - 1st Place Student Paper Award (R. Cao), *Optica Imaging Congress* 2023
 - Hitachi High-Tech Best Presentation Award (R. Cao), *SPIE Photonics West High-Speed Biomedical Imaging and Spectroscopy conference* 2023
 - Best Poster Award (C. Keokot), *Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)* 2021
 - Brain-related Best Paper Honorable Mention, *IEEE Solid-State Circuits Society* 2021
 - Best Talk Award (H. Pinkard), *Computational Biology Retreat* 2021
 - ASML Scientific Leadership Award, Best Student Paper (S. Sherwin), *SPIE Advanced Lithography conference* 2020
 - Zeiss Best Student Poster Award (S. Sherwin), *SPIE Photomask Technology conference* 2019
 - Photonics Best Student Oral Presentation Finalist (S. Sherwin), *SPIE EUV Lithography conference* 2019
 - Outstanding Paper Award (R. Eckert), *OSA Computational Optical Sensing and Imaging* 2019
 - Best Paper Award, *International Conference on Computational Photography* 2019
 - Best Talk Award (H. Pinkard), *Computational and Genomic Biology retreat* 2018
 - Excellence in Research Poster Award (H. Pinkard), *Midwinter conference of Immunologists* 2018
 - Best Student Paper Award (S. Dean), *Imaging Systems conference* 2018
 - Best Poster Award 2nd Place (S. Sherwin), *EUV Lithography workshop* 2018
 - Fumio Okano Best Paper Prize, *SPIE 3D Imaging, Visualization and Display conference* 2017
 - Photonics Best Student Paper Award (S. Sherwin), *SPIE BACUS conference* 2017
 - Best Paper Award Runner Up (Z. Phillips), *Imaging Systems conference* 2017
 - Best Poster Award, *Sculpted Light in the Brain conference* 2017
 - Best Demo Award, *International Conference on Computational Photography* 2017
 - Best Student Paper Award (S. Sherwin), *SPIE Advanced Lithography conference* 2017
 - 1st Runner Up Best Talk Award (H. Pinkard), *Computational Biology and Genomics Retreat* 2017
 - Best Presentation Award, *OSA Computational Optical Sensing and Imaging* 2016
 - Best Paper Award, *International Conference on Computational Photography* 2016
 - Best Student Paper Award (R. Claus), *SPIE Photomask Technology conference* 2015
 - Best Student Paper Award Runner-up (A. Shanker), *SPIE Photomask Technology conference* 2015
 - Best Student Paper Award (A. Shanker), *SPIE Advanced Lithography conference* 2015
 - Best Paper Award, *Workshop in Information Optics* 2014
 - Best Overall Paper Award, *OSA Imaging Systems conference* 2014
 - Best Contribution Award, *International Conference on Advanced Phase Measurement* 2010
 - Best Student Presentation Award, *OSA Annual Meeting* 2009

Service

Conference Chair

Co-Chair, Janelia Computational Optics conference, May 2024, Ashburn, VA.

Co-Chair, *SPIE 3D and Multidimensional Microscopy XXXI*, February 2024, San Francisco, CA.

Co-Chair, *SPIE 3D and Multidimensional Microscopy XXX*, February 2023, San Francisco, CA.

Organizing Committee, *Institute for Pure & Applied Mathematics*, October 2022, Los Angeles, CA.
 Co-Chair, *Optica Frontiers in Optics conference Machine Learning theme*, October 2022, Rochester, NY.
 Co-Chair, *SPIE 3D and Multidimensional Microscopy XXIX*, February 2022, San Francisco, CA.
 Program Committee Chair, *ImageXD at Berkeley Institute of Data Science*, May 2021, online.
 Co-Chair, *SPIE 3D and Multidimensional Microscopy XXVIII*, February 2021, San Francisco, CA.
 Tutorial Chair, *Computer Vision and Pattern Recognition (CVPR) workshop on Physics-based Learning*, June 2020, Seattle, WA.
 Chair, *International Symposium on Biomedical Imaging (ISBI) Computational Imaging workshop*, April 2020, Iowa City, IA.
 Co-Chair, *SPIE 3D and Multidimensional Microscopy XXVI*, February 2020, San Francisco, CA.
 Session Chair, *Advanced Imaging Methods workshop*, January 2020, Berkeley, CA.
 Scientific Organizing Committee, *Physics in Machine Learning workshop*, May 2019, Berkeley, CA.
 Session Chair, *Advanced Imaging Methods workshop*, February 2019, Berkeley, CA.
 Session Organizer, *International Biomedical and Astronomical Signal Processing (BASP) Frontiers workshop*, February 2019, Switzerland.
 Session Chair, *Advanced Imaging Methods workshop*, February 2018, Berkeley, CA.
 Chair, *Sculpted Light in the Brain conference*, June 2017, Berkeley, CA.
 Session Chair, *National Academy of Engineering (NAE) Frontiers in Engineering EU-US*, November 2017, Davis, CA.
 Session Chair, *International Conference on Acoustics, Speech and Signal Processing (ICASSP) conference*, March 2017, New Orleans, LA.
 Chair, *International Conference on Computational Photography (ICCP)*, May 2017, Stanford, CA.
 Session Chair, *Zeiss Symposium on Computational Imaging, Optics in the Digital World*, June 2016, Oberkochen, Germany.
 General Chair, *OSA Computational Optical Sensing and Imaging conference*, July 2016, Heidelberg, Germany.
 Poster Chair, *International Conference on Computational Photography (ICCP)*, May 2016, Chicago, IL.
 Program Chair, *OSA Computational Optical Sensing and Imaging conference*, June 2015, Washington, DC.
 General Chair, *ECI Photonics in Biology, Medicine and Surgery conference*, June 2015, Vail, CO.
 Chair, *OSA Optogenetics Incubator Meeting*, December 2013, Washington, DC.

Conference Program Committee Member

Optica Digital Holography and Three-Dimensional Imaging, June 2024, Capaccio Paestum, Italy.
 SPIE Adaptive Optics and Wavefront Control for Biological Systems X, January 2024, San Francisco, CA.
 SPIE High-speed Biomedical Imaging and Spectroscopy IX, January 2024, San Francisco, CA.
 SPIE Quantitative Phase Imaging X, January 2024, San Francisco, CA.
 SPIE Computational Optical Imaging and Artificial Intelligence in Biomedical Sciences, January 2024, San Francisco, CA.
 International Conference on Computational Photography (ICCP), August 2023, Madison, WI.
 SPIE Computational Imaging VII, April 2023, Orlando, FL.
 Optica CLEO Subcommittee on Photonic Innovations for Biological Sciences, May 2023, San Jose, CA.
 SPIE High-speed Biomedical Imaging and Spectroscopy VIII, January 2023, San Francisco, CA.
 SPIE Quantitative Phase Imaging IX, January 2023, San Francisco, CA.
 SPIE Adaptive Optics and Wavefront Control for Biological Systems IX, January 2023, San Francisco, CA.
 International Conference on Computational Photography (ICCP), August 2022, Pasadena, CA.
 SPIE Unconventional Optical Imaging III, April 2022, Strasbourg, France.
 SPIE Computational Imaging VI, April 2022, Orlando, FL.
 SPIE Anomaly Detection and Imaging with X-Rays (ADIX) V, April 2022, Orlando, CA.
 SPIE High-speed Biomedical Imaging and Spectroscopy VII, January 2022, San Francisco, CA.
 SPIE Quantitative Phase Imaging VIII, January 2022, San Francisco, CA.
 SPIE Adaptive Optics and Wavefront Control for Biological Systems VIII, January 2022, San Francisco, CA.
 SIGGRAPH, August 2021, Los Angeles, CA.
 International Conference on Computational Photography (ICCP), April 2021, Technion, Israel.

SPIE Three-dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXV, February 2021, online.
 SPIE Quantitative Phase Imaging VII, January 2021, online.
 Photonics Online Meetup Artificial Intelligence track, June 2020, online.
 SPIE Defense + Commercial Sensing Computational Imaging V, August 2020, online.
 International Conference on Computational Photography (ICCP), April 2020, online.
 SPIE Photonics Europe Unconventional Optical Imaging, April 2020, Strasbourg, France.
 SPIE Anomaly Detection and Imaging with X-Rays (ADIX) V, April 2020, Anaheim, CA.
 SPIE Three-dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXV, February 2020, San Francisco, CA.
 SPIE Quantitative Phase Imaging VI, January 2020, San Francisco, CA.
 OSA Mathematics in Imaging, June 2019, Munich, Germany.
 International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 2019, Brighton, UK.
 International Conference on Computational Photography (ICCP), May 2019, Tokyo, Japan.
 International Conference on Image Processing (ICIP) reviewer, September 2019, Tokyo, Japan.
 SPIE Defense and Commercial Sensing Computational Imaging, January 2019, Burlingame, CA.
 High-Speed Biomedical Imaging and Spectroscopy III: Toward Big Data Instrumentation and Management, SPIE BIOS, February 2019, San Francisco, CA.
 SPIE Quantitative Phase Imaging V, January 2019, San Francisco, CA.
 SPIE Adaptive Optics and Wavefront Control for Biological Systems IV, January 2019, San Francisco, CA.
 SPIE Three-dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXV, February 2019, San Francisco, CA.
 OSA Imaging Systems, June 2018, Orlando, FL.
 SIAM Conference on Imaging Science, June 2018, Bologna, Italy.
 International Conference on Computational Photography (ICCP), May 2018, Pittsburg, PA.
 SPIE Defense and Commercial Sensing (DSS) Computational Imaging, April 2018, Orlando, FL.
 High-Speed Biomedical Imaging and Spectroscopy III: Toward Big Data Instrumentation and Management, SPIE BIOS, February 2018, San Francisco, CA.
 SPIE Quantitative Phase Imaging, January 2018, San Francisco, CA.
 SPIE Adaptive Optics and Wavefront Control for Biological Systems IV, January 2018, San Francisco, CA.
 SPIE Three-dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXV, February 2018, San Francisco, CA.
 OSA Computational Optical Sensing and Imaging, July 2017, San Francisco, CA.
 OSA Imaging Systems, July 2017, San Francisco, CA.
 SPIE Defense and Commercial Sensing (DSS) Computational Imaging, April 2017, Baltimore, MD.
 High-Speed Biomedical Imaging: Big Data Instrumentation and Management, SPIE BIOS, February 2017, San Francisco, CA.
 SPIE Three-dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXIV, February 2017, San Francisco, CA.
 SPIE BIOS Quantitative Phase Imaging, February 2017, San Francisco, CA.
 SPIE Adaptive Optics and Wavefront Control for Biological Systems III, January 2017, San Francisco, CA.
 OSA Imaging Systems, July 2016, Heidelberg, Germany.
 International Conference on Computational Photography (ICCP), May 2017, Evanston, IL.
 SPIE DSS: Computational Imaging, April 2016, Baltimore, MD.
 3D and Multidimensional Microscopy: Image Acquisition and Processing, January 2016, San Francisco, CA.
 SPIE BIOS Quantitative Phase Imaging, February 2016, San Francisco, CA.
 Advanced Imaging Methods workshop, February 2016, Berkeley, CA.
 Adaptive Optics and Wavefront Control for Biological Systems, SPIE BIOS, January 2016, San Francisco, CA.
 OSA Imaging Systems, July 2015, Arlington, VA.
 International Conference on Computational Photography (ICCP), May 2015, Houston, TX.
 Connecting the Dots, a workshop on pattern recognition in Physics, Feb 2015, Berkeley, CA.

Advanced Imaging Methods workshop, February 2015, Berkeley, CA.
 Quantitative Phase Imaging, SPIE BIOS, February 2015, San Francisco, CA.
 Adaptive Optics and Wavefront Control for Biological Systems, SPIE BIOS, January 2015, San Francisco, CA.
 International Conference in Computational Photography (ICCP), May 2014, Santa Clara, CA.
 OSA Computational Optical Sensing and Imaging, June 2014, Kohala Coast, HI.
 OSA Imaging Systems, June 2014, Seattle, WA.
 OSA Signal Recovery and Synthesis, June 2014, Seattle, WA.
 OSA Frontiers in Optics, Optics in Information Processing subcommittee, October 2014, Tuscon, AZ.
 OSA Imaging Systems, June 2013, Arlington, VA.
 OSA Frontiers in Optics, Optics in Information Processing subcommittee, October 2013, Orlando, FL.
 Asia Communications and Photonics, November 2012, Gunagzhou, China.
 OSA Imaging Systems, June 2012, Monterey, CA.

SPIE Board of Directors	2023-2025
Jury of the international ZEISS Research Award	2022-2024
Associate Editor, Optica	2022-2025
Associate Editor, IEEE Transactions on Computational Imaging	2016-2020
IEEE Special Interest Group on Computational Imaging	2015 - present

Grant proposal reviewer

Moore Foundation Innovators Award, Packard Fellowships, Chan-Zuckerberg Initiative Awards, NIH BRAIN: New Concepts for Large-Scale Recording and Modulation in the Nervous System (R21), NSF CAREER: Energy, Power, Control and Networks (EPCN) Program, Electrical, Communications and Cyber Systems (EECS) Division, NIH R61/R33 Data Harmonization, Curation and Secondary Analysis of Existing Clinical Datasets, C3.ai Digital Transformation Institute COVID-19 Mitigation grant, NSF CAREER Panel on Signal and Image Processing, Computational Imaging

Technical Group Development Chair, Optical Society of America (OSA)	2013-2015
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Voting member of the OSA Board of Meetings, attendee of annual leadership and governance meetings for the society, ensuring the effectiveness of technical groups as a ‘home’ for researchers in similar sub-fields of OSA.

Young Professional, Optical Society of America (OSA)

Organizer for the 2011 and 2012 student chapter Leadership Meetings (~200 from all over the world)
 Served on multiple award and grant review committees (Chapter activity grants 2012, Student paper competition 2012, Hilbert travel grant 2013), session chair for Computational Optical Sensing and Imaging (COSI), and as conference presider (COSI, IS, FiO) and blogger.

Volunteer, MIT Electrical Engineering and Computer Science (EECS)	2008 - 2010
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Organized freshman Discover EECS exploratory program, served on multiple committees and panels, blogged for EECS graduate admissions.

Organizer, Cambridge Science Festival ‘Topics in Optics’ event	2009 - 2011
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Initiated and ran an annual public event (~200 attendees/year) at the MIT Museum, where we used interactive ‘science tricks’ to teach optics.

Vice-President, OSA Student Chapter of MIT	2009-2010
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Organized seminar series, planned social events, and helped with fundraising.

Reviewer:

Nature, Science, Nature Photonics, Nature Communications, Nature Methods, Nature Biotechnology, ACM SIGGRAPH, Optica, Proceedings of the National Academy of Sciences (PNAS), Biomedical Optics Express, IEEE Transactions on Computational Imaging, Optics Letters, Optics Express, Journal of Biomedical Optics, Applied Optics, Advances in Physics (AIP), Optics Communications, Advances in Optics and Photonics,

Journal of the Optical Society of America A, Journal of Modern Optics, Proceedings of the Royal Society A, EDAS Sampling Theory and Applications, International Journal of Hydrogen Energy, Journal of Pathology Informatics, IEEE Transactions on Image Processing, Scientific Reports, International Journal of Computer Vision, ACM Transactions on Graphics.

