

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

Assistant Professor, University of California at Berkeley, Berkeley, CA

07/2012 – present

*Department of Electrical Engineering and Computer Sciences
Affiliate, UCB/UCSF Bioengineering Graduate Group
Affiliate, California Institute for Quantitative Biosciences (QB3)
Affiliate, Applied Science & Technology (AS&T)
Senior Fellow, Berkeley Institute of Data Science (BIDS)*

Postdoctoral Research Associate, Princeton University, Princeton, NJ

06/2010 – 06/2012

Nonlinear Photonics group, Department of Electrical Engineering

Research Assistant, MIT, Cambridge, MA

09/2004 – 06/2010

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

Researcher, Technical University of Munich, Garching, Germany

08/2007 – 11/2007

Advanced Nanostructures Lab, Walter Schottky Institute

Researcher, Queen's University, Kingston, Canada

06/2004 – 09/2004

Lightwave Systems Group, Department of Engineering and Applied Science

Undergraduate researcher, MIT, Cambridge, MA

05/2002 – 09/2003

Speech Group, Research Laboratory of Electronics

Teaching

Assistant Professor, Department of EECS, UC Berkeley

EE 225A Statistical Digital Signal Processing

Spring 2015, Spring 2016

EE 118/218A Introduction to Optical Engineering

Spring 2014, Fall 2014, Fall 2015

Undergraduate and graduate optics course (3 units, two 1.5 hour lectures/week, ~30 students)

EECS 84 Hands-on optics

Fall 2013, Spring 2016

Sophomore seminar building fun optics gadgets (1 unit, 2 hours/week, ~15 students)

EE 119 Introduction to Optical Engineering

Spring 2013

Advanced undergraduate optics course (3 units, two 1.5 hour lectures/week, ~20 students)
EE 290F Computational Optical Imaging Fall 2012
Introduced new advanced graduate course (3 units, two 1.5 hour lectures/week, ~30 students)

Lecturer, Department of Physics, Princeton University

PHYS 103 General Physics I Fall 2011
Preceptor for introductory physics course (three 1 hour lectures/week, ~20 students)

Participant, Teaching Excellence Colloquium, UC Berkeley

2012 - 2013
Attended ~8 workshops throughout the year to learn new teaching techniques.

Participant, McGraw Center Teaching Transcript, Princeton University

2010 - 2012
Attended workshops and participated in classroom teaching evaluation program.

Instructor, MIT Women's Technology Program, MIT

2005 - 2006
Prepared and taught 28 lectures and labs (1.5 hours, twice daily) over two summers, with the help of three undergraduate assistants, as part of an Electrical Engineering course for 40 elite students.

Achievements

- Carol D. Soc Distinguished Graduate Student Mentoring Award for Junior Faculty 2016
- Ted Van Duzer Endowed Professorship of EECS 2016-2020
- Best Paper Award, *International Conference on Computational Photography* 2016
- National Academy of Engineering Frontiers of Engineering Participant 2016
- Agilent Early Career Professor Award Finalist for Big Data Technologies in Imaging 2016
- Packard Fellow, David and Lucile Packard Foundation 2014
- Moore Foundation Data-driven Discovery Investigator Award 2014
- Best Student Paper Award (Rene Claus), *SPIE Photomask Technology conference* 2015
- Best Student Paper Award (Aamod Shanker), *SPIE Advanced Lithography conference* 2015
- Best Paper Award, *Workshop in Information Optics* 2014
- Best Overall Paper Award, *OSA Imaging Systems conference* 2014
- NSF CAREER Award 2014
- Bakar Fellow 2014
- Award for Outstanding Service by an OSA Young Professional
- Award for best contribution, *International Conference on Advanced Phase Measurement*
- Outstanding Student Presentation Award, *OSA Annual Meeting*
- MIT George J. Leness Undergraduate Scholarship
- MIT Alumni Association Committee Member
- Miller Thompson Award, Queen's Chancellor's Scholarship, Nortel Networks Award (declined)
- B'nai Brith Award for Excellence in Athletics and Academics
- MIT Women's Varsity soccer team, Cambridge University UCCW Soccer team

Service

UC Berkeley

Packard Fellowship internal selection committee (2015).

Non-ionizing radiation safety committee (2015).

Nano-neuro faculty search committee member, Berkeley Nanosciences and Nanoengineering Institute (2014).

