

PHOTONICS SOCIETY 2018 Program-At-A-Glance

SUNDAY, 30 September 2018

Registration & Speaker Check-in Hours: 8:00 AM – 6:00 PM in Grand Ballroom Foyer

9:00 AM – 12:00 PM Frontiers of Photonics

Grand Ballroom B/C

Session Chairs: Nikola Alic, *University of California, San Diego, USA*
Zetian Mi, *University of Michigan, Ann Arbor, USA*

This session will open the 2018 conference with an exploration of the latest trends and emerging areas of our ever-evolving field.

Speakers:

Enrique Calleja, *Polytechnical University of Madrid, Spain*
Steven Cundiff, *University of Michigan, Ann Arbor, USA*
Lionel Vayssieres, *Xi'an Jiaotong University, China*

1:00 PM – 3:00 PM Emerging Opportunities in Photonics Research

Grand Ballroom B/C

Session Chairs: Mario Dagenais, *University of Maryland, College Park, USA*
Zetian Mi, *University of Michigan, Ann Arbor, USA*

This session features presentations by program managers from government funding agencies to discuss their vision for future photonics research, which is followed by a panel-based and moderated discussion on the emerging opportunities and grand challenges of photonics research, development, and commercialization. This session involves strong audience participation to discuss the emerging themes in photonic-based sciences and technologies with significant societal benefit.

Speakers:

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| Claire Cramer, <i>DOE Office of Science, USA</i> | Dominique Dagenais, <i>NSF, USA</i> |
| Kristy DeWitt, <i>IARPA, USA</i> | Michael Gerhold, <i>Army Research Office, USA</i> |
| Gordon Keeler, <i>DARPA MTO, USA</i> | Steven Konsek, <i>NSF, USA</i> |
| Robert Saperstein, <i>DARPA STO, USA</i> | |

3:30 PM – 5:30 PM Hot Topics in Photonics Research, Collaboration, and Professional Development

Grand Ballroom B/C

Session Chairs: Mario Dagenais, *University of Maryland, College Park, USA*
Zetian Mi, *University of Michigan, Ann Arbor, USA*

This session focuses on some of the hottest topics in photonics research presented by leading researchers from industry and government labs, who will also discuss opportunities for collaboration and for professional development, particularly for young professionals in photonics.

Speakers:

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| Albert Davydov, <i>National Institute of Standards and Technology, Maryland, USA</i> | Jungsang Kim, <i>IonQ, Inc., USA</i> |
| Michael Krainak, <i>NASA Goddard Space Flight Center, Maryland, USA</i> | Mo Soltany, <i>Raytheon BBN Technologies, Massachusetts, USA</i> |
| Kartik Srinivasan, <i>National Institute of Standards and Technology, Maryland, USA</i> | Keith Williams, <i>US Naval Research Lab, USA</i> |

A cocktail reception will precede the event for all participants

MONDAY, 1 OCTOBER 2018

Registration & Speaker Check-in Hours: 7:30 AM - 5:00 PM in the Grand Ballroom Foyer

8:00 AM - 4:00 PM IEEE Photonics Society Member Appreciation Day

Lake Fairfax A/B

As a thank you for your dedication, IEEE Photonics Society members are welcome to visit the member lounge all day. Come to the IEEE Photonics Members-only lounge to sit down, relax and grab a snack and connect to the internet. Throughout the day, leaders of the Society will provide members with free goodies and volunteer information.

Not a member of IEEE Photonics? Learn more about how you can join the society by stopping by the lounge.