Students supervised (* indicates women, URM, 1st gen)

Graduate students

*Alma Halgren (BioE)	2024 –	
Dekel Galor (EECS)	2023 –	NSF GRFP, co-advised Jake Yates (Vision Sciences)
Shamus Li (EECS)	2023–24	
*Zahra Fard (AS&T)	2023 –	
Mingxuan Cai (EECS)	2022 –	
*Chaoying Gu (EECS)	2022 –	
Sayan Seal (EECS)	2022 –	co-advised G. Upadhyayula (MCB)
*Leyla Kabuli (EECS)	2021–	NSF GRFP, Berkeley Fellow
*Tiffany Chien (EECS)	2021–	
Charles Dove (EECS)	2021–	Hertz Fellow
Amit Kohli (EECS)	2020–	Berkeley Fellow
Eric Markley (Bioengineering)	2020 –	NSF GRFP
Ruiming Cao (Bioengineering)	2019–	Chinese Government Award, Seibel scholar
*Neerja Aggarwal (EECS)	2019–	
Michael Kellman (EECS)	2017–20	NSF GRFP, co-advised M. Lustig (now pdoc UCSF)
Henry Pinkard (Comp. Biology)	2017– 22	NSF GRFP, BIDS data science fellow (now startup)
Stuart Sherwin (EECS)	2016–21	co-advised A. Neureuther (now at EUV Tech)
*Kristina Monakhova (EECS)	2017–22	NSF GRFP (now faculty at Cornell)
*Kyrollos Yanny (Bioengineering)	2017–22	NSF GRFP (now at Apple)
David Ren (EECS)	2016–21	(now at Ultrasense Systems)
*Fanglin Liu (EECS)	2016–21	(now at Google X)
Gautam Gunjala (EECS)	2016–21	DOE SCGSR fellow (now at ASML)
*Grace Kuo (EECS)	2016–20	co-advised R. Ng, NDSEG fellow (now at Meta)
*Teresa Ou (EECS)	2015–16	co-advised M. Lustig
*Regina Eckert (EECS)	2015–21	Berkeley fellow, NSF GRFP (now at JPL)
Li-Hao Yeh (EECS)	2014–19	(now at Chan-Zuckerberg Biohub)
Nicholas Antipa (EECS)	2014–20	co-advised R. Ng (now faculty at UCSD)
Michael Chen (EECS)	2014–19	(now at Apple)
Zachary Phillips (AS&T)	2014–19	AS&T Research Excellence Award (now at Apple)
Hsiou-Yuan Liu (EECS)	2014–18	(now at Path.AI)
Rene Claus (AS&T)	2013–15	co-advised P. Naulleau (now at Google)
Daniel Shuldman (AS&T)	2013–16	NSF GRFP, DOE SCGF fellowship
Aamod Shanker (EECS)	2012–18	co-advised A. Neureuther (now at KLA-Tencor)

Postdoctoral researchers and visiting scholars

Ruizhi Cao (PhD, Caltech)	2024 –	co-advised, Hillel Adesnik
Munkyu Kang (PhD, Korea U)	2024 –	co-advised, Rikky Muller
*Nalini Singh (PhD, MIT)	2023 –	
*Yunzhe Li (PhD, Boston University)	2022 –	
Kevin Zhou (PhD, Duke)	2022 –	Schmidt Fellow
Henry Pinkard (PhD, UC Berkeley)	2022 –	
*Loza Tadesse (PhD, Stanford)	2021–23	Forbes 30 under 30, (now faculty at MIT)
*Guanghan Meng (PhD, UC Berkeley)	2021–	CIVO fellow

*Sixian You (PhD, UIUC)	2020–21	(now faculty at MIT)
*Yi Xue (PhD, MIT)	2019–22	Weill NeuroHub Fellow (now faculty at UC Davis)
*Emma Alexander (PhD, Harvard)	2018–20	CIVO fellow (now faculty at Northwestern U)
Emrah Bostan (PhD, EPFL)	2016–19	Mobility fellow (now faculty at U. Amsterdam)
Shwetadwip Chowdhury (PhD, Duke)	2017–20	NIH F32 Awardee (now faculty at UT Austin)
Yongbing Zhang (PhD, Tshinghua)	2017	Chinese Overseas Fund Scholar
Nicolas Pegard (PhD, Princeton)	2014–18	CASI Awardee (now faculty at UNC Chapel Hill)
Volker Jaedicke (PhD, Aachen)	2015–16	Gateway Fellowship (now at Apple)
Jonathan Dong (ENS Paris)	2015	
Jingshan Zhong (PhD, NTU)	2013–16	(now at KLA-Tencor)
*Hao Yu (PhD, Tsinghua)	2014–15	CSC Scholar
Chenguang Ma (Tsinghua visitor)	2014–15	CSC Scholar
Ziji Liu (PhD, UESTC 2012)	2014–15	CSC Scholar
Lei Tian (PhD, MIT 2013)	2013–16	(now faculty at Boston University)

Patents

G. Meng, L. Waller, “Single Galvonometer-based Phase Depth-multiplexing Strategy for Spectral Domain OCT,” US Patent Provisional App. (2023). BK-2024-019

D. Galor, R. Cao, J. Yates, **L. Waller**, “even camera” US Patent Provisional App. (2023). BK-2024-009.

N. Aggarwal, E. Markley, K. Monakhova, N. Antipa, **L. Waller**, “Hyperspectral Microscopy using a Phase Mask and Spectral Filter Array” US Patent Provisional App. 63/458,118 (2023).

K. Yanny, N. Antipa, **L. Waller**, “Computational Mask-based Single-shot Miniature 3D Fluorescence Microscope” US Patent Provisional App. 63/007,015 (2020). BK2020-112

N. Pegard, **L. Waller**, H. Adesnik, “Three-dimensional Scanless Holographic Optogenetics with Temporal Focusing” US Patent No. 11,592,654 (2019). BK2017-056

L. Waller, Z. Phillips, M. Chen, “Optical Phase Retrieval Systems using Color-Multiplexed Illumination,” US Patent 11,022,731 (2018). BK2016-149

L. Waller, N. Pegard, H. Adesnik, “Compressive plenoptic microscopy for functional brain imaging,” US Patent US10317667B2 (2016). BK2015-188

M. Chen, L. Yeh, **L. Waller**, “Patterned-illumination systems adopting a computational illumination,” US Patent App. US15/659,379 (2017). BK2014-108

L. Tian, **L. Waller**, “Fourier Ptychographic microscopy with multiplexed illumination,” US Patent US2017/0146788 A1 (2015).

L. Waller, L. Tian, “Three-dimensional differential phase contrast imaging by computational illumination,” US Patent Provisional App. US 61/926,031 (2013).

L. Waller, J. Zhong, L. Tian, J. Dauwels, “Partially coherent phase recovery,” US Patent US2017/0059845 A1 (2016). BK2014-118

L. Waller, G. Barbastathis, “Phase from defocused color images,” US Patent 8,432,553 B2 (2010).

Journal Publications

G. Meng, D. Galor, **L. Waller**, M. Banks, “BiPMAP: A Toolbox for Predicting Perceived Motion Artifacts on Modern Displays,” *Optics Express* 32(7), 12181-12199 (2024).

- N. Ersaro, C. Yalcin, L. Murray, L. Kabuli, **L. Waller**, R. Muller “Fast non-iterative algorithm for 3D point-cloud holography,” *Optics Express* 31(22), 36468-36485 (2023).
- J. Malone, N. Aggarwaal, **L. Waller**, A. Bowden, “DiffuserSpec: spectroscopy with Scotch tape,” *Optics Letters* 48(2), 323-326 (2023).
- E. Li, S. Sherwin, G. Gunjala, **L. Waller**, “Exceeding the limits of algorithmic self-calibrated aberration recovery in Fourier Ptychography,” *Optica Continuum* 2(1), 119-130 (2023).
- Y. Xue, D. Ren, **L. Waller**, “Three-dimensional bi-functional refractive index and fluorescence microscopy (BRIEF),” *Biomedical Optics Express* 13(11), 5900-5909 (2022).
- G. Gunjala, A. Wojdyla, K. Goldberg, Z. Qiao, X. Shi, L. Assoufid, **L. Waller**, “Data-driven modeling and control of an X-ray bimorph adaptive mirror,” *Journal of Synchrotron Radiation* 30 (2023).
- S. Gigan, O. Katz, H. Aguiar, E. Andresen, A. Aubry, J. Bertolotti, E. Bossy, D. Bouchet, J. Brake, S. Brasselet, Y. Bromberg, H. Cao, T. Chaigne, Z. Cheng, W. Choi, T. Cizmar, M. Cui, V. Curtis, H. Defienne, M. Hofer, R. Horisaki, R. Horstmeyer, N. Ji, A. LaViolette, J. Mertz, C. Moser, A. Mosk, N. Pégard, R. Piestun, S. Popoff, D. Phillips, D. Psaltis, B. Rahmani, H. Rigneault, S. Rotter, L. Tian, I. Vellekoop, **L. Waller**, L. Wang, T. Weber, S. Xiao, C. Xu, A. Yamilov, C. Yang and H. Yilmaz, " Roadmap on Wavefront Shaping and deep imaging in complex media", *Journal of Physics: Photonics* 4(4), 042501 (2022).
- H. Pinkard, **L. Waller**, "Microscopes are coming for your job: opportunities and obstacles in adaptive microscopy", *Nature Methods News & Views*, (2022).
- M. Whittaker, D. Ren, C. Ophus, Y. Zhang, **L. Waller**, B. Gilbert, J. Banfield, “Ion complexation waves emerge at the curved interfaces of layered,” *Nature Communications* 13(1), 1-8 (2022).
- C. Yalcin, N. Ersaro, M. Ghanbari, G. Bocchetti, S. Alamouti, N. Antipa, D. Lopez, N. Pegard, **L. Waller**, R. Muller, “MEMS-based optical scanning for high-speed random-access optical neural interfaces,” *Journal of Solid State Circuits* 1 (2022).
- R. Cao, M. Kellman, D. Ren, R. Eckert, **L. Waller**, “Self-calibrated 3D differential phase contrast microscopy with optimized illumination,” *Biomedical Optics Express* 13(3), 1671-1684 (2022).
- Y. Xue, **L. Waller**, H. Adesnik, N. Pegard, “Three-dimensional Multi-site Random Access Photostimulation (3D-MAP),” *elife* 11:e73266 (2022).
- K. Yanny, K. Monakhova, R. Shuai, **L. Waller**, “Deep learning for fast spatially-varying deconvolution,” *Optica* 9(1), 96-99 (2022).
- V. Boominathan, J. Robinson, **L. Waller**, A. Veeraraghavan, “Recent advances in lensless imaging,” *Optica* 9(1), 1-16 (2022).
- Y. Wang, H. Pinkard, E. Khwaja, S. Zhou, **L. Waller**, B. Huang “Image denoising for fluorescence microscopy by self-supervised transfer learning,” *Optics Express* 29(25), 41303-41313 (2021).
- M. Tanksalvala, C. Porter, Y. Esashi, B. Wang, N. Jenkins, Z. Zhang, G. Miley, J. Knobloch, B. McBennett, N. Horiguchi, S. Yazdi, J. Zhou, E. Hosler, M. Jacobs, C. Bevis, R. Karl, P. Johnsen, D. Ren, G. Kuo, M. Chen, G. Gunjala, L. Waller, D. Adams, S. Cousin, C. Liao, J. Miao, M. Gerrity, H. Kapteyn, M. Murnane, “Non-Destructive, High-Resolution, Chemically Specific, Three-Dimensional Nanostructure Characterization using EUV Complex-Imaging Reflectometry,” *Science Advances* 7(5), eabd9667 (2021).
- S. Sherwin, I. Cordova, R. Miyakawa, M. Benk, **L. Waller**, A. Neureuther, P. Naulleau, “Picometer sensitivity metrology for EUV absorber phase,” *SPIE Journal of Micro/Nanopatterning, Materials and Metrology* 20(3), 031011 (2021).

- H. Pinkard, H. Baghdassarian, A. Mual, E. Roberts, K. Hu, D. Friedman, I. Malenica, T. Shagam, A. Fries, K. Corbin, M. Krummel, **L. Waller**, “Learned adaptive multiphoton illumination microscopy,” *Nature Communications* 12, 1916 (2021).
- H. Pinkard, N. Stuurman, I. Ivanov, N. Anthony, W. Ouyang, B. Li, B. Yang, M. Tsuchida, B. Chhun, G. Zhang, R. Mei, M. Anderson, D. Shepherd, I. Hunt-Isaak, R. Dunn, W. Jahr, S. Kato, L. Royer, J. Thiagarajah, K. Eliceiri, E. Lundberg, S. Mehta, **L. Waller**, “Pycro-manager: open-source software for customized microscope control and integrated image processing,” *Nature Methods* 18, 226-228 (2021).
- K. Monakhova, V. Tran, G. Kuo, **L. Waller**, “Untrained networks for compressive lensless photography,” *Optics Express* 29, 20913-20929 (2021).
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S. Sherwin, A. Neureuther, **L. Waller**, P. Naulleau, “Advanced multilayer mirror design to mitigate EUV shadowing,” *SPIE Advanced Lithography conference*, paper 10957-38, February 2019, San Jose, CA.

A. Shanker, P. Naulleau, **L. Waller**, “EUV exposure tool aberration estimation using latent resist image of mask roughness,” *SPIE Conference on EUV Lithography*, paper 105830T, March 2018, San Jose, CA.

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A. Shanker, M. Sczyrba, B. Connolly, F. Kalk, **L. Waller**, A. Neureuther, “Absorption dependence of phase edge effects in OMOG masks,” *SPIE Photomask Technology conference*, paper 9635-15, September 2015, San Jose, CA.

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Conference Proceedings

L. Waller, “Neural space-time algorithms for computational microscopy,” *SPIE Emerging Topics in Artificial Intelligence conference*, August 2024, San Diego, CA.

***Invited**

L. Waller, “Computational microscopy of dynamic samples,” *46th Annual International Conference of the IEEE, Engineering in Medicine, and Biology Society*, July 2024, Orlando, FL.

***Invited (Keynote)**

N. Aggarwal, E. Markley, S. Eberly, K. Monakhova, W. Houck, K. Lee, J. Bae, N. Baek, W. Park, S. Lee, M. Cho, L. Sohn, P. Fordyce, **L. Waller**, “Spectral DiffuserScope: Improvements to computational hyperspectral imager enable low-light imaging,” *Focus on Microscopy conference*, March 2024, Genova, Italy.

E. Markley, L. Kabuli, T. Chien, H. Pinkard, **L. Waller**, “Information-Theoretic Design for High-Dimensional Computational Imaging,” *Optica Computational Optical Sensing and Imaging conference*, paper, July 2024, Toulouse, France.

L. Kabuli, C. Hung, E. Markley, H. Pinkard, **L. Waller**, “Information-Theoretic Experimental Analysis of Lensless Imagers,” *Optica Computational Optical Sensing and Imaging conference*, paper, July 2024, Toulouse, France.

L. Waller, “Dark secrets of computational imaging,” *Electronic Imaging conference*, January 2024, San Francisco, CA.

***Invited**

L. Waller, “Computational microscopy with algorithmic self-calibration,” *SPIE Computational Optical Imaging and Artificial Intelligence in Biomedical Sciences conference*, paper 12857-25, January 2024, San Francisco, CA.

***Invited (Keynote)**

L. Waller, “3D Refractive index microscopy with multiple-scattering samples,” *SPIE Quantitative Phase Imaging conference*, paper 12852-18, February 2024, San Francisco, CA.

***Invited**

A. Bowden, **L. Waller**, J. Malone, E. Markley, N. Aggarwal, “Diffuser-enabled compressed sensing of spectral-domain optical coherence tomography data to reduce data transfer requirements,” *SPIE Optical Coherence Tomography and Coherence Domain Optical Methods in Biomedicine XXVIII conference*, paper 12830-109, January 2024, San Francisco, CA.

A. Kohli, A. Angelopoulos, **L. Waller**, “Random optics for improved digital aberration correction,” *SPIE Computational Optical Imaging and Artificial Intelligence in Biomedical Sciences conference*, paper 12857-31, January 2024, San Francisco, CA.

K. Zhou, C. Gu, G. Jiang, N. Antipa, R. Horstmeyer, **L. Waller**, “High-throughput computational microscopy with diffractive multiplexing across a gigapixel sensor array,” *SPIE Computational Optical Imaging and Artificial Intelligence in Biomedical Sciences conference*, paper 12857-13, January 2024, San Francisco, CA.

J. Dong, K. Shen, M. Unser, **L. Waller**, R. Cao, “Fast quantitative phase imaging with an LED array microscope using a perturbative approach,” *SPIE Quantitative Phase Imaging X conference*, paper 12852-80, January 2024, San Francisco, CA.

G. Meng, A. Zhang, **L. Waller**, “Depth-multiplexing spectral domain optical coherence tomography for full eye length imaging,” *SPIE Ophthalmic Technologies XXXIV conference*, paper 12824-83, January 2024, San Francisco, CA.

L. Kabuli, H. Pinkard, **L. Waller**, “Measuring Information Encoded by Lensless Imaging,” *Advanced Imaging Methods conference*, January 2024, Berkeley, CA.

T. Chien, R. Cao, **L. Waller**, “Space-Time Implicit Neural Representations for Atomic Electron Tomography on Dynamic Samples,” *NeurIPS 2023 Deep Inverse Workshop*, December 2023, New Orleans, LA.

C. Dove, J. Boondicharn, **L. Waller**, “Physics-guided Training of Neural Electromagnetic Wave Simulators with Time-reversal Consistency,” *NeurIPS 2023 Deep Inverse Workshop*, December 2023, New Orleans, LA.

L. Waller, “Speckle Structured Illumination of Dynamic Samples with a Neural Space-time Model,” *IEEE Photonics Conference Propagation Spectroscopy and Imaging conference*, paper MF2.1, November 2023, Orlando, FL.

***Invited**

R. Cao, **L. Waller**, “Dynamic super-resolution microscopy with neural space-time model,” *7th Asilomar Conference on Signals, Systems, and Computers*, paper 1011, October 2023, Asilomar, CA.

L. Waller, “Computational 3D microscopy with dynamic samples,” *Optica Frontiers in Optics conference*, paper FTh2A.1, October 2023, Tacoma, WA.