SURF Undergraduate Fellowship Selection committee (2014).

EECS department prelim committee, DSP (2013, 2014, 2015, 2016), OPTO (2015).
EECS graduate admissions committee (2013, 2014, 2015, 2016).
Regent's and Chancellor's Scholarship interviews (2013, 2015).
Regent's Scholarship faculty mentor (2013-).
Faculty advisor to the Photobears student chapters of OSA and SPIE (2013-).

Conference Chair

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.
OSA Optogenetics Incubator Meeting, December 2013, Washington, DC.

Conference Program Committee Member

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 conference, July 2016, Heidelberg, Germany.
SPIE DSS: Computational Imaging Conference, April 2016, Baltimore, MD.
SPIE Multidimensional Microscopy, January 2016, San Francisco, CA.
OSA Imaging Systems conference, 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 conference, June 2014, Kohala Coast, HI.
OSA Imaging Systems conference, June 2014, Seattle, WA.
OSA Signal Recovery and Synthesis conference, June 2014, Seattle, WA.
OSA Frontiers in Optics, Optics in Information Processing subcommittee, October 2014, Tuscon, AZ.
OSA Imaging Systems conference, June 2013, Arlington, VA.
OSA Frontiers in Optics, Optics in Information Processing subcommittee, October 2013, Orlando, FL.
Asia Communications and Photonics conference, November 2012, Gunagzhou, China.
OSA Imaging Systems and Applications conference, June 2012, Monterey, CA.

IEEE Special Interest Group on Computational Imaging 2015

Grant proposal reviewer 2015

NIH BRAIN: New Concepts for Large-Scale Recording and Modulation in the Nervous System (R21)

Technical Group Development Chair, Optical Society of America (OSA) 2013-2015

Voting member of the OSA Board of Meetings, ensuring the effectiveness of technical groups.

Young Professional, Optical Society of America (OSA)

Organizer for the 2011 and 2012 student chapter Leadership Meetings, served on award and grant review committees session chair, conference presider (COSI, IS, FiO) and blogger.

Reviewer:

Nature Photonics, Nature Communications, ACM SIGGRAPH, Optica, Proceedings of the National Academy of Sciences, Biomedical Optics Express, IEEE Transactions on Computational Imaging, Optics Letters, Optics Express, Journal of Biomedical Optics, Applied Optics, 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, IEEE Transactions on Image Processing, International Journal of Computer Vision.

Outreach

- Society of Women Engineers Mini-University session 2016
- IEEE Student-Faculty lunches participant
- Panelist for Women in Machine Learning and Data Science meet up 2015
- Helping to organize EECS Rising Stars workshop for women
- Speaker for UC Berkeley Computer Science Kickstart 2013 (incoming female Freshman)
- Speaker at EECS undergraduate seminar “Approaching faculty for research opportunities” 2013
- Attend EECS graduate Women in Computer Science and Engineering (WICSE) lunches and events
- Engaged with Association of Women in Engineering (AWE) undergraduate club
- Organized Photobears optics event for Bay Area Science Festival 2013

Students supervised

Graduate students

Gautam Gunjala (EECS)	2016 -	
Grace Kuo (EECS)	2016 -	*co-advised R. Ng, NDSEG fellowship
Teresa Ou (EECS)	2015 -	*co-advised M. Lustig
Regina Eckert (EECS)	2015 -	*Berkeley fellow, NSF GRFP
Jinkyu Kim (EECS)	2015	*co-advised B. Barsky
Henry Pinkard (Computational Biology)	2015	
Li-Hao Yeh (EECS)	2014 -	
Nicholas Antipa (EECS)	2014 -	*co-advised R. Ng
Michael Chen (EECS)	2014 -	
Zachary Phillips (AS&T)	2014 -	
Hsiou-Yuan Liu (EECS)	2014 -	
Rene Claus (AS&T)	2013 – 2015	*co-advised P. Naulleau (now at TSMC)
Ryan Orendorff (Bioengineering)	2013	*NSF GRFP
Daniel Shuldman (AS&T)	2013 –	*NSF GRFP + DOE SCGF fellowship
Aamod Shanker (EECS)	2012 –	*co-advised A. Neureuther