| Grand Ballroom A | Grand Ballroom B | Grand Ballroom C | Regency Ballroom A | Regency Ballroom B | Lake Anne A/B | Lake Audubon | Lake Thoreau | Reston A/B <i>Industry Day</i> <i>*Recorded Sessions</i> |
|--|--|--|--|---|---|---|--|---|
| 8:30am-9:45am MA1 OC/SS SDMT 1 Advanced OAM and SDM/WDM Chair: Y. Awaji | 8:30am-10:00am MB1 PSSI 1 Avalanche Photodetectors Chair: D. Prather | 8:30am-10:00am MC1 SL 1 New Applications of Semiconductor Lasers Chair: L. Mawst | 8:30am-9:45am MD1 PIP 1 Photonic Integration Chair: T. Tekin | 8:30am-10:00am ME1 BIO 1 Optical Coherence Tomography Chair: M. Villiger | 8:30am-10:00am MF1 OMND 1 Emerging Microresonator Devices OMND TUT Lan Yang Chair: F. Vollmer | 8:30am-10:00am MG1 SS MPD 1 Microwave Photonics Technologies for Defense Chair: T. A. Nirmalathas | 8:30am-10:15am MH1 HPIS 1 Attosecond Science Chair: E. J. Takahashi | 9:00am-10:00am MI1 Perils, Pitfalls and Pleasures: Turning Research Into a Real Product Chair: M. Raburn |
| EXHIBITS & COFFEE BREAK 10:00 AM - 10:30 AM Grand Ballroom Foyer | | | | | | | | |
| 10:30am-11:30am MA2 OC/SS SDMT 2 High Density SDM Transmission Chair: T. Hayashi | 10:30am-12:00pm MB2 PSSI 2 Novel Photodetectors Chair: J. Campbell | 10:30am-12:00pm MC2 Nanowire Lasers and VCSELs & SL TUT Cun-Zheng Ning Chair: N. Tansu | | 10:30am-12:00pm ME2 BIO 2 Single Particle Optics and Optofluidics Chair: R. Leitgeb | 10:30am-12:00pm MF2 OMND 2 Microresonator and Photonic Crystal Devices Chair: M. Loncar | 10:30am-12:00pm MG2 SS MPD 2 Microwave Photonics Technologies for Radar Chair: C. Lim | 10:30am-12:00pm MH2 HPIS 2 Laser-based Accelerators and Colliders Chair: O. D. Mücke | 10:30am-12:00pm MI2 Realities of Photonics: From Design to Fabrication to Packaging Chair: M. Raburn |
| 12:00 PM – 1:30 PM LUNCH (on own) | | | | | | | | |
| 1:30pm-2:30pm MA3 OC TUT Erik Agrell Chair: H. Batshon | 1:30pm-3:00pm MB3 PSSI 3 High Speed Photodetectors and Systems Chair: J. S. Ng | 1:30pm-2:30pm MC3 SL 2 Wide Bandgap Lasers Chair: J. Meyer | 1:30pm-2:45pm MD3 Award Winning Photonics Science and Technology I Chair: C. Menoni | 1:30pm-2:45pm ME3 BIO 3 Computational Imaging and Image Computation Chair: G. Scarcelli | 1:30pm-2:45pm MF3 OMND 3 Microresonator Devices Chair: A. Adibi | | 1:30pm-3:00pm MH3 NLUO 1 Silicon Photonics Chair: P. Schunemann | 1:30pm-3:00pm MI3 The Global Startup Scene Chair: D. Novak |
| EXHIBITS & COFFEE BREAK 3:00 PM – 3:30 PM Grand Ballroom Foyer | | | | | | | | |
| 3:30pm-4:45pm MA4 SS SDMT 1 Steps Toward Practicality of SDM Chair: Y. Awaji | 3:30pm-5:00pm MB4 PSSI 4 High Power & UTC Detectors Chair: J. Duran | 3:30pm-5:00pm MC4 SL 3 Quantum Cascade and High Power Lasers Chair: M. Kneissl | | 3:30pm-5:00pm ME4 BIO 4 Advanced Microscopy Chair: N. Lippok | 3:30pm-5:00pm MF4 OMND 4 Nonlinear Microresonators Chair: S. Papp | | 3:30pm-5:00pm MH4 HPIS/NLUO 1 High-energy Sources and Applications Chair: C. L. Arnold | 3:30pm-5:00pm MI4 Tech Titans: Words of Wisdom, War Stories and Crystal Balls Chairs: M. Raburn & S. Poole |
| 7:00 PM - 9:00 PM IEEE Photonics Society Welcome and Awards Banquet Dinner | | | | | | | Grand Ballroom D/E/F/G | |
| Session Chair: Amr Helmy, University of Toronto, Canada | | | | | | | | |

TUESDAY, 2 OCTOBER 2018

Registration & Speaker Check-in Hours: 8:00 AM - 5:00 PM in the Grand Ballroom Foyer

| Grand Ballroom A | Grand Ballroom B | Grand Ballroom C | Regency Ballroom A | Regency Ballroom B | Lake Anne A/B | Lake Audubon | Lake Thoreau |
|---|--|---|---|---|--|---|---|
| 8:30am-10:00am TuA1 OC 1 Optical Transceivers Chair: G. Bosco | 8:30am-10:00am TuB1 PSSI TUT David Ting Chair: A. Sarangan | 8:30am-10:00am TuC1 SL 4 Integration Technologies Chair: F. Grillot | 8:30am-9:45am TuD1 PIP 2 Silicon Photonics and Packaging Chair: L. Augustin | 8:30am-10:00am TuE1 BIO 5 Photothermal, Fluorescence Lifetime, and Brillouin Imaging Chair: J. Wu | 8:30am-10:00am TuF1 OMND 5 Microresonator Sensors and Metrology Chair: P. Del'Haye | 8:30am-10:00am TuG1 NANO 1 Nanophotonic Light Emission Chair: A. Salandrino | 8:30am-10:00am TuH1 NLUO 2 Solid-State & Fiber Lasers Chair: E. Potma |