***Invited (Visionary talk)**

L. Waller, “Multi-dimensional lensless imaging,” *Optica Imaging Congress*, paper DTu2A.1, August 2023, Boston, MA.

***Invited (Keynote)**

L. Kabuli, G. Wu, **L. Waller**, “High-quality lensless imaging with a random multi-focal lenslet phase mask,” *Optica Computational Optical Sensing and Imaging conference*, paper CW3B.1, August 2023, Boston, MA.

M. Cai, K. Zhou, Y. Xue, **L. Waller**, “Computational wavefront shaping with epi-mode 3D refractive index microscopy,” *Optica Computational Optical Sensing and Imaging conference*, paper CW4B.4, August 2023, Boston, MA.

C. Dove, J. Boondicharern, **L. Waller**, “Simulation-efficient Modeling of Light Propagation using Neural Networks,” *Optica Computational Optical Sensing and Imaging conference*, paper CTu5B.3, August 2023, Boston, MA.

R. Cao, G. Meng, **L. Waller**, “Speckle structured illumination of dynamic samples with a neural space-time model,” *Optica Computational Optical Sensing and Imaging conference*, paper CW4B.4, August 2023, Boston, MA.

***1st Place Student Paper Award**

N. Aggarwal, E. Markley, Y. Raniwala, W. Houck, K. Lee, J. Bae, W. Park, S. Lee, **L. Waller**, “Spectral DiffuserScope - Computational snapshot hyperspectral imager for microscopy,” *Optica Computational Optical Sensing and Imaging conference*, paper CTh2A.1, August 2023, Boston, MA.

L. Kabuli, C. Gu, **L. Waller**, “Replica Artifacts in phase mask-based lensless imaging systems,” *Optica Computational Optical Sensing and Imaging conference*, paper CW3B.3, August 2023, Boston, MA.

L. Waller, “Computational 3D microscopy,” *Optica Digital Holography and 3D Imaging conference*, paper HM4F.1, August 2023, Boston, MA.

***Invited (tutorial)**

G. Meng, A. Zhang, **L. Waller**, “Depth-multiplexing spectral domain Optical Coherence Tomography for full eye length imaging,” *Optica Computational Optical Sensing and Imaging conference*, paper CTh2B.6, August 2023, Boston, MA.

D. Galor, R. Cao, **L. Waller**, “Leveraging noise statistics in event cameras for imaging static scenes,” *International Conference on Computational Photography*, paper 33, August 2023, Madison, WI.

***Spotlight Poster**

L. Waller, “Computational Microscopy with Scattering media,” *Frontiers and Challenges in Laser-Based Biological Microscopy conference*, July 2023, Telluride, CO.

***Invited**

V. Tran, R. Cao, S. Fridovich-Keil, **L. Waller**, “Multiplexed pixels: Light field camera with overlapping views for high-resolution 3D reconstruction,” *Computer Vision and Pattern Recognition (CVPR) Computational Cameras and Displays (CCD) workshop*, Poster 12, June 2023, Vancouver, Canada.

L. Waller, “DiffuserCam: Multi-dimensional lensless imaging,” *Photonics North Biophotonics, Novel Sensing, and Advanced Imaging conference*, June 2023, Montreal, Canada.

***Invited**

L. Waller, “DiffuserCam: Multi-dimensional lensless imaging,” *International Symposium on Computational Sensing (ISCS)*, June 2023, Luxembourg.

***Invited (Keynote)**

L. Waller, “3D Phase microscopy with thick samples,” *Frontiers in Microscopy*, April 2023, Porto, Portugal.

***Invited (Plenary)**

N. Aggarwal, E. Markley, Y. Raniwala, B. Houck, K. Lee, J. Bae, N. Baek, K. Monakhova, W. Park, S. Lee, **L. Waller**, “Spectral DiffuserScope: Computational snapshot hyperspectral imager for fluorescence microscopy,” *Frontiers in Microscopy*, April 2023, Porto, Portugal.

N. Aggarwal, J. Malone, **L. Waller**, A. Bowden, “Computational spectroscopy to enable compact medical imaging for low-resource settings,” *Biomedical and Astronomical Signal Processing Frontiers conference*, February 2023, Villars-sur-Ollon, Switzerland.

E. Wang, D. McAllister, A. Reddy, A. Kohli, **L. Waller**, “SeidelNet: an aberration-informed deep learning model for spatially-varying deblurring,” *SPIE Photonics West conference*, paper 12438-65, January 2023, San Francisco, CA.

R. Cao, F. Liu, L. Yeh, G. Meng, **L. Waller**, “Speckle flow Structured Illumination Microscopy for dynamic super-resolution imaging,” *SPIE Photonics West conference*, paper 12390-3, January 2023, San Francisco, CA.

Y. Raniwala, N. Aggarwal, **L. Waller**, “Improved fabrication and calibration for computational hyperspectral snapshot imaging,” *SPIE Photonics West conference*, paper 12363-33, January 2023, San Francisco, CA.

N. Aggarwal, J. Malone, **L. Waller**, A. Bowden, “DiffuserSpec: a simple computational spectrometer using off-the-shelf diffusers,” *SPIE Photonics West conference*, paper 12428-17, January 2023, San Francisco, CA.

L. Waller, “DiffuserCam: Multi-dimensional lensless imaging” *Conference on Imaging Sensors and Systems*, paper ISS-332, January 2023, San Francisco, CA.

***Invited**

L. Waller, “Computational phase imaging,” *Computational Imaging XXI conference*, paper COIMG-138, January 2023, San Francisco, CA.

***Invited (Keynote)**

L. Waller, “Computational 3D microscopy with scattering samples,” *Biomedical Imaging and Sensing conference*, December 2022, Taipei, Taiwan.

***Invited**

L. Waller, “Computational microscopy,” *Big Data and Computational Microscopy/Spectroscopy Applied to Chemical Characterization Symposium at ACS Meeting*, September 2022, Chicago, IL.

***Invited**

L. Waller, “Computational 3D microscopy,” *SPIE Translational Biophotonics and Additive Manufacturing conference*, paper TBP101-14, September 2022, Los Angeles, CA.

***Invited**

L. Kabuli, B. Klaassen, R. Pepper, **L. Waller**, “Observing Vorticella Feeding Currents with Digital In-Line Holography Particle Tracking,” *International Conference on Computational Photography*, paper 33, August 2022, Pasadena, CA.

L. Waller, “Designing computational cameras with scattering optics,” *Optica Computational Optical Sensing and Imaging (COSI) conference*, paper CM4A.1, July 2022, Vancouver, Canada.

***Invited**

T. Chien, R. Cao, F. Liu, **L. Waller**, “Space-Time DiffuserCam Video Reconstruction using Implicit Neural Representations,” *Optica Computational Optical Sensing and Imaging conference*, paper JW5B.1, July 2022, Vancouver, Canada.

R. Mei, **L. Waller**, “3-D Localization of Micromanipulators Using Microscopy for Autonomous Visual Servoing,” *Optica Computational Optical Sensing and Imaging conference*, paper JW5C.1, July 2022, Vancouver, Canada.

K. Tandi, R. Cao, **L. Waller**, “Optimized Illumination and Pupil Coding for 3D Refractive Index Microscopy,” *Optica Computational Optical Sensing and Imaging conference*, paper CTu4F, July 2022, Vancouver, Canada.

C. Foley, K. Monakhova, K. Yanny, **L. Waller**, “Spectral DefocusCam: Hyperspectral Imaging Using Defocus and A Spectral Filter Array,” *Optica Computational Optical Sensing and Imaging conference*, paper CF2C.1, July 2022, Vancouver, Canada.

L. Kabuli, B. Klaassen van Oorschot, R. Pepper, **L. Waller**, “Observing Vorticella Feeding Currents with Digital In-Line Holography Particle Tracking,” *Optica Computational Optical Sensing and Imaging conference*, paper CM1A.4, July 2022, Vancouver, Canada.

L. Waller, “Computational Microscopy,” *Computer Vision and Pattern Recognition (CVPR) tutorial*, June 2022, New Orleans, LA.

***Invited**

L. Waller, “Multi-dimensional imaging with lensless cameras,” *Gordon Conference on Imaging Science*, June 2022, Sunday River, ME.

***Invited**

L. Waller, “3D Phase and Fluorescence Microscopy with Scattering Samples,” *CLEO Advanced Microscopic Applications conference*, paper Atu5I.1, May 2022, San Jose, CA.

***Invited**

L. Waller, “DiffuserCam: Lensless imaging with random optics,” *CLEO Imaging and Sensing conference*, paper FW5I.5, May 2022, San Jose, CA.

***Invited**

L. Waller, “End-to-end computational microscopy,” *CLEO Propagation and Sensing conference*, paper FM4H.1, May 2022, San Jose, CA.

***Invited**

C. Lin, F. Liu, **L. Waller**, “Sparse and low-rank video processing for Fourier DiffuserScope,” *Optica Biomedical Optics conference*, paper MW4A.3, April 2022, Fort Lauderdale, FL.

N. Aggarwal, E. Markley, K. Monakhova, K. Yanny, **L. Waller**, “Compact snapshot hyperspectral fluorescence microscopy using Spectral DiffuserCam,” *Focus on Microscopy conference*, April 2022, online.

C. Lin, F. Liu, **L. Waller**, “Sparse and low-rank video processing for Fourier DiffuserScope,” *Optica Biomedical Optics conference*, paper 3690185, April 2022, Fort Lauderdale, FL.

L. Waller, “Computational microscopy through scattering media,” *Sensing and Imaging through Scattering conference*, May 2022, Yokohama, Japan.

***Plenary**

G. Gunjala, **L. Waller**, “Control of adaptive X-ray mirrors using data-driven models,” *International conference on Synchrotron Radiation Instrumentation*, paper 358, March 2022, Hamburg, Germany.

S. Sherwin, R. Miyakawa, E. Gullikson, **L. Waller**, A. Neureuther, P. Naulleau, “EUV phase scatterometry with linearized rigorous scattering,” *SPIE Advanced Lithography + Patterning conference*, February 2022, San Jose, CA.

L. Waller, “3D Phase and fluorescence microscopy with scattering samples,” *Computational Imaging XX conference*, paper COIMG-111, January 2022, San Francisco, CA.

***Keynote**

Y. Xue, D. Ren, **L. Waller**, “Three-dimensional Bi-functional Refractive Index and Fluorescence microscopy (BRIEF),” *SPIE BIOS 3D and Multidimensional Microscopy conference*, paper 11966-18, February 2022, San Francisco, CA.

L. Waller, “3D Phase and fluorescence microscopy with scattering samples,” *SPIE Photonics West, Complex Light and Optical Forces XVI conference*, paper 12017-19, January 2022, San Francisco, CA.

***Invited**

E. Markley, F. Liu, M. Kellman, N. Antipa, **L. Waller**, “Physics-Based learned diffuser for single-shot 3D imaging,” *NeurIPS conference Deep Learning and Inverse Problems workshop*, December 2021, online.

A. Liu, Y. Liu, **L. Waller**, “Sparse deep computer-generated holography for optical microscopy,” *NeurIPS conference Deep Learning and Inverse Problems workshop*, December 2021, online.

L. Waller, “End-to-end learning for computational microscopy,” *OSA Frontiers in Optics: Machine Learning conference*, paper FTh6A.2, November 2021, online.

***Invited**

C. Keokot, E. Markley, N. Aggarwal, **L. Waller**, “End-to-end design of a snapshot hyperspectral microscopy system,” *Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) conference*, 2021, online.

S. Mashrafi, Z. Qiao, G. Gunjala, J. Qian, X. Shi, D. Shu, J. Anton, S. Kearney, A. Wojdyla, **L. Waller**, K. Goldberg, L. Assoufid, “An interferometric setup for the metrology and characterization of adaptive mirror optics,” *11th International Conference on Mechanical Engineering Design of Synchrotron Radiation Equipment and Instrumentation*, July 2021, Chicago, IL.

L. Waller, “3D Phase and fluorescence microscopy with scattering samples,” *OSA Imaging Congress*, paper 3Th5E.1, July 2021, Vancouver, Canada.

***Invited (Keynote)**

E. Markley, M. Kellman, N. Antipa, F. Liu, **L. Waller**, “Physics-based learned design for Fourier DiffuserScope,” *OSA Computational Optical Sensing and Imaging conference*, paper CM6B.3, July 2021, Vancouver, Canada.

R. Shuai, K. Yanny, K. Monakhova, **L. Waller**, “MultiWienerNet: Deep learning for fast shift-varying deconvolution,” *OSA Computational Optical Sensing and Imaging conference*, paper CTh5A.5, July 2021, Vancouver, Canada.

A. Kohli, A. Angelopoulos, S. You, **L. Waller**, “Shift-variant deblurring for rotationally symmetric systems,” *OSA Computational Optical Sensing and Imaging conference*, paper CTh5A.4, July 2021, Vancouver, Canada.

L. Waller, “Computational 3D fluorescence microscopy,” *OSA Bio-Optics Topical Meeting: Design and Applications (BODA)*, paper DM3A.1, April 2021, online.

***Invited**

M. Whittaker, D. Ren, C. Ophus, B. Gilbert, **L. Waller**, J. Banfield, “Dynamic clay microstructures emerge via ion complexation waves at the mineral interface,” *Spring American Chemical Society session: Interfacial Reactions under Nano-scale Confinement*, April 2021, online.

***Invited**

R. Cao, M. Kellman, D. Ren, **L. Waller**, “Algorithmic self-calibration for 3D quantitative differential phase contrast microscopy,” *SPIE Quantitative Phase Imaging VII conference*, paper 11653-3, March 2021, online.

W. Pierre, L. Herve, C. Allier, S. Morales, S. Grudinin, S. Chowdhury, **L. Waller**, “Deep learning framework applied to optical diffraction tomography (ODT),” *SPIE Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXVIII conference*, paper 11649-1, March 2021, online.

J. Zhong, E. Bostan, D. Tian, **L. Waller**, “Simultaneous recovery of phase and defocus from coherent through-focus intensity images,” *SPIE Photonics West BIOS conference*, paper 11653-11, March 2021, online.

L. Waller, “Physics-based learning for computational microscopy,” *NeurIPS Workshop on Machine Learning and the Physical Sciences*, December 2020, online.

***Invited**

L. Waller, “Diffuser-based light field microscopy,” *Spanish & Portuguese Advanced Optical Microscopy*, November 2020, Valencia, Spain.

***Invited (Keynote)**

L. Waller, “End-to-end learning for computational microscopy,” *Asilomar Conference on Signals, Systems, and Computers*, paper 1187, November 2020, online.

***Invited**

M. Whittaker, D. Ren, C. Ophus, Y. Zhang, L. Lammers, **L. Waller**, B. Gilbert, J. Banfield, “Coupling between solution chemistry and clay minerals,” *57th Annual Meeting of the Clay Minerals Society*, October 2020, online.

***Invited**

L. Waller, “Computational phase microscopy,” *Biophotonics + Biomedical Microscopy SPIE Photonex + Vacuum Expo Digital Forum*, paper 11575-1, October 2020, online.

***Invited (plenary)**

M. Whittaker, D. Ren, C. Ophus, L. Lammers, **L. Waller**, B. Gilbert, J. Banfield, “3D Tomography using phase contrast electron microscopy,” *Microscopy and Microanalysis conference*, August 2020, online.

L. Waller, “Computational microscopy with scattering samples,” *Biomedical Imaging and Instrumentation (BMES) conference*, October 2020, online.

***Invited**

D. Ren, C. Ophus, J. Zhou, H. Devyldere, M. Whittaker, J. Miao, M. Scott, **L. Waller**, “3D Tomography Using Phase Contrast Electron Microscopy,” *Microscopy and Microanalysis conference*, paper A01.4, August 2020, online.

***Invited**

L. Waller, “Computational microscopy with scattering media,” *SPIE Optics + Photonics*, paper 11482-39, August 2020, online.

***Invited (Plenary)**

L. Waller, “Physics-constrained computational imaging,” *SPIE Emerging Topics in Artificial Intelligence conference*, paper 11469-19, August 2020, online.

***Invited**

L. Waller, “Computational microscopy,” *Society for Industrial and Applied Mathematics (SIAM) conference on Imaging Science*, July 2020, online.

***Invited (Keynote)**

L. Waller, “Computational microscopy with multiple scattering samples,” *SIAM conference on Imaging Science*, July 2020, online.

***Invited**

L. Waller, “DiffuserCam: computational microscopy with a lensless imager,” *OSA Imaging Systems conference*, paper JW4D.1, June 2020, online.

***Invited**

K. Yanny, N. Antipa, W. Liberti, S. Dehaeck, K. Monakhova, F. Liu, K. Shen, R. Ng, **L. Waller**, “Compressed sensing 3D fluorescence microscopy using optimized phase mask,” *OSA Computational Optical Sensing and Imaging conference*, paper CW4B.5, June 2020, online.