Postdoctoral researchers and visiting scholars

Yongbing Zhang	2016	*Chinese Overseas Fund Scholar
Volker Jaedicke (PhD, Aachen 2014)	2015 -	*Gateway Fellowship
Jonathan Dong (ENS Paris)	Summer 2015	
Nicolas Pegard (PhD, Princeton 2014)	2014 –	*co-advised H. Adesnik (Neuroscience)
Jingshan Zhong (PhD, NTU 2014)	2013 – 2016	
Hao Yu (PhD, Tsinghua 2008)	2014 – 2015	*CSC Scholar
Chenguang Ma (Tsinghua visitor)	2014 - 2015	*CSC Scholar
Ziji Liu (PhD, UESTC 2012)	2014 – 2015	*CSC Scholar
Lei Tian (PhD, MIT 2013)	2013 –	

Undergraduate students

Yishuang (Jane) Liang (EECS)	Summer 2016	
Sachin Deyoung (Mech Eng)	Summer 2016	
Taehyung Kim (EECS)	Summer 2016	
Chase Porter (EECS)	2016 -	
Kuan Chang (EECS)	2015 –	
Maximillian Gerlock (EECS)	2015	(now at Pandora)
Joel Whang (EECS)	2015 -	

Jaynath Devarajan (EECS)	2015 –	
Sylvia Necula (Georgia Tech)	Summer 2015, Summer 2016	
Camille Biscarrat (EECS)	Summer 2015	
Jingzhao Zhang (EECS)	2015 – 2016	
Nopphon Siranart (EECS)	Spring 2015	*Eaton Award
Jonathan Silberstein (BioEng)	2015	
Sudarshan Seshadri (EECS)	2015 - 2016	
Jared Rulison (EECS)	2013 – 2015	
Paroma Varma (EECS)	2013 – 2015	*Hopkin Award (now PhD at Stanford)
Gautam Gunjala (EECS)	2013 – 2016	*Regent’s Scholar, Eaton Award
Aditya Gande (EECS)	2013 – 2015	*Regent’s Scholar
Nitin Sidras (EECS)	2014 – 2015	*Regent’s Scholar
Sijia Liu (EECS)	2013 – 2015	(now at LinkedIn)
Hurshal Patel (EECS)	2014 – 2014	
Jingyan Wang (EECS) (now PhD at CMU)	2013 – 2014	*Hopkin, Eaton Award, Department Citation
Diivanand Ramalingam (EECS)	2013 – 2014	(now at Microsoft)
Antonella Wilby (UCSD)	Summer 2013	*NSF SUPURB REU
Zhifei Wang (Zhejiang University)	Summer 2013	

M. Eng graduate students

Ryan Frazier (EECS)	2014 - 2015
Ying Ou (EECS)	2014 – 2015
Mark Hardiman (EECS)	2014 - 2015
Longxiang Cui (EECS)	2014 - 2015
Zeyi Lee (EECS)	2014 - 2015

PhD thesis committee member, UC Berkeley

Geoffrey Schiebinger (Statistics)	2016
Paul Keselman (Bioengineering)	2015 –
Thomas Barter (Physics)	2014 –
Jeongmin Kim (Mechanical Engineering)	2014 –
Jae Yeon (Claire) Baek (EECS)	2013 - 2015
Christy Sheehy (Vision Sciences)	2012 – 2015
Maryam Vareth (Bioengineering)	2012

Qualifying exam committee, UC Berkeley

Brett Kelly (Mechanical Engineering)	2016
Nicole Repina (Bioengineering)	2016
Ryan Orendorff (Bioengineering)	2015
David Barth (Mechanical Engineering)	2015
Xuexin Ren (AS&T)	2015
Ywo-Gwo Wang (EECS)	2015
Jason Horng (Physics)	2015
Peng Zheng (EECS)	2015
Kavitha Ratnam (Vision Sciences)	2014
Thomas Barter (Physics)	2014
Julea Vlassakis (Bioengineering)	2014
Jeongmin Kim (Mechanical Engineering)	2014
Ying Wang (AS&T)	2014
Vidya Ganapati (EECS) - Chair	2013

Jae Yeon Claire Baek (EECS)	2013
Wenwen Jiang (Bioengineering)	2013
Paul Keselman (Bioengineering)	2013
Maryam Vareth (Bioengineering)	2012