K. Monakhova, K. Yanny, **L. Waller**, “Snapshot hyperspectral imaging using a random phase mask and spectral filter array,” *OSA Computational Optical Sensing and Imaging conference*, paper JF2F.4, June 2020, online.

E. Zhao, N. Deshler, K. Monakhova, **L. Waller**, “Multi-sensor lensless imaging: synthetic large-format sensing with a disjoint sensor array,” *OSA Computational Optical Sensing and Imaging conference*, paper CF2C.6, June 2020, online.

R. Cao, M. Kellman, D. Ren, **L. Waller**, “3D Differential Phase Contrast Microscopy with Axial Motion Deblurring,” *OSA Computational Optical Sensing and Imaging conference*, paper CF4C.2, June 2020, online.

G. Kuo, K. Monakhova, K. Yanny, R. Ng, **L. Waller**, “Spatially-varying microscope calibration from unstructured sparse inputs,” *OSA Computational Optical Sensing and Imaging conference*, paper CF4C.4, June 2020, online.

M. Kellman, E. Markley, K. Zhang, J. Tamir, E. Bostan, M. Lustig, **L. Waller**, “Memory-efficient learning for large-scale computational imaging systems,” *Computer Vision and Pattern Recognition (CVPR) Computational Cameras and Displays workshop*, June 2020, online.

K. Monakhova, K. Yanny, N. Aggarwal, **L. Waller**, “Spectral DiffuserCam: lensless snapshot hyperspectral imaging with a spectral filter array,” *Computer Vision and Pattern Recognition (CVPR) Computational Cameras and Displays workshop*, June 2020, online.

N. Antipa, P. Oare, E. Bostan, R. Ng, **L. Waller**, “Compressive video with lensless cameras,” *Computer Vision and Pattern Recognition (CVPR) Computational Cameras and Displays workshop*, June 2020, online.

C. Yalcin, N. Ersumo, G. Bocchetti, M. Ghanbari, N. Antipa, S. Faraji, **L. Waller**, D. Lopez, R. Muller “A MEMS Mirror-Based Spatial Light Modulator Driver ASIC with 200x200 Pixel Array and 10 kHz Refresh Rate for High-Speed Computer-Generated Holography,” *Symposia on VLSI Technology and Circuits*, June 2020, Honolulu, HI.

E. Alexander, S. Cholewiak, V. Labhishetty, A. Gibaldi, **L. Waller**, A. Roorda, M. Banks, “Angular Resolution Requirements for an Effective Light Field Display” *Vision Sciences Society conference*, May 2020, online.

Y. Xue, **L. Waller**, “Multi-layer scattering model for incoherent fluorescence imaging with multiple-scattering phantom,” *International Conference on Computational Photography*, poster 4, April 2020.

F. Liu, G. Kuo, N. Antipa, **L. Waller**, “Single-shot 3D microscopy,” *International Conference on Computational Photography*, poster 34, April 2020.

G. Kuo, F. Liu, K. Monakhova, K. Yanny, R. Ng, **L. Waller**, “On-chip fluorescence microscopy with a random microlens diffuser,” *International Conference on Computational Photography*, poster 9, April 2020.

L. Waller, “3D phase microscopy with scattering samples,” *SPIE DCS Computational Imaging conference*, paper 11396-33, April 2020, Anaheim, CA.

***Invited**

S. Chowdhury, D. Ren, J. Cimino, **L. Waller**, “Large-scale computational recovery of 3D refractive-index in multiple-scattering biology,” *OSA Biomedical Optics conference*, paper 3344308, April 2020, Fort Lauderdale, FL.

L. Waller, “Computational microscopy,” *SPIE Photonics Europe*, March 2020, Strasbourg, France.

***Invited (Plenary)**

L. Waller, “3D computational phase microscopy with multiple-scattering samples,” *SPIE BIOS: Label-free Biomedical Imaging and Sensing conference*, paper 11251-66, February 2020, San Francisco, CA.

***Invited**

L. Waller, “Computational microscopy,” *SPIE Photonics West BIOS Hot Topics*, February 2020, San Francisco, CA.

***Invited**

R. Eckert, M. Kellman, **L. Waller**, “Physics-based learning for measurement diversity in 3D refractive index,” *Photonics West BIOS 3D and Multidimensional Microscopy conference XXVII*, paper 11245-30, January 2020, San Francisco, CA.

S. Cholewiak, E. Alexander, V. Labhishetty, A. Gibaldi, **L. Waller**, A. Roorda, M. Banks, “How many views are required for an effective light field display?,” *Photonics West Optical Architectures for Displays in Augmented, Virtual and Mixed Reality conference*, paper 11310-21, February 2020, San Francisco, CA.

M. Kellman, E. Bostan, M. Lustig, **L. Waller**, “Data-driven Experimental Design for Computational Imaging,” *Photonics West BIOS Quantitative Phase Imaging VI conference*, paper 11249-41, February 2020, San Francisco, CA.

N. Ersumo, C. Yalcin, N. Antipa, N. Pegard, L. Waller, D. Lopez, R. Muller, “Design framework for high-speed 3D scanning tools and development of an axial focusing micromirror-based array,” *SPIE Photonics West MOEMS conference*, paper 11293-2, February 2020, San Francisco, CA.

S. Chowdhury, D. Ren, J. Cimino, **L. Waller**, “Big-data reconstruction of 3D refractive index by multi-slice beam-propagation,” *SPIE Photonics West BIOS Quantitative Phase Imaging VI conference*, paper 11245-20, February 2020, San Francisco, CA.

J. Cimino, S. Chowdhury, D. Ren, **L. Waller**, “Distributed computing pipeline for large-scale nonlinear optical diffraction tomography,” *SPIE Photonics West BIOS Quantitative Phase Imaging VI conference*, paper 11249-66, February 2020, San Francisco, CA.

K. Zhang, M. Kellman, E. Bostan, **L. Waller**, “3D fluorescence deconvolution with deep priors,” *SPIE Photonics West BIOS 3D and Multidimensional Microscopy XXVII conference*, paper 11245-20, February 2020, San Francisco, CA.

H. Pinkard, H. Baghdassarian, A. Mual, E. Roberts, D. Friedman, I. Malenica, A. Fries, M. Krummel, **L. Waller**, “Imaging large samples in vivo with adaptive excitation learned with standard candles,” *Berkeley Advanced Imaging Methods Workshop*, January 2020, Berkeley, CA.

L. Waller, “3D DiffuserCam: computational microscopy with a lensless imager,” *Computational Imaging conference*, paper 3290645, January 2020, Burlingame, CA.

***Invited**

L. Waller, S. Chowdhury, M. Chen, D. Ren, R. Eckert, M. Kellman, E. Bostan “3D computational phase microscopy with multiple-scattering samples,” *Optically Coherent & Interferometric Imaging Session at Computational Imaging XVII conference*, paper 3295867, January 2020, Burlingame, CA.

***Invited**

K. Zhang, M. Kellman, J. Tamir, M. Lustig, **L. Waller**, “Memory-efficient learning for unrolled 3D MRI reconstructions,” *ISMRM workshop on Data Sampling & Image Reconstruction*, January 2020, Sedona, AZ.

L. Waller, “Computational microscopy,” *ISMRM Magnetic Resonance Data Sampling & Image Reconstruction conference*, January 2020, Sedona, AZ.

***Invited**

K. Monakhova, J. Yurtsever, G. Kuo, N. Antipa, K. Yanny, **L. Waller**, “Unrolled, model-based networks for lensless imaging,” *Solving inverse problems with deep networks workshop at NeurIPS conference*, December 2019, Vancouver, Canada.

M. Kellman, J. Tamir, E. Bostan, M. Lustig, **L. Waller**, “Memory-efficient Learning for Large-scale Computational Imaging,” *Solving inverse problems with deep networks workshop at NeurIPS conference*, December 2019, Vancouver, Canada.

L. Waller, “Computational microscopy in scattering media,” *NeurIPS workshop on Solving Inverse Problems with Deep Networks*, December 2019, Vancouver, Canada.

***Invited (Plenary)**

L. Waller, M. Kellman, K. Monakhova, E. Bostan, “Computational Microscopy in Scattering Media,” *Asilomar conference on Signals, Systems, and Computers*, paper 1072, November 2019, Asilomar, CA.

***Invited**

C. Ophus, D. Ren, J. Zhou, H. Devyldere, M. Chen, P. Pelz, P. Ercius, J. Miao, M. Scott, **L. Waller**, “3D-Imaging using HAADF-STEM and HRTEM atomic electron tomography,” *Microscopy and Microanalysis conference*, Vol. 25(S2), August 2019, Portland, OR.

***Invited**

E. Bostan, **L. Waller**, “Optical Phase Imaging: From iterative optimization to machine learning,” *SPIE Wavelets & Sparsity XVIII conference*, August 2019, San Diego, CA.

***Invited**

N. Ersumo, C. Yalcin, N. Pegard, L. Waller, D. Lopez, R. Muller, “Concentric micro-mirror array for high-speed optical dynamic focusing,” *IEEE International Conference on Optical MEMS and Nanophotonics*, July 2019, Daejeon, Korea.

R. Eckert, D. Ren, M. Chen, E. Bostan, **L. Waller**, “Pupil coding for increased measurement diversity in 3D Fourier ptychography,” *OSA Computational Optical Sensing and Imaging conference*, paper CW3A, June 2019, Munich, Germany.

K. Monakhova, N. Antipa, **L. Waller**, “Learning for lensless mask-based imaging,” *OSA Computational Optical Sensing and Imaging conference*, paper CTu3A, June 2019, Munich, Germany.

K. Monakhova, **L. Waller**, *Machine Learning in Physics workshop*, poster, May 2019, Berkeley, CA.

L. Waller, “Computational microscopy,” *UCSF Department of Radiology and Biomedical Imaging Annual Research Retreat*, April 2019, Marshall, CA.

***Invited (Keynote)**

S. Chowdhury, M. Chen, R. Eckert, D. Ren, **L. Waller**, “High-resolution 3D refractive-index microscopy of multiple-scattering samples from intensity-only measurements,” *Focus on Microscopy conference*, paper MO-AF1-PAR-C, April 2019, London, UK.

Z. Phillips, S. Dean, B. Recht, **L. Waller**, “High-throughput fluorescence microscopy using motion deblurring,” *Focus on Microscopy conference*, paper MO-MO-PAR-D, April 2019, London, UK.

K. Yanny, N. Antipa, R. Ng, **L. Waller**, “Miniature 3D fluorescence microscope using random microlenses,” *OSA Biophotonics Optics and the Brain conference*, paper BT3A.4, April 2019, Tucson, AZ.

***Invited**

N. Pegard, **L. Waller**, H. Adesnik “Holographic display and volumetric light sculpting by dynamic synthesis of 4D light fields,” *OSA Optics and the Brain conference*, paper BM3A.5, April 2019, Tucson, AZ.

F. Liu, V. Madhavan, N. Antipa, G. Kuo, S. Kato, **L. Waller**, “Single-shot 3D fluorescence microscopy with Fourier DiffuserCam,” *OSA Biophotonics conference*, paper NS2B, April 2019, Tucson, AZ.

N. Ersumo, C. Yalcin, N. Antipa, S. Chowdhury, N. Pegard, L. Waller, D. Lopez, R. Muller, “High-speed MEMS-based focusing tool for 3D optogenetics,” *International IEEE EMBS Conference on Neural Engineering*, paper FrPO.207, March 2019, San Francisco, CA.

E. Bostan, M. Kellman, **L. Waller**, “Learning-optimized imaging models for optical phase retrieval,” *International Biomedical and Astronomical Signal Processing (BASP) Frontiers workshop*, February 2019, Villars-sur-Ollon, Switzerland.

R. Eckert, M. Chen, L. Yeh, **L. Waller**, “3D phase imaging for thick biological samples,” *SPIE BIOS: Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXVI conference*, paper 10883-28, February 2019, San Francisco, CA.

Y. Deng, X. Wang, Z. Gong, K. Dong, S. Lou, N. Pegard, K. Tom, F. Yang, **L. Waller**, Z. You, J. Yao, “Ultraviolet metasurface based on highly scattering silicon antennas,” *SPIE OPTO: High Contrast Metastructures VII conference*, paper 10928-5, February 2019, San Francisco, CA.

L. Waller, “Designer illumination for quantitative phase microscopy,” *SPIE BIOS: Quantitative Phase Imaging V conference*, paper 10887-1, February 2019, San Francisco, CA.

***Invited**

T. Zimmerman, N. Antipa, D. Elnatan, A. Murru, S. Biswas, V. Pastore, M. Bonani, **L. Waller**, J. Fung, G. Fenu, S. Bianco, “Stereo In-Line Holographic Digital Microscope,” *SPIE BIOS: 3D and Multidimensional Microscopy: Image Acquisition and Processing XXVI conference*, paper 10883-38, February 2019, San Francisco, CA.

M. Kellman, E. Bostan, N. Repina, M. Lustig, **L. Waller**, “Physics-based learned design: Optimized coded-illumination for quantitative phase imaging,” *SPIE BIOS: Quantitative Phase Imaging V conference*, paper 10887-74, February 2019, San Francisco, CA.

M. Chen, H. Liu, D. Ren, **L. Waller**, “Multi-layer Born scattering: an efficient model for 3D phase tomography with multiple scattering objects,” *SPIE BIOS: Quantitative Phase Imaging V conference*, paper 10883-16, February 2019, San Francisco, CA.

S. Chowdhury, M. Chen, R. Eckert, D. Ren, **L. Waller**, “High-resolution 3D refractive index reconstruction of multiple-scattering objects from intensity-only measurements,” *SPIE BIOS: Quantitative Phase Imaging V conference*, paper 10887-6, February 2019, San Francisco, CA.

L. Yeh, S. Chowdhury, **L. Waller**, “Computational structured illumination for high-content multimodal microscopy,” *SPIE BIOS: 3D and Multidimensional Microscopy: Image Acquisition and Processing XXVI conference*, paper 10883-1, February 2019, San Francisco, CA.

L. Waller, “Computational microscopy,” *Frontiers in Quantum Control of Free-Space Electrons Meeting, November 2018*, Sausalito, CA.

***Invited (Keynote)**

L. Waller, “Computational microscopy,” *European Optical Society Biennial Meeting (EOSAM)*, October 2018, Delft, Netherlands.

***Invited (Plenary)**

E. Bostan, M. Soltanolkotabi, D. Ren, **L. Waller**, “Accelerated Wirtinger flow for Multiplexed Fourier Ptyographic Microscopy,” *International Conference on Image Processing (ICIP)*, paper 2968, October 2018, Athens, Greece.

A. Shanker, **L. Waller**, G. Gunjala, A. Wojdyla, D. Voronov, P. Naulleau, “Speckle Metrology for Extreme Ultra-violet Lithography,” *SPIE Advanced Lithography conference*, paper 105830T, June 2018, San Jose, CA.

C. Orphus, D. Ren, M. Chen, C. Groshner, M. Scott, **L. Waller**, “Linear and Nonlinear Algorithms for Atomic-Resolution Tomography Using Phase Contrast Electron Microscopy,” *Microscopy and Microanalysis conference*, vol.2 pp.110-111, August 2018, Baltimore, MD.

L. Waller, “Computational Microscopy,” *Single Biomolecules meeting*, August 2018, Cold Spring Harbor, DC.
***Invited**

L. Waller, “3D Image Reconstruction from Diffused Light,” *Mathematics of Signal Processing, Optimization and Inverse problems Minisymposium SIAM Annual Meeting*, paper MS142, July 2018, Portland, OR.
***Invited**

A. Shanker, G. Nivarti, **L. Waller**, C. Bibiane-Schonlieb, “Turbulent flow in coherent speckle,” *OSA Mathematics in Imaging conference*, paper MW3D.6, June 2018, Orlando, FL.

G. Gunjala, A. Wojdyla, A. Shanker, S. Sherwin, M. Benk, K. Goldberg, P. Naulleau, **L. Waller**, “Field-varying aberration recovery in EUV microscopy using mask roughness,” *OSA Computational Optical Sensing and Imaging conference*, paper CW2E.2, June 2018, Orlando, FL.

Y. Ren, M. Chen, C. Orphus, **L. Waller**, “Tomographic reconstruction of 3D atomic potentials from intensity-only TEM measurements,” *OSA Computational Optical Sensing and Imaging conference*, paper MM2D.3, June 2018, Orlando, FL.

S. Dean, Z. Phillips, **L. Waller**, B. Recht, “Optimal path and illumination design for multiframe motion deblurring,” *OSA Computational Optical Sensing and Imaging conference*, paper 2954296, June 2018, Orlando, FL.

***Best Paper Award**

G. Kuo, N. Antipa, R. Ng, **L. Waller**, “3D fluorescence microscopy with DiffuserCam,” *OSA Computational Optical Sensing and Imaging conference*, paper CM3E.3, June 2018, Orlando, FL.

M. Chen, H. Liu, D. Ren, **L. Waller**, “Multi-layered Born scattering model for 3D phase imaging with multiple scattering objects,” *OSA Computational Optical Sensing and Imaging conference*, paper 2954023, June 2018, Orlando, FL.

L. Waller, “Computational microscopy for 3D imaging,” *OSA Digital holography and 3D imaging conference*, June 2018, Orlando, FL.

***Invited (tutorial)**

L. Waller, “DiffuserCam: Lensless computational 3D imaging,” *IEEE Image, Video and Multidimensional Signal Processing (IVMSP) workshop*, June 2018, Zagori, Greece.

***Invited (Plenary)**

L. Waller, “DiffuserCam: Lensless Single-exposure 3D Imaging,” *Computational and Compressive Imaging Technologies and Applications Minisymposium at SIAM Imaging Science conference*, June 2018, Bologna, Italy.

***Invited**

L. Waller, “Algorithmic Self-Calibration in Computational Imaging,” *Data-driven Approaches in Imaging Science Minisymposium at SIAM Imaging Science conference*, June 2018, Bologna, Italy.

***Invited**

L. Waller, “3D Computational Phase Microscopy,” *Computational Imaging for Micro- and Nano-structures in Materials Science Minisymposium at SIAM Imaging Science conference*, June 2018, Bologna, Italy.

***Invited**

G. Kuo, K. Yanny, N. Antipa, F. Liu, C. Biscarrat, S. Parthasarthy, R. Ng, **L. Waller**, “Single-exposure 3D microscopy with DiffuserCam,” *International Conference on Computational Photography*, poster 18, May 2018, Pittsburgh, PA.

K. Monakhova, K. Yanny, F. Liu, E. Shelhamer, E. Bostan, **L. Waller**, “Deep Diffusers - machine learning for lensless imaging,” *International Conference on Computational Photography*, poster 20, May 2018, Pittsburg, PA.

M. Kellman, M. Chen, Z. Phillips, M. Lustig, **L. Waller**, “Motion-resolved Quantitative Differential Phase Contrast,” *International Conference on Computational Photography*, poster 17, May 2018, Pittsburg, PA.

N. Pegard, A. Mardinly, I. Oldenburg, **L. Waller**, H. Adesnik, “Partially coherent holographic temporal focusing for 3D light sculpting with single neuron resolution,” *OSA Optics and the Brain conference*, paper 2912005, April 2018, Hollywood, FL.

S. Chowdhury, R. Eckert, M. Chen, **L. Waller**, “High-resolution 3D tomography from intensity measurements,” *OSA Biophotonics Microscopy, Histopathology and Analytics conference*, paper 2912130, April 2018, Hollywood, FL.

L. Waller, “Computational Imaging for 3D Microscopy,” *IEEE International Symposium on Biomedical Imaging*, April 2018, Washington, DC.

***Invited (Plenary)**

A. Shanker, **L. Waller**, “Linear scattering theory in phase space,” *SPIE Commercial + Scientific Sensing and Imaging*, paper 10656, April 2018, Orlando, FL.

M. Kellman, Z. Phillips, D. Ren, M. Lustig, **L. Waller**, “Motion resolved quantitative phase imaging,” *SPIE Computational Imaging conference*, paper 10669-11, April 2018, Orlando, FL.

L. Yeh, S. Chowdhury, **L. Waller**, “Computational structured illumination microscopy towards high-throughput fluorescent and phase imaging with diffuse media,” *Focus on Microscopy conference*, March 2018, Singapore, Singapore.

R. Eckert, Y. Daghighi, H. Taylor, **L. Waller**, “3D Fourier Ptychography in scattering media,” *Focus on Microscopy conference*, March 2018, Singapore.

Z. Phillips, S. Dean, B. Recht, **L. Waller**, “Multi-Frame Motion Imaging for Optical Microscopy,” *Focus on Microscopy conference*, March 2018, Singapore.

L. Waller, “Fast large-scale 3D fluorescence microscopy for dynamic samples,” *SPIE BIOS: 3D and Multidimensional Microscopy conference*, paper 10499-66, January 2018, San Francisco, CA.

***Invited**

H. Liu, **L. Waller**, “Fast large-scale 3D fluorescence microscopy for dynamic samples,” *SPIE BIOS 3D and multidimensional microscopy: Imaging acquisition and processing conference*, paper 10499-66, January 2018, San Francisco, CA.

L. Yeh, **L. Waller**, “3D structured illumination microscopy with algorithmic self-calibration,” *SPIE BIOS 3D and multidimensional microscopy: Imaging acquisition and processing conference*, paper 10499-4, January 2018, San Francisco, CA.

S. Chowdhury, L. Yeh, **L. Waller**, “Structured illumination microscopy with scattering media,” *SPIE BIOS 3D and multidimensional microscopy: Imaging acquisition and processing conference*, paper 10499-1, January 2018, San Francisco, CA.

M. Chen, D. Parkinson, **L. Waller**, “3D Computational Phase Microscopy,” *IEEE Nuclear and Plasma Sciences Society Big Data for High-speed Imaging and Particle Tracking at Nuclear Science and Medical Imaging conference*, October 2017, Atlanta, GA.

***Invited**

L. Waller, “3D Computational Microscopy in Scattering Media,” *OSA Frontiers in Optics: Optical Interactions conference*, paper FM4B.1, September 2017, Washington, DC.

***Invited**

A. Shanker, G. Gunjala, S. Sherwin, A. Wojdyla, M. Benk, P. Naulleau, **L. Waller**, “EUV mask roughness can recover litho-tool aberrations,” *International Conference on Extreme Ultraviolet Lithography*, paper 10450-28, September 2017, Monterey, CA

L. Waller, “3D microscopy with scattering media,” *SPIE Nanoscience + Engineering conference*, paper 10347-10, August 2017, San Diego, CA.

***Invited**

N. Pegard, A. Mardinly, H. Adesnik, **L. Waller**, “Simultaneous two-photon photoactivation and readout of brain activity in 3D with single neuron resolution,” *SPIE Optical Engineering + Applications: Ultrafast Nonlinear Imaging and Spectroscopy V conference*, paper 10380-27, August 2017, San Diego, CA.

***Invited**

L. Waller, “3D fluorescence microscopy with computational imaging,” *Frontiers and Challenges in Biological Microscopy*, August 2017, Telluride, CO.

***Invited**

L. Waller, “3D Computational microscopy of dynamic samples,” *ECI Advances in Optics for Biotechnology, Medicine and Surgery XV*, July 2017, Snowmass, CO.

***Invited**

L. Waller, “Computational 3D Microscopy,” *Sampling Theory and Applications (SampTA) conference*, July 2017, Talin, Estonia.

***Invited (Plenary)**

L. Yeh, **L. Waller**, “2D and 3D structured illumination microscopy with unknown patterns and a statistical prior,” *ECI Advances in Optics for Biotechnology, Medicine and Surgery XV*, July 2017, Snowmass, CO.

L. Waller, “Algorithmic self-calibration in computational imaging,” *OSA Mathematics in Imaging conference*, paper xxx, June 2017, paper MM2C.1, San Francisco, CA.

***Invited**

H. Liu, D. Liu, H. Mansour, P. Boufounos, **L. Waller**, U. Kamilov “SEAGLE: Robust computational imaging under multiple scattering,” *OSA Mathematics in Imaging conference*, paper MM4C.1, June 2017, San Francisco, CA.

***Invited**

L. Waller, “Single-shot compressive 3D imaging for neural activity tracking,” *OSA 3D Image Acquisition and Display: Technology, Perception and Applications conference*, paper DW2F, June 2017, San Francisco, CA.

***Invited**

H. Liu, J. Zhong, **L. Waller**, “3D fluorescent microscopy by multiplexed phase-space measurements,” *OSA Computational Optical Sensing and Imaging conference*, paper 2782652, June 2017, San Francisco, CA.

Z. Phillips, R. Eckert, **L. Waller**, “Quasi-dome: Self-calibrated high-NA LED illuminator for Fourier Ptychography,” *OSA Imaging Systems conference*, paper IW4E.5, June 2017, San Francisco, CA.

M. Chen, D. Parkinson, S. Venkatakrishnan, S. Marchesini, **L. Waller**, “Data efficient X-ray phase tomography with an uncharacterized sandpaper analyzer,” *OSA Computational Optical Sensing and Imaging conference*, paper CW2B.2, June 2017, San Francisco, CA.

R. Eckert, N. Repina, M. Chen, R. Ng, **L. Waller**, “Modeling light propagation through 3D phase objects,” *OSA Computational Optical Sensing and Imaging conference*, paper DW2F.2, June 2017, San Francisco, CA.

N. Antipa, G. Kuo, R. Ng, **L. Waller**, “3D DiffuserCam: Single-shot compressive lensless imaging,” *OSA Computational Optical Sensing and Imaging conference*, paper CM2B.2, June 2017, San Francisco, CA.

G. Kuo, N. Antipa, R. Ng, **L. Waller**, “DiffuserCam: diffuser-based lensless cameras,” *OSA Computational Optical Sensing and Imaging conference*, paper CTu3B.2, June 2017, San Francisco, CA.

L. Yeh, N. Repina, **L. Waller**, “3D structured illumination microscopy with unknown patterns and a statistical prior,” *OSA Computational Optical Sensing and Imaging conference*, paper DW2F.3, June 2017, San Francisco, CA.

J. Zhang, N. Pegard, J. Zhong, **L. Waller**, “3D computer generated holography by nonconvex optimization,” *OSA Computational Optical Sensing and Imaging conference*, paper MTu2C.6, June 2017, San Francisco, CA.

D. Ren, **L. Waller**, “TV regularized Fourier Ptychography with multiplexed coded illumination,” *OSA Computational Optical Sensing and Imaging conference*, paper MM3C.3, June 2017, San Francisco, CA.

N. Pegard, A. Mardinly, I. Oldenburg, S. Sridharan, **L. Waller**, H. Adesnik, “3D scanless holographic optogenetics with temporal focusing,” *Structured Light in the Brain conference*, June 2017, Berkeley, CA.

R. Eckert, **L. Waller**, “Computational illumination with light field imaging in scattering media,” *Frontiers in Deep Tissue Imaging, Janelia Farm conference*, June 2017, Ashburn, VA.

L. Waller, “3D neural activity tracking with computational microscopy,” *Frontiers in Deep Tissue Imaging, Janelia Farm conference*, June 2017, Ashburn, VA.

***Invited**

Z. Phillips, M. Chen, **L. Waller**, “DEMO: Computational CellScope: Mult-Contrast Imaging and Digital Refocusing on a Mobile Phone Microscope,” *International Conference on Computational Photography (ICCP)*, May 2017, Stanford, CA.

G. Kuo, N. Antipa, S. Parthasarathy, C. Biscarrat, R. Ng, **L. Waller**, “DiffuserCam: A Diffuser Based Lensless Camera,” *International Conference on Computational Photography (ICCP)*, May 2017, Stanford, CA.

H. Liu, J. Zhang, **L. Waller**, “Fast 10-Gigapixel phase-space imaging with cloud computing,” *International Conference on Computational Photography (ICCP)*, May 2017, Stanford, CA.

R. Eckert, K. Monakhova, Z. Philips, Y. Zhang, L. Tian, **L. Waller**, “Advances in 3D Fourier Ptychography,” *International Conference on Computational Photography (ICCP)*, May 2017, Stanford, CA.

Z. Phillips, M. Chen, **L. Waller**, “Quantitative differential phase contrast imaging with pupil recovery,” *OSA Optics in Life Sciences Congress*, paper 2733885, April 2017, San Diego, CA.

L. Waller, “Computational microscopy for high-throughput science,” *OSA Optics in Life Sciences Congress*, April 2017, San Diego, CA.

***Invited (Plenary)**

M. Chen, **L. Waller**, “3D phase microscopy with coded illumination,” *OSA Novel Techniques in Microscopy conference*, paper 2689179, April 2017, San Diego, CA.

A. Mardinly, N. Pegard, I. Oldenburg, S. Sridharan, R. Hakim, **L. Waller**, H. Adesnik, “3D all-optical control of functionally defined neurons with cellular resolution and sub-millisecond precision,” *OSA Optics and the Brain conference*, paper 2688620, April 2017, San Diego, CA.

N. Pegard, A. Mardinly, J. Zhang, S. Sridharan, **L. Waller**, H. Adesnik, “Holographic temporal focusing for 3D photo-activation with single neuron resolution,” *OSA Optics and the Brain conference*, paper 2641783, April 2017, San Diego, CA.

T. Ou, F. Ong, M. Uecker, **L. Waller**, M. Lustig, “Non-uniform FFT: Fast auto-tuned GPU-based library,” *International Society for Magnetic Resonance in Medicine (ISMRM) conference*, paper 3807, April 2017, Honolulu, HI.

L. Waller, “Computational imaging through scattering media,” *SPIE DSS Computational Imaging conference*, paper 10222-8, April 2017, Anaheim, CA.

***Invited**

H. Liu, N. Boyd, F. Liu, B. Recht, **L. Waller**, “Computational phase space measurements using multiplexed coded apertures,” *SPIE Commercial + Scientific Sensing and Imaging conference*, paper 10222-2, April 2017, Anaheim, CA.

L. Tian, L. Yeh, R. Eckert, **L. Waller**, “Computational microscopy: Illumination coding and nonlinear optimization enables gigapixel 3D phase imaging,” *International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, paper 3031, April 2017, New Orleans, LA.

***Invited**

A. Shanker, A. Wojdyla, G. Gunjala, M. Benk, S. Sherwin, P. Naulleau, **L. Waller**, “Speckle-based aberration recovery in the SHARP EUV mask microscope,” *SPIE Advanced Lithography conference*, paper 10143-60, March 2017, San Jose, CA.

L. Waller, “Computational phase microscopy for mask metrology,” *SPIE Advanced Lithography conference*, paper 10147-1, February 2017, San Jose, CA.

***Invited**

L. Waller, “Computational microscopy for 3D phase imaging,” *5th Banff Meeting on Structural Dynamics – Ultrafast Dynamics with X-rays and Electrons*, February 2017, Banff, Alberta, Canada.

***Invited**

L. Waller, “Computational Microscopy,” *Society for Imaging Science and Technology Symposium on Electronic Imaging*, January 2017, Burlingame, CA.

***Invited (Plenary)**

N. Pegard, A. Mardinly, J. Zhang, S. Sridharan, **L. Waller**, H. Adesnik, “3D scannless holographic optogenetics with temporal focusing,” *Advanced Imaging Methods conference*, January 2017, Berkeley, CA.

L. Waller, “Computational microscopy for phase retrieval,” *Mathematics of Signal Processing at Joint Mathematics Meetings*, paper 1125-92-183, January 2017, Atlanta, GA.

***Invited**

V. Jaedicke, Z. Phillips, R. Eckert, M. Chen, **L. Waller**, “Multi-objective tomographic microscope using LED illumination,” *SPIE Three-dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXIV conference at Photonics West BIOS conference*, paper 10070-1, January 2017, San Francisco, CA.

L. Waller, “Large-scale Computational Microscopy,” *Melbourne Photonics Symposium: Biophotonics in Focus*, December 2016, Melbourne, Australia.

***Invited (Plenary)**

D. Mossing, N. Pegard, **L. Waller**, H. Adesnik, “3D functional brain activity recording in zebrafish with compressive light field microscopy,” *Society for Neurosciences conference*, paper 270.20, November 2016, San Diego, CA.

L. Waller, “Large-scale Computational Microscopy,” *IEEE Photonics conference: Biophotonics*, paper 0823-000497, October 2016, Waikaloa, HI.

***Invited**

L. Waller, “Computational illumination for 3D imaging in scattering,” *SPIE Ultrafast Nonlinear Imaging and Spectroscopy meeting at SPIE Optics and Photonics conference*, paper 9956-36, August 2016, San Diego, CA.

***Invited**

L. Waller, “Compressive phase-space imaging for 3D neural activity tracking,” *OSA 3D Image acquisition and display: Technology, perception and applications conference*, paper TT1A.2, July 2016, Heidelberg, Germany.

***Invited**

L. Yeh, **L. Waller**, “3D super-resolution optical fluctuation imaging (3D-SOFI) with speckle illumination,” *OSA Computational Optical Sensing and Imaging conference*, paper CW5D.2, July 2016, Heidelberg, Germany.

Z. Phillips, M. Chen, **L. Waller**, “Single-shot quantitative phase and amplitude retrieval using color-multiplexed differential phase contrast microscopy,” *OSA Computational Optical Sensing and Imaging conference*, paper CT1D.4, July 2016, Heidelberg, Germany.