Prelim exam committee, UC Berkeley

Zachary Phillips (AS&T)	2015
Kasra Nowrouzi (AS&T)	2015

MS Thesis Reviewer, UC Berkeley

Rick Chao, M.S. (EECS)	2013
Wein Chien (Bioengineering)	2013
Suchit Bhattarai (EECS)	2013

M.Eng Report Reader, UC Berkeley

Ryan Kashi (EECS)	2016
Alagu Haribhaskaran (EECS)	2016
Jiayuan Chen (EECS)	2016

Patents

L. Waller, G. Barbastathis, “Phase from defocused color images,” US Patent No. 8,432,553, 2013(2010).

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

J. Zhong, L. Tian, J. Dauwels, **L. Waller**, “Partially coherent phase recovery,” International Patent App. WO 2015/179452 (2015).

L. Tian, **L. Waller**, “Fourier Ptychography with multiplexed illumination,” US Patent App. 62/000,520 (2014).

M. Chen, L. Yeh, **L. Waller**, “Patterned-illumination systems adopting a computational illumination,” US Patent Provisional App. 62/109,240 (2014).

L. Waller, N. Pegard, H. Adesnik, “Compressive plenoptic microscopy,” US Patent Provisional App. 62/188,626 (2015).

Z. Phillips, M. Chen, **L. Waller**, “Optical Phase Retrieval Systems using Color-Multiplexed Illumination,” US Patent Provisional App. 62/323,461 (2016).

Journal Publications

N. Pegard, H. Liu, N. Antipa, M. Gerlock, H. Adesnik, **L. Waller**, “Compressive light-field microscopy for 3D neural activity recording,” *Optica* 3(5), 517-524 (2016).

Z. Jingshan, L. Tian, P. Varma, **L. Waller**, “Nonlinear optimization algorithm for partially coherent phase retrieval and source recovery,” *IEEE Transactions on Computational Imaging*, (2016).

G. Dardikman, M. Habaza, **L. Waller**, N. Shaked, “Video-rate processing in tomographic phase microscopy of biological cells using CUDA,” *Optics Express* 24(11), 11839-11854 (2016).

R. Horstmeyer, R. Heintzmann, G. Popescu, **L. Waller**, C. Yang, “Standardizing the resolution claims for coherent microscopy,” *Nature Photonics* 10(2), 68-71 (2016). [not peer-reviewed]

L. Yeh, J. Dong, Z. Jingshan, L. Tian, M. Chen, G. Tang, M. Soltanolkotabi, **L. Waller**, “Experimental robustness of Fourier ptychography phase retrieval algorithms,” *Optics Express* 23(26), 33212-33238 (2015).