R. Eckert, L. Tian, **L. Waller**, “Algorithmic self-calibration of illumination angles in Fourier ptychographic microscopy,” *OSA Computational Optical Sensing and Imaging conference*, paper CT2D.3, July 2016, Heidelberg, Germany.

A. Shanker, A. Wojdyla, G. Gunjala, J. Dong, M. Benk, A. Neureuther, K. Goldberg, **L. Waller**, “Off-axis aberration estimation in an EUV microscope using natural speckle,” *OSA Computational Optical Sensing and Imaging conference*, paper ITh1F.2, July 2016, Heidelberg, Germany.

J. Zhang, J. Zhong, **L. Waller**, “Nonlinear optimization for partially coherent phase recovery with Abbe’s method,” *OSA Computational Optical Sensing and Imaging conference*, paper JT3A.27, July 2016, Heidelberg, Germany.

G. Dardikman, M. Habaza, **L. Waller**, N. Shaked, “GPU-based real-time processing of 3-D refractive index maps of biological cells from tomographic phase microscopy,” *OSA Computational Optical Sensing and Imaging conference*, paper CT4C.2, July 2016, Heidelberg, Germany.

***Best Presentation Award**

L. Waller, “Computational microscopy for Gigapixel-scale imaging,” *Workshop on Computational Cameras and Displays at CVPR (Computer Vision and Pattern Recognition) conference*, July 2016, Las Vegas, NV.

***Invited (Keynote)**

L. Waller, “Computational microscopy,” *Zeiss Symposium*, June 2016, Oberkochen, Germany.

***Invited (Plenary)**

L. Waller, “Computational imaging for gigapixel microscopy,” *OSA CLEO conference*, paper STh3G.7, June 2016, San Jose, CA.

***Invited**

L. Waller, “Computational Microscopy,” *International Conference on Computational Photography*, April 2016, Chicago, IL.

***Invited**

J. Kim, X. Zhang, **L. Waller**, B. Barsky, R. Ng, “Free your eyes: Retinal image deblurring display with enlarged viewing zone,” *International Conference on Computational Photography*, poster 57, May 2016, Chicago, IL.

J. Zhong, L. Tian, M. Chen, L. Yeh, Z. Phillips, H. Liu, **L. Waller**, “Computational phase microscopy,” *International Conference on Computational Photography*, poster 43, May 2016, Chicago, IL.

L. Waller, “Phase retrieval algorithms for gigapixel microscopy,” *Strata + Hadoop World Hardcore Data Science conference*, March 2016, San Jose, CA.

***Invited**

Z. Phillips, M. Chen, C. Ma, L. Tian, **L. Waller**, “Amplitude and phase recovery from motion blur deconvolution,” *SPIE Commercial + Scientific Sensing and Imaging conference*, paper 9870-17, April 2016, Baltimore, MD.

L. Tian, **L. Waller**, “High-speed gigapixel and 3D phase microscopy using coded illumination,” *SPIE BiOS: 3D and Multidimensional Microscopy: Image Acquisition and Processing XXIII conference*, paper 97130T, February 2016, San Francisco, CA.

***Invited (selected for ‘Most Popular Papers in SPIE Digital Library’)**

G. Gunjala, Z. Phillips, **L. Waller**, “Optimal LED illuminator design for Fourier ptychographic microscopy,” *SPIE Commercial + Scientific Sensing and Imaging conference*, paper 9870-13, April 2016, Baltimore, MD.

L. Waller, “Computational illumination for real-time gigapixel phase microscopy,” *SPIE BiOS: Quantitative phase imaging conference*, paper 9718-6, February 2016, San Francisco, CA.

***Invited**

L. Waller, “Spatial coherence engineering of optical beams,” *SPIE Photonics West: Complex Light and Optical Forces conference*, paper 9764-14, February 2016, San Francisco, CA.

***Invited**

L. Waller, “3D imaging through scattering with light field datasets,” *SPIE BIOS: High-speed Biomedical Imaging and Spectroscopy: Toward Big Data Instrumentation and Management conference*, paper 9720-10, February 2016, San Francisco, CA.

***Invited**

H. Liu, Z. Jingshan, **L. Waller**, “4D phase-space multiplexing acquisitions for fluorescent light sources,” *SPIE BIOS: High-speed Biomedical Imaging and Spectroscopy: Toward Big Data Instrumentation and Management conference*, paper 9720-9, February 2016, San Francisco, CA.

M. Chen, L. Tian, **L. Waller**, “3D differential phase contrast microscopy,” *SPIE Quantitative Phase Imaging conference*, paper 9718-48, February 2016, San Francisco, CA.

G. Gunjala, A. Shanker, N. Antipa, **L. Waller**, “Optical transfer function characterization using a weak diffuser,” *SPIE Multi-dimensional Microscopy conference*, paper 9713-32, February 2016, San Francisco, CA.

L. Waller, “High resolution 3D computational imaging in scattering media,” *OSA Frontiers in Optics conference*, paper FTh1F.1, October 2015, San Jose, CA.

***Invited**

L. Waller, “Large scale phase retrieval for 3D and metrology,” *International conference on Optical MEMS and Nanophotonics*, August 2015, Jerusalem, Israel.

***Invited**

L. Waller, L. Tian, Z. Liu, C. Ma, X. Li, K. Ramchandran, “Fast acquisition for wide field of view high-resolution phase microscopy,” *SPIE Ultrafast Nonlinear Imaging and Spectroscopy meeting at SPIE Optics and Photonics conference*, paper 9584-29, August 2015, San Diego, CA.

***Invited**

L. Waller, L. Tian, Z. Phillips, C. Ma, Z. Liu, “3D phase imaging with computational illumination,” *Optical Methods for Inspection, Characterization and Imaging of Biomaterials conference*, paper 9529-27, June 2015, Munich, Germany.

***Invited**

D. Shuldman, **L. Waller**, “Imaging microscopic sessile suspension feeders near surfaces with strong edge diffraction using digital holography,” *ECI Optics in Biology, Medicine and Surgery conference*, June 2015, Vail, CO.

L. Waller, “3D phase retrieval with computational illumination,” *OSA Computational Optical Sensing and Imaging conference*, paper CW4E.1, June 2015, Arlington, VA.

***Invited**

N. Pegard, H. Liu, N. Antipa, **L. Waller**, H. Adesnik, “Functional brain imaging at cellular resolution with compressive light-field microscopy,” *OSA Computational Optical Sensing and Imaging conference*, paper JTh4A.3, June 2015, Arlington, VA.

Y. Hu, M. Chen, L. Yeh, D. Parkinson, A. Shanker, A. MacDowell, **L. Waller**, “X-ray phase imaging and computed tomography with sandpaper analyzer,” *OSA Computational Optical Sensing and Imaging conference*, paper CM3E.6, June 2015, Arlington, VA.

H. Liu, E. Jonas, Z. Jingshan, B. Recht, **L. Waller**, “Fast algorithm for 3D localization through scattering media: forward model and physics,” *OSA High-dimensional Inverse Problems conference*, paper LT3F.3, June 2015, Arlington, VA.

A. Shanker, **L. Waller**, “Recovering curl using an iterative solver for the Transport of Intensity equation,” *OSA Imaging Systems conference*, paper ITh2A.5, June 2015, Arlington, VA.

R. Claus, P. Naulleau, A. Neureuther, **L. Waller**, “Partially coherent quantitative phase retrieval for EUV lithography,” *OSA Imaging Systems conference*, paper ITh2A.4, June 2015, Arlington, VA.

L. Yeh, L. Tian, **L. Waller**, “Experimental robustness of Fourier Ptychographic phase retrieval algorithms,” *OSA Computational Optical Sensing and Imaging conference*, paper CW4E.2, June 2015, Arlington, VA.

L. Tian, **L. Waller**, “3D Fourier Ptychographic imaging from light field measurements in an LED array microscope,” *OSA Computational Optical Sensing and Imaging conference*, paper LT3F.2, June 2015, Arlington, VA.

Z. Jingshan, P. Varma, **L. Waller**, “Source shape estimation in partially coherent phase imaging,” *OSA Computational Optical Sensing and Imaging conference*, paper CTh1E.5, June 2015, Arlington, VA.

Z. Phillips, G. Gunjala, P. Varma, J. Zhong, **L. Waller**, “Design of a domed LED illuminator for high-angle computational illumination,” *OSA Imaging Systems conference*, paper ITh1A.2, June 2015, Arlington, VA.

L. Waller, L. Tian, Z. Jingshan, P. Varma, “Phase microscopy and 3D imaging with partially coherent light,” *OSA Novel Techniques in Microscopy conference*, paper NW3C.1, April 2015, Vancouver, Canada.

***Invited**

Z. Phillips, M. D’Ambrosio, L. Tian, J. Rulison, H. Patel, N. Sadras, A. Gande, N. Switz, D. Fletcher, **L. Waller**, “Computational CellScope: Multi-contrast imaging on a smartphone-based microscope using a domed programmable LED array,” *OSA Bio-Optics: Design and Application conference*, paper BM3A.7, April 2015, Vancouver, Canada.

N. Pegard, E. Lyall, A. Mardinly, N. Antipa, **L. Waller**, H. Adesnik, “High-speed 3D brain activity quantification with compressive light-field microscopy,” *OSA Bio-Optics: Design and Application conference*, paper NW2C.3, April 2015, Vancouver, Canada.

L. Waller, H. Liu, J. Zhong, Z. Liu, L. Tian, “Optical coherence engineering for microscopy,” *SPIE Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXII conference*, paper 9330-1, February 2015, San Francisco, CA.

***Invited**

L. Tian, **L. Waller**, “Quantitative phase recovery from asymmetric illumination on an LED array microscope,” *SPIE Quantitative Phase Imaging conference*, paper 9336-9, February 2015, San Francisco, CA.

Z. Liu, L. Tian, **L. Waller**, “Multi-mode microscopy in real-time with LED array illumination,” *SPIE Quantitative Phase Imaging conference*, paper 9336-94, February 2015, San Francisco, CA.

Z. Jingshan, L. Tian, J. Dauwels, **L. Waller**, “Partially coherent phase imaging with source shape estimation,” *SPIE Quantitative Phase Imaging conference*, paper 9336-23, February 2015, San Francisco, CA.

L. Waller, L. Tian, “Multiplexed LED array microscope for fast gigapixel phase imaging,” *SPIE Optics Asia conference*, paper 9273-13, October 2014, Beijing, China.

***Invited (Keynote)**

L. Tian, **L. Waller**, “Illumination coding for fast Fourier Ptychography with large field-of-view and high resolution,” *OSA Frontiers in Optics conference*, paper FW1E.7, October 2014, Tucson, AZ.

L. Waller, L. Tian “Coherence engineering for microscopy,” *OSA Frontiers in Optics conference*, paper FW2E.3, October 2014, Tucson, AZ.

A. Shanker, M. Sczyrba, B. Connolly, A. Neureuther, **L. Waller**, “Defocus based phase imaging for quantifying electromagnetic edge effects in photomasks,” *Fraunhofer IISB Lithography Simulation workshop*, September 2014, Hersbruck, Germany.

***Invited**

H. Liu, L. Tian, **L. Waller**, “High-speed high-resolution phase-space imaging,” *OSA Imaging Systems conference*, paper JW3A.1, July 2014, Seattle, WA.

L. Tian, **L. Waller**, “Multiplexed coded illumination in Fourier Ptychography,” *OSA Imaging Systems conference*, paper IW1C.5, July 2014, Seattle, WA.

***Best Overall Paper Award**

L. Waller, “Coherence engineering,” 13th *Workshop on Information Optics*, July 2014, Neuchatel, Switzerland.

***Invited (Plenary)**

***Best Paper Award**

J. Zhong, L. Tian, J. Dauwels, **L. Waller**, “Partially coherent phase recovery with Kalman filters,” *OSA Computational Optical Sensing and Imaging conference*, paper CTu1C, June 2014, Hawaii, HI.

L. Tian, J. Wang, **L. Waller**, “Computational illumination for 3D differential phase contrast imaging,” *OSA Computational Optical Sensing and Imaging conference*, paper CM4C.4, June 2014, Hawaii, HI.

J. Wu, X. Lin, Y. Liu, L. Tian, **L. Waller**, Q. Dai, “Coded aperture pair for phase imaging,” *OSA Computational Optical Sensing and Imaging conference*, paper CTh3C.4, June 2014, Hawaii, HI.

V. Ganapati, **L. Waller**, E. Yablonovitch, “Adjoint method for phase retrieval,” *OSA Computational Optical Sensing and Imaging conference*, paper CW4C.2, June 2014, Hawaii, HI.

L. Waller, L. Tian, “Coherence measurement and synthesis in phase space,” *Electromagnetic optics with random light*, June 2014, Joensuu, Finland.

***Invited**

J. Zhong, R. Claus, J. Dauwels, L. Tian, **L. Waller**, “Non-uniform sampling and Gaussian process regression in Transport of Intensity phase imaging,” *International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, paper 1569853295, May 2014, Florence, Italy.

A. Shanker, M. Sczyrba, B. Connolly, F. Kalk, A. Neureuther, **L. Waller**, “Measuring 3D mask edge effects using phase imaging,” *CSTIC Semicon China conference*, paper 2-17, March 2014, Shanghai, China.

***Invited**

A. Shanker, **L. Waller**, “Defocus-based quantitative phase imaging by coded illumination,” *SPIE Photonics West BIOS conference*, paper 8949-27, February 2014, San Francisco, CA.

L. Waller, “Optical coherence engineering,” *HHMI Janelia Farms Shaping the Waves conference*, November 2013, Ashburn, VA.

***Invited**

J. Zhong, L. Tian, R. Claus, J. Dauwels, **L. Waller**, “Partially coherent phase recovery with Kalman filters,” *OSA Frontiers in Optics conference*, paper FW6A.9, October 2013, Orlando, FL.

P. Almero, **L. Waller**, M. Agour, C. Falldorf, G. Pedrini, W. Osten, S. Hanson, “Deterministic phase retrieval with a partially-developed speckle field illumination: principles and applications in aberration analysis,” *FRINGE conference*, paper 181, September 2013, Nurtigen, Germany.

A. Pan, J. Lee, **L. Waller**, G. Barbastathis, "Transport of Intensity imaging with wavelet intensity derivative estimation," *OSA Digital Holography and Three-Dimensional Imaging conference*, paper DW2A.20, April 2013, Hawaii.

L. Waller, "Phase imaging with partially coherent light," *SPIE Photonics West BIOS conference*, paper 8589-58, February 2013, San Francisco, CA.

L. Waller, J. W. Fleischer, "Phase-space measurements of partially coherent modulation instability," *OSA Frontiers in Optics conference*, paper FTh1E, October 2012, Rochester, NY.

S. Muenzel, **L. Waller**, J. W. Fleischer, "Lens-enhanced layered 3D displays," *OSA Frontiers in Optics conference*, paper FM4F, October 2012, Rochester, NY.

L. Waller, G. Situ, J. W. Fleischer, "Phase-space measurement of partially coherent beams using spatial spectrograms," *Progress in Electromagnetics Research Symposium*, August 2012, Moscow, Russia.

***Invited**

L. Waller, J. W. Fleischer, "Coherence synthesis with Spatial Light Modulators," *OSA Computational Optical Sensing and Imaging*, paper CTu1B.5, June 2012, Monterey, CA.

S. Muenzel, **L. Waller**, J. W. Fleischer, "Improving layered 3D displays with a lens," *OSA Computational Optical Sensing and Imaging conference*, paper JTU5A.29, June 2012, Monterey, CA.

Z. Jingshan, J. Dauwels, M. Vasquez, **L. Waller**, "Low-complexity noise-resilient recovery of phase and amplitude from defocused intensity images," *OSA Computational Optical Sensing and Imaging conference*, paper CTu4B.1, June 2012, Monterey, CA.

L. Waller, "Computational wave-field imaging with partially coherent light," *OSA Applied Industrial Optics: Spectroscopy, Imaging and Metrology conference*, paper AW3B.3, June 2012, Monterey, CA.

***Invited**

G. Situ, **L. Waller**, J. W. Fleischer, "Experimental measurement of 4D Ambiguity functions of 2D signals," *OSA Computational Optical Sensing and Imaging conference*, paper CTu1B.3, June 2012, Monterey, CA.

S. Muenzel, **L. Waller**, J. W. Fleischer, "Enhanced layered 3D with a lens," *OSA Digital Holography and Three-Dimensional Imaging conference*, paper DM2C.3, April 2012, Miami, FL.

G. Situ, **L. Waller**, J. W. Fleischer, "Generation of Ambiguity function of two-dimensional signals using windowed Fourier transform," *OSA Digital Holography and Three-Dimensional Imaging conference*, paper DTu3C.5, April 2012, Miami, FL.

P. Almoró, **L. Waller**, M. Agour, C. Falldorf, G. Pedrini, W. Osten, S. Hanson, "3D shape measurement using deterministic phase retrieval and a partially developed speckle field," *SPIE Three-Dimensional Imaging, Visualization, and Display conference*, paper 8384-25, April 2012, Baltimore, MD.

***Invited**

Z. Jingshan, J. Dauwels, M. Vazquez, **L. Waller**, "Efficient Gaussian inference algorithms for phase imaging," *IEEE Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, paper 1229, March 2012, Kyoto, Japan.

S. Davidovits, **L. Waller**, S. Muenzel, C. Sun, D. V. Dylov, J. W. Fleischer, "Instability dynamics in photonic plasma," *53rd Annual Meeting of the American Physical Society Division of Plasma Physics*, Vol. 56, No. 16, November 2011, Salt Lake City, Utah.

L. Waller, "Phase-space imaging of partially coherent beams in linear and nonlinear media," *OSA Frontiers in Optics conference*, paper FWX1, October 2011, San Jose, CA.

***Invited**

L. Waller, G. Situ, J. W. Fleischer, "Phase-space imaging of partially coherent beam propagation using a Spatial Light Modulator," *OSA Computational Optical Sensing and Imaging conference*, paper CMC4, July 2011, Toronto, Canada.

L. Waller, G. Situ, J. W. Fleischer, "Phase-space imaging of partially coherent beams with a Spatial Light Modulator," *OSA Digital Holography and Three-Dimensional Imaging conference*, paper DWC3, May 2011, Tokyo, Japan.

G. Situ, **L. Waller**, N. Pegard, J. W. Fleischer, "Fractional optics for image processing and measurement," *OSA Digital Holography and Three-Dimensional Imaging conference*, paper DWE2, May 2011, Tokyo, Japan.

***Invited**

J. Lee, J. Ku, **L. Waller**, G. Barbastathis, "Transport of intensity imaging applied to quantitative optical phase tomography," *OSA Digital Holography and Three-Dimensional Imaging conference*, paper DTuD2, May 2011, Tokyo, Japan.

***Invited**

L. Waller, D. V. Dylov, J. W. Fleischer, "Nonlinear restoration of diffused images," *OSA Novel Techniques in Microscopy conference*, paper NTuC5, April 2011, Monterey, CA.

D. V. Dylov, **L. Waller**, J. W. Fleischer, "Reconstruction of diffused images via seeded instability," *Progress in Electromagnetic Research Symposium (PIERS) conference*, session 4A1, March 2011, Marrakesh, Morocco.

L. Waller, M. Tsang, S. Ponda, G. Barbastathis, "Phase and amplitude imaging from noisy intensity measurements using a Kalman filter," *OSA Frontiers in Optics conference*, paper FTuK3, October 2010, Rochester, NY.

D. V. Dylov, **L. Waller**, J. W. Fleischer, "Nonlinear recovery of diffused images by seeded instability," *OSA Frontiers in Optics conference*, paper FME5, October 2010, Rochester, NY.

N. Loomis, **L. Waller**, G. Barbastathis, "High-speed phase recovery using chromatic Transport of Intensity computation in Graphics Processing Units," *OSA Digital Holography and Three-Dimensional Imaging conference*, paper JMA7, April 2010, Miami, FL.

L. Waller, Y. Luo, G. Barbastathis, "Quantitative phase imaging in a Volume Holographic Microscope," *Advanced Phase Measurement Methods in Optics and Imaging conference*, paper 1236, May 2010, Monte Verita, Switzerland.

***Best contribution award.**

L. Waller, G. Barbastathis, "Phase from defocused color images," *OSA Frontiers in Optics conference*, paper FThR3, October 2009, San Jose, CA.

L. Waller, L. Tian, G. Barbastathis, "Transport of intensity imaging with higher order derivatives," *OSA Computational Optical Sensing and Imaging conference*, paper CThA3, October 2009, San Jose, CA.

G. Barbastathis, **L. Waller**, S. Oh, L. Tian, N. Loomis, J. Dominguez-Caballero, "Digital holography in opto-fluidic measurements," *European Optical Society Topical Meeting on Optical Microsystems*, September 2009, Capri, Italy.

***Invited**

L. Waller, J. Kim, Y. Shao-Horn, G. Barbastathis, "Tomographic phase imaging of fuel cell systems," *OSA Optics and Photonics for Advanced Energy Technology conference*, paper ThB6, June 2009, Cambridge, MA.

L. Waller, J. Kim, Y. Shao-Horn, G. Barbastathis, "Tomographic detection of water in fuel cell systems," *OSA Frontiers in Optics conference*, paper JThB2, October 2008, Rochester, NY.

***Outstanding presentation award.**

J. Kim, **L. Waller**, G. Barbastathis, Y. Shao-Horn, "Water transport in Nafion[®] membranes measured by laser interferometry," *Electrochemical Society Meeting*, October 2009, Hawaii, HI.

E. Uccelli, **L. Waller**, G. Abstreiter, A. Fontcuberta i Morral. “Optical Properties of Ordered Self-assembled Wires, Mono- and Bi- chains of InAs Quantum Dots,” *Materials Research Society Meeting*, November 2007, Boston, MA.

G. Barbastathis, J. Milgram, R. Kostuk, J. Barton, J. Dominguez-Caballero, N. Loomis, S. Oh, **L. Waller**, J. Watson, Y. Luo, P. Gelsinger, “Digital and volume holography for imaging 3D spaces: quantitative comparison,” *SPIE Optics East conference*, paper 6778-01, September 2007, Boston, MA.

***Invited (Keynote)**

J. Kim, **L. Waller**, G. Barbastathis, Y. Shao-Horn, “Water Transport in Nafion® Membrane Measured by Laser Interferometry,” *Electrochemical Society Meeting Abstract*, October 2007, Washington, DC.

L. Waller, G. Barbastathis, “Error Analysis of Phase-Shifting for Phase and Amplitude Tomographic Reconstruction,” *OSA Computational Optical Sensing and Imaging conference*, paper CTuB5, June 2007, Vancouver, Canada.

W. Arora, W. Sun, K. Tian, P. Stellman, **L. Waller**, G. Barbastathis, “Three dimensional optics for three dimensional imaging: physics, fabrication and computation,” *Proceedings of SPIE*, Vol.6188, April 2006, Boston, MA.

***Invited**

J. Kim, **L. Waller**, G. Barbastathis, Y. Shao-Horn, “Methodology to Understand the Degradation Mechanism of Nafion® Membrane in Proton Exchange Membrane (PEM) Fuel Cells,” *Electrochemical Society Transactions* 1(8) 323-334 (2006).

L. Waller, S. Takahashi, G. Nielson, D. Seneviratne, H. Tuller, G. Barbastathis, “Microelectromechanical wavelength-selective switching for integrated optics,” *Proceedings of the American Society of Mechanical Engineers, International Mechanical Engineering Congress & Exposition*, p.525-529, November 2005, Orlando, FL.

J. Kim, **L. Waller**, G. Barbastathis, Y. Shao-Horn, “Temperature and water content measurements of Nafion® membrane in PEM fuel cells by laser interferometry,” *Electrochemical Society Meeting Abstract* 1198, Vol. 1(8), October 2005, Los Angeles, CA.

Invited Seminars

L. Waller, “Space-time models for 3D computational microscopy of dynamic samples,” *Janelia Farm Computational Optics conference*, May 2024, Washington, DC.

L. Waller, “Computational 3D Microscopy,” *Agilent Biodesign workshop*, May 2024, Berkeley, CA.

L. Waller, “Computational Microscopy,” *BETR workshop*, May 2024, Berkeley, CA.

L. Waller, “Computational Microscopy with dynamic samples,” *Monash Advanced Imaging Microscopy Seminar*, April 2024, online.

L. Waller, “Computational super-resolution phase and fluorescence microscopy with dynamic samples,” *Exploratorium Super-resolution Summit*, April 2024, San Francisco, CA.

L. Waller, “Computational imaging, from microscopes to telescopes,” *AFOSR Chief Scientist Distinguished Lecture Series*, March 2024, online.

L. Waller, “Dark secrets of computational imaging,” *Leibniz Institute of Photonic Technology*, March 2024, Jena, Germany.

L. Waller, “Computational microscopy for phase and 3D imaging,” *Max-Planck Humboldt Award Finalists seminar*, March 2024, Gottingen, Germany.

L. Waller, “Computational aberration correction,” *Advanced Imaging Methods*, January 2024, Berkeley, CA.

L. Waller, “Computational 3D fluorescence and Phase Microscopy of dynamic samples,” *Genentech*, November 2023, San Francisco, CA.

L. Waller, “Computational Microscopy,” *UC Riverside ECE seminar*, October 2023, Riverside, CA.

L. Waller, “Computational Phase Imaging in Scattering Samples,” *University of Erlangen*, September 2023, Erlangen, Germany.

L. Waller, “3D phase + fluorescence microscopy in scattering samples,” *Phase for Life workshop*, August 2023, Boston, MA.

L. Waller, “DiffuserCam: Multi-dimensional Lensless Imaging,” *International Symposium on Computational Sensing (ISCS)*, June 2023, Luxembourg.

L. Waller, “DiffuserCam: Multi-dimensional Lensless Imaging,” *5th International Forum on Computational Optical Measurement and its Education*, June 2023, China (online).

L. Waller, “DiffuserCam: Multi-dimensional Lensless Imaging,” *Rice University CAFF seminar*, April 2023, online.

L. Waller, “DiffuserCam: Multi-Dimensional Lensless Imaging,” *Berkeley Nanosciences and Nanoengineering Institute*, April 2023, Berkeley, CA.

L. Waller, “Computational microscopy,” *Miltenyi Biotec B.V. & Co. KG*, March 2023, online.

L. Waller, “3D phase imaging with thick samples,” *20th Annual Advanced Imaging Methods Workshop*, January 2023, Berkeley, CA.

L. Waller, “Computational aberration correction,” *AFOSR Program Review*, December 2022, Washington, DC.

L. Waller, “Computational 3D microscopy with scattering samples,” *Duke seminar*, October 2022, Durham, NC.

L. Waller, “3D phase microscopy with scattering samples,” *Special Semester on Tomography Across the Scales, Austrian Academy of Sciences*, October 2022, Linz, Austria.

L. Waller, “Computational microscopy,” *Cornell Biomedical Engineering seminar*, September 2022, Ithaca, NY.

L. Waller, “3D phase microscopy with scattering samples,” *Institute for Pure and Applied Mathematics (IPAM) UCLA*, October 2022, Los Angeles, CA.

L. Waller, “Computational phase imaging,” *ARCNL (Advanced Research Center for Nanolithography) seminar*, September 2022, Amsterdam, Netherlands (online).

L. Waller, “CMS and engineering,” *UCLA IPAM Opening day*, September 2022, Los Angeles, CA.

L. Waller, “Computational microscopy,” *Human Technopole seminar*, July 2022, Milan, Italy (online).

L. Waller, “Computational microscopy,” *EPSRC Center in Applied Photonics seminar*, June 2022, Edinburgh, Scotland (online).

L. Waller, “Computational microscopy for compact neural activity tracking,” *Structured Light in the Brain meeting*, June 2022, Boston, MA.

L. Waller, “Computational metrology,” *BETR center workshop*, May 2022, Berkeley, CA.

L. Waller, “Computational microscopy,” *NSF Institute for Artificial Intelligence and Fundamental Interactions (IAIFI)*, May 2022, online.

L. Waller, “Computational microscopy for imaging in scattering,” *Chan-Zuckerberg Initiative Imaging Meeting*, May 2022, San Francisco, CA.

L. Waller, “3D Phase and fluorescence microscopy with scattering samples,” *Optica CLEO conference Tech Talk*, May 2022, San Jose, CA.

L. Waller, “Computational microscopy,” *Chan-Zuckerberg Biohub seminar*, April 2022, San Francisco, CA.

L. Waller, “Computational microscopy,” *Tufts University Biomedical Engineering seminar*, April 2022, online.

L. Waller, “Computational microscopy,” *University of Toronto Physics colloquium*, April 2022, Toronto, Canada.

L. Waller, “Computational microscopy,” *Berkeley Artificial Intelligence Research (BAIR) Visual Computing Workshop*, March 2022, Berkeley, CA.

L. Waller, “Computational microscopy,” *Simons Foundation*, March 2022, New York City, NY.

L. Waller, “Computational microscopy,” *University College London Computer Graphics seminar*, February 2022, online.

L. Waller, “Computational imaging for miniature microscopes,” *Miniscope workshop*, November 2021, online.

L. Waller, “Computational microscopy,” *Frontiers in Biomedical Imaging & Image Analysis Lecture Series, Max-Delbrück-Center*, November 2021, Berlin, Germany.

L. Waller, “End-to-end learning for computational microscopy systems,” *International Conference on Computer Vision (ICCV) workshop on Learning for Computational Imaging*, October 2021, online.

L. Waller, “3D miniature microscopes for neural activity tracking,” *Rocky Mountain Summit on Wearable Miniature Microscopes*, August 2021, online.

L. Waller, “3D Phase and fluorescence microscopy with scattering samples,” *Joint Symposia on Optics, Optical Society of Korea Summer Annual Meeting*, August 2021, online.

L. Waller, “Computational 3D fluorescence microscopy,” *3rd Light Microscopy Australia Meeting*, August 2021, online.

L. Waller, “End-to-end learning for computational microscopy,” *Flatiron Computational Methods and Data Science Journal Club*, June 2021, online.

L. Waller, “Computational Microscopy,” *Rudolf Virchow Center for Integrative and Translational Bioimaging, Julius-Maximilians-University Würzburg*, May 2021, online.

L. Waller, “End-to-end learning for computational microscopy,” *EPFL Seminar Series in Imaging*, May 2021, online.

L. Waller, “End-to-end learning for computational microscopy,” *IEEE EMBS Grand Challenges in Data Science and Engineering in Healthcare: Medical Imaging*, February 2021, online.

L. Waller, “Physics-constrained Computational Imaging,” *Carnegie-Mellon University (CMU) Artificial Intelligence in Physics (AIP) seminar series*, February 2021, online.

L. Waller, “End-to-end learning for computational microscopy,” *Stanford Information Systems Laboratory Colloquium*, February 2021, online.

L. Waller, “Computational microscopy for neural activity tracking,” *Boston University Neurophotonics Center Symposium*, January 2021, online.

L. Waller, “End-to-end learning for computational microscopy,” *Janelia Farm Computation & Theory Seminar*, December 2020, online.

L. Waller, “Computational Microscopy,” *UC Berkeley BETR workshop*, November 2020, online.

L. Waller, “End-to-end learning for computational microscopy,” *Rochester Goergen Institute for Data Science (GIDS)*, November 2020, online.

L. Waller, “Computational 3D microscopy,” *IEEE Boston Photonics Society*, November 2020, online.

L. Waller, “End-to-end learning for computational microscopy,” *MIT Optics and Quantum Electronics (OQE) seminar*, November 2020, online.

L. Waller, “End-to-end learning for computational microscopy,” *Washington University in St. Louis ESE seminar series*, November 2020, online.

L. Waller, “Computational fluorescence microscopy,” *Department of Biostatistics & Medical Informatics at the University of Wisconsin-Madison*, October 2020, online.

L. Waller, “Computational 3D fluorescence microscopy,” *Colorado School of Mines Colloquium Series*, October 2020, online.

L. Waller, “End-to-End Learning for Computational Microscopy,” *Oak Ridge National Lab Center for Nanophase Materials Science seminar*, August 2020, online.

L. Waller, “End-to-end learning for computational microscopy,” *IEEE Signal Processing and Computational Image Formation (SPACE) webinar*, June 2020, online.

L. Waller, “Computational 3D microscopy,” *University of Rochester Optics seminar*, April 2020, online.

L. Waller, “Computational microscopy in scattering media,” *UC Berkeley Solid State seminar series*, March 2020, Berkeley, CA.

L. Waller, “Computational microscopy,” *Google Computational Imaging workshop*, February 2020, San Francisco, CA. ***Keynote**

L. Waller, “3D phase microscopy with scattering samples,” *Advanced Imaging Methods workshop*, February 2020, Berkeley, CA.

L. Waller, “Learning reconstructions for computational microscopy,” *Berkeley Artificial Intelligence Research (BAIR) workshop*, December 2019, Berkeley, CA.

L. Waller, “Light field displays,” *CIVO workshop*, October 2019, Berkeley, CA.

L. Waller, “Computational microscopy,” *Institute for Mathematics and its Applications (IMA) Computational Imaging workshop*, October 2019, Minneapolis, MN.

L. Waller, “Computational microscopy,” *Bay Area Vision Research Day (BAVRD)*, September 2019, Berkeley, CA.

L. Waller, “3D computational microscopy with multiple-scattering samples,” *Lawrence Berkeley National Lab (LBNL) Molecular Foundry User Meeting*, August 2019, Berkeley, CA.