- L. Tian, Z. Liu, L. Yeh, M. Chen, Z. Jingshan, **L. Waller**, "Computational illumination for high-speed *in vitro* Fourier ptychographic microscopy," *Optica* 2(10), 904-911 (2015).
- L. Waller**, L. Tian, "3D Imaging: Machine learning for 3D microscopy," *Nature News & Views* 523, 416-417 (2015). [not peer-reviewed]
- R. Claus, **L. Waller**, "Quantitative phase retrieval algorithm for arbitrary pupil and illumination," *Optics Express* 23(20), 26672-26682 (2015).
- H. Liu, E. Jonas, L. Tian, Z. Jingshan, B. Recht, **L. Waller**, "3D imaging in volumetric scattering media using phase-space measurements," *Optics Express* 23(11), 14461-14471 (2015).
***also selected for Virtual Journal for Biomedical Optics**
- Z. Phillips, M. D'Ambrosio, L. Tian, J. Rulison, H. Patel, N. Sadras, A. Gande, N. Switz, D. Fletcher, **L. Waller**, "Multi-contrast imaging and digital refocusing on a mobile microscope with a domed LED array," *PLOS ONE* (2015).
- Y. Zhang, W. Jiang, L. Tian, **L. Waller**, Q. Dai, "Self-learning based Fourier Ptychographic Microscopy," *Optics Letters* 23(14), 18471-18486 (2015).
- C. Ma, Z. Liu, L. Tian, Q. Dai, **L. Waller**, "Motion deblurring with temporally coded illumination in an LED array microscope," *Optics Letters* 40(10), 2281-2284 (2015).
- L. Tian, **L. Waller**, "Quantitative differential phase contrast imaging in an LED array microscope," *Optics Express* 23(9), 11394-11403 (2015).
- L. Tian, **L. Waller**, "3D intensity and phase imaging from light field measurements in an LED array microscope," *Optica* 2(2), 104-111 (2015).
- C. Zuo, Q. Chen, L. Tian, **L. Waller**, A. Asundi, "Transport of Intensity phase retrieval and computational imaging for partially coherent fields: The phase space perspective," *Optics and Lasers in Engineering*, 0143-8166 (2015).
- Z. Jingshan, L. Tian, J. Dauwels, **L. Waller**, "Partially coherent phase imaging with simultaneous source recovery," *Biomedical Optics Express* 6(1), 257-265 (2014).
- Y. Zhu, A. Shanker, L. Tian, **L. Waller**, G. Barbastathis, "Low-noise phase imaging by hybrid uniform and structured illumination transport of intensity equation," *Optics Express* 22(22), 26696-26711 (2014).
***also selected for Virtual Journal for Biomedical Optics**
- Z. Liu, L. Tian, S. Liu, **L. Waller**, "Real-time brightfield, darkfield and phase contrast imaging in an LED array microscope," *Journal of Biomedical Optics* 19(10), 106002 (2014).
- A. Shanker, L. Tian, M. Sczyrba, B. Connolly, A. Neureuther, **L. Waller**, "Transport of Intensity phase imaging in the presence of curl effects induced by strong absorption," *Applied Optics* 53(34), J1-J6 (2014).
- L. Tian, X. Li, K. Ramchandran, **L. Waller**, "Multiplexed coded illumination for Fourier Ptychography with an LED array microscope," *Biomedical Optics Express* 5(7), 2376-2389 (2014).
- Z. Jingshan, R. Claus, J. Dauwels, L. Tian, **L. Waller**, "Transport of intensity phase imaging by intensity spectrum fitting of unequally spaced defocus planes," *Optics Express* 22(9), 10661-10674 (2014).
- L. Tian, J. Wang, **L. Waller**, "3D differential phase contrast microscopy with computational illumination using an LED array," *Optics Letters*, 39(5), 1326-1329 (2014).
***also selected for Virtual Journal for Biomedical Optics**
- Z. Jingshan, J. Dauwels, M. A. Vasquez, **L. Waller**, "Sparse Augmented Complex Extended Kalman Filter (ACEKF) for phase reconstruction," *Optics Express* 21(15), 18125-18137 (2013).
- L. Waller**, D. V. Dylov, and J. W. Fleischer, "Quantitative amplification of weak images by nonlinear propagation," *Optics Letters* 38(2), 82-84 (2013).

L. Waller, G. Situ, J. W. Fleischer, "Phase-space measurement and coherence synthesis of optical beams," *Nature Photonics* 6, 474-479 (2012).

*see also: *News & Views* by M. Testorf, "Optical signal processing: Musical score for optical signals".

C. Sun, **L. Waller**, D. V. Dylov, J. W. Fleischer, "Spectral dynamics of spatially incoherent modulation instability," *Physical Review Letters* 108, 263902 (2012).

P. F. Almero, **L. Waller**, M. Agour, C. Falldorf, G. Pedrini, W. Osten, S. G. Hanson, "Enhanced deterministic phase retrieval using a partially-developed speckle field," *Optics Letters*, 37(11), 2088-2090 (2012).

D. V. Dylov, **L. Waller**, J. W. Fleischer, "Nonlinear restoration of diffused images via seeded instability," *IEEE Journal of Selected Topics in Quantum Electronics* 18(2), 916-925 (2012).

D. V. Dylov, **L. Waller**, J. W. Fleischer, "Instability-driven recovery of diffused images," *Optics Letters* 36(18), 3711-3713 (2011).

S. Kou, **L. Waller**, G. Barbastathis, P. Marquet, C. Depeursinge, C. Sheppard, "Quantitative phase restoration from direct inversion of the optical transfer function," *Optics Letters* 36(14), 2671-2673 (2011).

L. Waller, M. Tsang, S. Ponda, G. Barbastathis, "Phase and amplitude imaging from noisy images by Kalman filtering," *Optics Express* 19(3), 2805-2814 (2011).

L. Waller, S. Kou, C. Sheppard, G. Barbastathis, "Phase from chromatic aberrations," *Optics Express* 18(22), 22817-22825 (2010).