L. Waller, “Computational phase imaging,” *Ptychography Developer workshop*, June 2019, Berkeley, CA.

L. Waller, “Computational high-throughput microscopy,” *System 1 Biosciences*, May 2019, San Francisco, CA.

L. Waller, “Physics-constrained computational imaging,” *Machine Learning in Physics workshop*, May 2019, Berkeley, CA.

L. Waller, “Computational microscopy in multiple-scattering samples,” *Stanford Optics & Electronics seminar*, May 2019, Stanford, CA.

L. Waller, “Computational microscopy,” *Berkeley Emerging Technologies Research (BETR) workshop*, April 2019, Berkeley, CA.

L. Waller, “Computational microscopy for phase, super-resolution and 3D imaging,” *Stanford Physics colloquium*, April 2019, Stanford, CA.

L. Waller, “Computational microscopy for quantitative phase imaging,” *Berkeley Stem Cell Center retreat*, April 2019, Asilomar, CA.

L. Waller, “Computational microscopy,” *Berkeley Artificial Intelligence Research workshop*, March 2019, Sonoma, CA.

L. Waller, “Computational phase microscopy,” *QB3 Science lunch*, March 2019, Berkeley, CA.

L. Waller, “Machine learning working together with physics for computational microscopy,” *FODA lunch*, February 2019, Berkeley, CA.

L. Waller, “Computational microscopy,” *Lam Research Corporation*, January 2019, Fremont, CA.

L. Waller, “Computational microscopy,” *University of Arizona College of Optical Sciences Winter School*, January 2019, Tucson, AZ.

L. Waller, “Lensless computational imagers,” *UCLA Department of Electrical and Computer Engineering seminar*, December 2018, Berkeley, CA.

L. Waller, “Computational microscopy,” *NeuroHub meeting*, December 2018, Berkeley, CA.

L. Waller, “Computational phase microscopy,” *Chan-Zuckerberg Initiative Biohub Investigators lunch*, November 2018, San Francisco, CA.

L. Waller, “Computational microscopy,” *Marine Biological Laboratory (MBL) Workshop on Enabling Biological Discovery through Innovations in Imaging and Computation*, November 2018, Woods Hole, MA.

L. Waller, “Computational imaging,” *Rice University*, November 2018, Houston, TX.

L. Waller, “Computational microscopy for neural read and write,” *Kavli Futures Symposium: Next-Gen Neurotechnology for Research and Medicine*, October 2018, Santa Monica, CA.

L. Waller, “Computational microscopy,” *Photonics Media webinar*, October 2018.

L. Waller, “DiffuserCam: 3D lensless computational imaging,” *iNOW conference*, July 2018, Berkeley, CA.

L. Waller, “Computational microscopy for neural activity tracking,” *Gordon Research Conference on Optogenetic approaches to understanding neural circuits and behavior*, July 2018, Sunday River, ME.

L. Waller, “Computational microscopy,” *IBM Research Distinguished Speaker series*, May 2018, San Jose, CA.

L. Waller, “Fast 3D computational fluorescence microscopy,” *Advanced Methods of Imaging conference*, January 2018, Berkeley, CA.

L. Waller, “Computational microscopy,” *Berkeley Artificial Intelligence Research (BAIR) workshop*, March 2018, Berkeley, CA.

L. Waller, “Computational phase retrieval,” *Stanford Optimized arbitrary and reconfigurable optics workshop*, November 2017, Stanford, CA.

L. Waller, “Computational microscopy,” *Berkeley Distinguished Lectures in Data Science series*, October 2017, Berkeley, CA.

L. Waller, “3D computational phase microscopy,” *Frontiers of Electron Tomography workshop*, October 2017, Berkeley, CA.

L. Waller, “Computational microscopy,” *Hertz Fellowship retreat*, October 2017, Petaluma, CA.

L. Waller, “Computational microscopy,” *IEEE Asilomar Optimization Methods for Image Processing*, October 2017, Asilomar, CA.

L. Waller, “Computational imaging for 3D microscopy,” *Silicon Valley ACM SIGGRAPH seminar*, October 2017, Santa Clara, CA.

L. Waller, “Computational microscopy,” *CS Kickstart*, August 2017, Berkeley, CA.

L. Waller, “Computational microscopy,” *NSF Energy Efficient Electronics Science seminar*, July 2017, Berkeley, CA

L. Waller, “Computational microscopy,” *Chan-Zuckerberg Initiative Biohub seminar*, July 2017, Berkeley, CA

L. Waller, “Computational microscopy,” *IEEE Signal Processing Society*, June 2017, Santa Clara, CA.

S. Chowdhury, L. Waller, “Computational microscopy,” *Agilent Technologies Inc.*, June 2017, San Jose, CA.

L. Waller, “3D fluorescence microscopy,” *Boston University Photonics Center*, June 2017, Boston, MA.

L. Waller, “Computational microscopy for neural activity tracking,” *Sculpted Light in the Brain conference*, June 2017, Berkeley, CA.

L. Waller, “Computational microscopy for 3D fluorescence imaging,” *Janelia Research Campus Deep Tissue Imaging conference*, June 2017, Ashburn, VA.

L. Waller, “Computational microscopy for neural activity tracking,” *4D Advanced Microscopy of Brain Circuits*, May 2017, Berkeley, CA.

L. Waller, “Computational microscopy for neural activity tracking,” *Johannes Kepler University Linz*, May 2017, Linz, Austria.

L. Waller, “Brightfield and phase contrast microscopy,” *Marine Biological Laboratory (MBL) Analytical and Quantitative Light Microscopy course*, May 2017, Woods Hole, MA.

L. Waller, “Computational microscopy,” *KLA-Tencor Engineering Conference*, May 2017, Monterey, CA.

L. Waller, “Computational microscopy,” *CITRIS seminar series*, March 2017, Berkeley, CA.

L. Waller, “Computational microscopy,” *Vanderbilt Biophotonics Seminar Series*, March 2017, Nashville, TN.

L. Waller, “Computational microscopy for neural activity tracking,” *Berkeley Brainstorming Future Neurotechnologies*, March 2017, Berkeley, CA.

L. Waller, “Computational microscopy,” *Berkeley Artificial Intelligence Research (BAIR) seminar*, February 2017, Berkeley, CA.

L. Waller, “Computational microscopy,” *Advanced Imaging Methods workshop*, February 2017, Berkeley, CA.

L. Waller, “Computational microscopy,” *Engineering Sciences seminar*, November 2016, Berkeley, CA.

L. Waller, “Computational microscopy for phase retrieval,” *Neyman Seminar, UC Berkeley Department of Statistics*, November 2016, Berkeley, CA.

L. Waller, “Computational microscopy for real-time 3D neural activity tracking,” *Gordon Conference on Imaging Science*, June 2016, Stonehill, MA.

L. Waller, “Gigapixel phase microscopy,” *SIAM imaging minisymposium*, May 2016, Albuquerque, NM.

L. Waller, “Computational microscopy for gigapixel-scale imaging,” *University of Arizona College of Optical Sciences Colloquium Lecture series*, April 2016, Tucson, AZ.

L. Waller, “3D computational imaging in scattering,” *Stanford Biomedical Computation (BCATS) Symposium (Keynote)*, April 2016, Stanford, CA.

L. Waller, “Computational microscopy for gigapixel-scale imaging,” *Yale University Applied Physics Department seminar*, March 2016, New Haven, CT.

L. Waller, “Computational microscopy for gigapixel-scale imaging,” *Berkeley Wireless Research Center*, March 2016, Berkeley, CA.

L. Waller, “3D computational imaging in scattering with light fields,” *MIT EECS department*, February 2016, Cambridge, MA.

L. Waller, “Computational imaging for gigapixel microscopy,” *Google*, February 2016, Mountain View, CA.

L. Waller, “Large-scale computational microscopy,” *Advanced Imaging Methods workshop*, February 2016, Berkeley, CA.

L. Waller, “Computational microscopy for gigapixel-scale imaging,” *KLA-Tencor*, January 2016, Milpitas, CA.

L. Waller, “3D computational microscopy,” *Stanford SCIEN seminar series*, December 2015, Stanford, CA.

L. Waller, “Computational microscopy for gigapixel-scale imaging,” *MIT EECS department*, November 2015, Cambridge, MA.

L. Waller, “Gigapixel phase microscopy,” *Rice University ECE Colloquium*, November 2015, Houston, TX.

L. Waller, “Computational imaging,” *Computer Science Colloquium*, November 2015, Sonoma, CA.

L. Waller, “Computational illumination for 3D high-resolution phase imaging,” *Dagstuhl seminar on Computational Imaging*, May 2015, Dagstuhl, Germany.

L. Waller, “Nonlinear inverse problems in computational imaging,” *Berkeley Institute of Data Science seminar*, May 2015, Berkeley, CA.

L. Waller, “Computational optical imaging and microscopy,” *NSF Systems, Information, Learning and Optimization NSF Workshop*, May 2015, Berkeley, CA.

L. Waller, “Real-time and in vitro Gigapixel phase microscopy,” *Stanford Bioengineering departmental seminar series*, April 2015, Stanford, CA.

L. Waller, “Fourier Ptychography for real-time and 3D phase imaging,” *Caltech Bioengineering department*, March 2015, Pasadena, CA.

L. Waller, “Low-rank methods for 3D imaging,” *Princeton Applied Math Colloquium*, March 2015, Princeton, NJ.

L. Waller, “In vitro phase microscopy,” *Berkeley QB3 lunch series*, March 2015, Berkeley, CA.

L. Waller, “Computational illumination for 3D phase microscopy,” *Berkeley BEARS EECS Annual Research Symposium*, February 2015, Berkeley, CA.

L. Waller, “Computational illumination for high-resolution 3D phase microscopy,” *Advanced Imaging Methods workshop*, February 2015, Berkeley, CA.

L. Waller, “Big data methods for computational imaging,” *SLAC National Accelerator Laboratory*, December 2014, Stanford, CA.

L. Waller, “Fourier Ptychography for 3D and gigapixel phase imaging,” *Advanced Light Source seminar series, LBNL*, December 2014, Berkeley, CA.

L. Waller, “Computational microscopy for 3D and gigapixel phase imaging,” *UCLA California NanoSystems Institute*, November 2014, Los Angeles, CA.

L. Waller, “Big data methods for computational microscopy: phase and 3D imaging,” *Stanford SPIE/OSA student chapter seminar series*, November 2014, Stanford, CA.

L. Waller, “Computational microscopy for 3D and gigapixel phase imaging,” *UCB/UCSF Bioengineering Retreat*, November 2014, Yosemite, CA.

L. Waller, “3D and phase imaging for metrology,” *UC Berkeley Solid-state seminar*, September 2014, Berkeley, CA.

L. Waller, “Computational microscopy,” *Carl Zeiss*, September 2014.

L. Waller, “Computational microscopy for 3D imaging,” *QB3 UC San Francisco/UC Berkeley Microscopy course*, August 2014, San Francisco, CA.

L. Waller, “3D phase microscopy with computational illumination,” *Workshop on Information Optics*, July 2014, Lausanne, Switzerland.

L. Waller, “Computational microscopy for 3D and gigapixel phase imaging,” *Children’s Hospital Oakland seminar series*, June 2014, Oakland, CA.

L. Waller, “Computational and 3D imaging,” *Shanghai Institute of Optics and Fine Mechanics (SIOM)*, March 2014, Shanghai, China.

L. Waller, “Algorithms for phase retrieval,” *Networking, Communications and DSP seminar*, April 2014, Berkeley, CA.

L. Tian, **L. Waller**, “Computational illumination,” *Controlling light in complex media incubator meeting*, March 2014, Washington, DC.

L. Waller, “Computational imaging,” *BSAC Industrial Advisory Board meeting*, March 2014, Berkeley, CA.

L. Tian, J. Wang, **L. Waller**, “Computational imaging and 3D phase,” *California Photonics Workshop*, February 2014, Berkeley, CA.

L. Waller, “3D microscopy,” *Stanford Mechano-biology seminar*, January 2014, Berkeley, CA.

L. Waller, “Computational microscopy for phase and depth measurement,” *Advanced Imaging Methods workshop*, January 2014, Berkeley, CA.

L. Waller, “Phase imaging for lithography,” *KLA-Tencor Inc.*, December 2013, Santa Clara, CA.

L. Waller, “Computational microscopy for 3D and phase imaging,” *Intel*, December 2013, Santa Clara, CA.

L. Waller, “Computer science in imaging,” *UC Berkeley CS Kickstart program*, August 2013, Berkeley, CA.

L. Waller, “Optical signal processing,” *UC Berkeley Signal Processing seminar*, May 2013, Stanford, CA.

L. Waller, “Computational imaging,” *UC Berkeley COE Industrial Advisory Board*, April 2013, Berkeley, CA.

L. Waller, “Nonlinear imaging,” *San Francisco State Physics colloquia*, April 2013, San Francisco, CA.

L. Waller, “Computational optical imaging for metrology,” *UC Berkeley Solid-state seminar*, April 2013, Berkeley, CA.

L. Waller, “Phase imaging: a tutorial,” *SureScan Corp.*, March 2013, Endicott, NY.

L. Waller, “Optics,” *UC Berkeley Digital Photography course*, March 2013, Berkeley, CA.

L. Waller, “Nonlinear dynamics for imaging with partially coherent light,” *UC Berkeley Atomic Molecular Optical Physics seminar series*, February 2013, Berkeley, CA.

L. Waller, “Phase imaging with partially coherent light,” *Stanford Center for Image Systems Engineering (SCIEN) seminar*, December 2012, Stanford, CA.

L. Waller, “Computational imaging for metrology,” *Mentor Graphics*, December 2012, Fremont, CA.

L. Waller, “Computational imaging with partially coherent light,” *University of Colorado at Boulder Computational Optical Sensing and Imaging seminar series*, November 2012, Boulder, CO.

L. Waller, “Computational optical imaging,” *UC Berkeley Graphics seminar*, November 2012, Berkeley, CA.

L. Waller, A. Shanker, A. Neureuther, “Computational imaging for metrology,” *IMPACT program workshop*, October 2012, San Jose, CA.

L. Waller, “Computational wave-field imaging,” *Stanford University*, April 2012, Stanford, CA.

L. Waller, “Computational wave-field imaging,” *College of Optics and Photonics*, April 2012, Orlando, FL.

L. Waller, “Computational wave-field imaging,” *Harvard University*, March 2012, Cambridge, MA.

L. Waller, “Computational wave-field imaging,” *Boston University*, March 2012, Boston, MA.

L. Waller, “Computational wave-field imaging,” *Institute of Photonic Sciences*, March 2012, Barcelona, Spain.

L. Waller, “Computational wave-field imaging,” *Duke University*, March 2012, Durham, NC.

L. Waller, “Computational microscopy,” *Virginia Tech*, March 2012, Roanoke, VA.

L. Waller, “Computational microscopy,” *VU University*, March 2012, Amsterdam, Netherlands.

L. Waller, “Computational wave-field imaging,” *UC Berkeley*, February 2012, Berkeley, CA.

L. Waller, “Computational wave-field imaging,” *UC San Diego*, February 2012, San Diego, CA.

L. Waller, “Computational wave-field imaging,” *Johns Hopkins University*, February 2012, Baltimore, MD.

L. Waller, “New methods of computational microscopy for phase retrieval, phase-space optics and nonlinear imaging,” *University of Texas*, January 2012, Dallas, TX.

L. Waller, “Computational imaging of waves,” *Harvard Rowland Institute*, January 2012, Cambridge, MA.

L. Waller, “Nonlinear dynamics for imaging,” *University of Maryland Applied Dynamics seminar series*, November 2011, College Park, MD.

L. Waller, “Computational phase imaging from intensity transport,” *Karlsruhe Institute of Technology ANKA synchrotron facility seminar series*, August 2011, Karlsruhe, Germany.

L. Waller, “Computational imaging based on intensity transport,” *Institute of Applied Optics*, August 2011, Stuttgart, Germany.

L. Waller, “Applied complex-field imaging,” *École Polytechnique Fédérale de Lausanne (EPFL)*, March 2010, Lausanne, Switzerland.

L. Waller, “Applied complex-field imaging,” *University of Arizona College of Optical Sciences*, February 2010, Tucson, AZ.

L. Waller, N. Loomis, “Real-time approaches for quantitative non-traditional imaging techniques in biological applications: Phase from Intensity Measurements,” in *Singapore Microscopy and Optics Seminars*, January 2010, Singapore, Singapore.

L. Waller, “Complex-field imaging,” *University of Colorado at Boulder*, November 2009, Boulder, CO.

L. Waller, “Phase from defocused color images,” *MIT OSA seminar series*, October 2009, Cambridge, MA.