*also selected for **Virtual Journal for Biomedical Optics**

L. Waller, Y. Luo, S. Yang, G. Barbastathis, "Transport of Intensity phase imaging in a Volume Holographic Microscope," *Optics Letters* 35(17), 2961-2963 (2010).

*also selected for **Virtual Journal for Biomedical Optics**

L. Waller, L. Tian, G. Barbastathis, "Transport of Intensity phase-amplitude imaging with higher order intensity derivatives," *Optics Express* 18(12), 12552-12561 (2010).

C-H. Chang, **L. Waller**, G. Barbastathis, "Design and optimization of broadband wide-angle antireflecting structures for binary diffractive optics," *Optics Letters* 35(7), 907-909 (2010).

E. Uccelli, **L. Waller**, M. Bichler, G. Abstreiter, A. Fontcuberta i Morral, "Optical properties of InAs quantum dot array ensembles with predetermined lateral sizes from 20 to 40 nm," *Japanese Journal of Applied Physics* 49, 045201 (2010).

S. Kou, **L. Waller**, G. Barbastathis, C. Sheppard, "A Transport-of-Intensity approach to Differential Interference Contrast (TI-DIC) Microscopy for quantitative phase imaging," *Optics Letters* 35(3), 447-449 (2010).

L. Waller, J. Kim, Y. Shao-Horn, G. Barbastathis, "Interferometric tomography of fuel cells for monitoring membrane water content," *Optics Express* 17(17), 14722-14728 (2009).

Journal-equivalent Conference Proceedings

**some communities that we work in (e.g. computer science, lithography) consider competitive conference submissions as the main mechanism for presenting new and complete peer-reviewed content*

N. Antipa, S. Necula, R. Ng, **L. Waller**, "Single-shot diffuser-encoded light field imaging," *International Conference on Computational Photography*, paper 57, April 2016, Chicago, IL.

***Best Paper Award**

R. Claus, Y. Wang, A. Wojdyla, M. Benk, K. Goldberg, A. Neureuther, P. Naulleau, **L. Waller**, "Phase retrieval algorithms for patterned mask metrology in EUV," *SPIE Photomask Technology conference*, paper 9635-14, October 2015, San Jose, CA.

***Best Student Paper Award**

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.

R. Claus, A. Wojdyla, M. Benk, K. Goldberg, A. Neureuther, P. Naulleau, **L. Waller**, “Measuring aberrations using EUV mask roughness,” *SPIE Optical Microlithography XXVIII conference of Advanced Lithography*, paper 9422-39, February 2015, San Jose, CA.

R. Claus, A. Wojdyla, M. Benk, K. Goldberg, A. Neureuther, P. Naulleau, **L. Waller**, “Phase measurements of EUV mask defects,” *SPIE Optical Microlithography XXVIII conference of Advanced Lithography*, paper 9422-42, February 2015, San Jose, CA.

A. Shanker, M. Sczyrba, B. Connolly, F. Kalk, A. Neureuther, **L. Waller**, “Characterizing the dependence of thick-mask edge effects on feature size and illumination angle using AIMS images,” *SPIE Optical Microlithography XXVIII conference of Advanced Lithography*, paper 9426-23, February 2015, San Jose, CA.

***Best Student Paper Award**

R. Claus, A. Neureuther, P. Naulleau, **L. Waller**, “Effect of amplitude roughness on EUV mask specifications,” *SPIE Photomask Technology conference*, paper 9235-45, October 2014, Monterey, CA.

A. Shanker, M. Sczyrba, B. Connolly, F. Kalk, A. Neureuther, **L. Waller**, “Critical assessment of the Transport of Intensity method for phase recovery of photomask edge effects,” *SPIE Optical Microlithography XXVII conference of Advanced Lithography*, paper 9052-49, February 2014, San Jose, CA.

R. Claus, A. Neureuther, **L. Waller**, P. Naulleau, “Predicting LER PSD caused by mask roughness using a mathematical model,” *SPIE Optical Microlithography XXVII conference of Advanced Lithography*, February 2014, San Jose, CA.

A. Shanker, M. Sczyrba, B. Connolly, F. Kalk, A. Neureuther, **L. Waller**, “Analysis of edge effects in attenuating phase-shift masks using quantitative phase imaging,” *SPIE Photomask Technology conference*, September 2013, Monterey, CA.

Conference Proceedings

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.

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.

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. Almero, **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, "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.