EXHIBITS & COFFEE BREAK 10:00 AM - 10:30 AM Grand Ballroom Foyer

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|---|--|---|--|--|---|--|--|
| 10:30am-12:00pm TuA2 OC 2 Modulation and Detection Chair: Q. Hu | 10:30am-12:00pm TuB2 PSSI 5 Imaging Sensors Chair: T. Tiecek | 10:30am-12:00pm TuC2 SL 5 Ultrafast Lasers Chair: TBD | 10:30am-11:45am TuD2 PIP 3 Optical Modulators Chair: J. Schmid | 10:30am-12:00pm TuE2 Imaging Through Scattering and Aberrating Tissues & BIO TUT Sylvain Gigan Chair: P. Munro | 10:30am-11:30am TuF2 OMND 6 Modelling of Microresonator Structures Chair: M. Sumetsky | 10:30am-12:00pm TuG2 NANO 2 Plasmonics Chair: T. Purdy | 10:30am-12:00pm TuH2 NLUO 3 Combs & Nanophotonics Chair: T. Sudmeyer |
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12:00 PM – 1:30 PM Lab Automation Hackathon **Registration Required*
Organizers: Nick Fontaine & Roland Ryf, Nokia Bell Labs, USA

Grand Ballroom F/G

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| 1:30pm-3:00pm TuA3 Award Winning Photonics Science and Technology II Chair: C. Menoni | 1:30pm-3:00pm TuB3 PSSI 6 Colloidal Detectors and Sensors Chair: G. Balakrishnan | 1:30pm-3:15pm TuC3 SL 6 Novel Lasers Chair: S. Breuer | 1:30pm-3:00pm TuD3 OFT 1 Chalcogenide and Microstructured Fibers Chair: W. Forysiak | 1:30pm-3:00pm TuE3 MWP 1 Radio-over-Fiber for 5G and Novel Devices Chair: M. Burla | 1:30pm-3:00pm TuF3 PMM 1 Nitride Materials and Devices Chair: Z. Mi | 1:30pm-3:00pm TuG3 NANO 3 Silicon Photonics Chair: R. Singh | 1:30pm-3:00pm TuH3 NLUO 4 Imaging & Microscopy Chair: M. Kauranen |
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EXHIBITS & COFFEE BREAK 3:00 PM – 3:30 PM Grand Ballroom Foyer

3:30 PM - 5:00 PM Plenary Session I - TuI4 **Live-Streamed*
Grand Ballroom D

Session Chair: Amr Helmy, University of Toronto, Canada

3:30 PM – 4:15 PM Manijeh Razeghi, Northwestern University, Illinois, USA

4:15 PM – 5:00 PM Christopher Contag, Michigan State University, Michigan, USA

WEDNESDAY, 3 OCTOBER 2018

Registration & Speaker Check-in Hours: 8:00 AM - 5:00 PM in the Grand Ballroom Foyer

| Grand Ballroom A | Grand Ballroom B | Grand Ballroom C | Regency Ballroom A | Regency Ballroom B | Lake Anne A/B | Lake Audubon | Lake Thoreau |
|--|--|--|---|--|---|--|---|
| 8:30am-10:00am WA1 OC 3 Free-space Optical Communications Chair: I. Djordjevic | 8:30am-10:00am WB1 OI 1 Optical Transceiver Technology Chair: J. Ryckman | 8:30am-10:00am WC1 NANO 4 Thermal Photonics and Optomechanics Chair: M. Li | 8:30am-10:00am WD1 New Fiber Designs & OFT TUT John Ballato Chair: M. Brodsky | 8:30am-9:45am WE1 MWP 2 Microwave Photonics Devices and Comb Generations Chair: W. Loh | 8:30am-9:30am WF1 ONS 1 Next-generation Data Centers Chair: I. Roudas | 8:30am-10:00am WG1 PMM 2 III-V Materials and Devices Chair: K.M. Lau | 8:30am-9:30am WH1 Photonics in Space Chair: Q. McCormick |

EXHIBITS & COFFEE BREAK 10:00 AM - 10:30 AM Grand Ballroom Foyer

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|--|---|--|---|--|--|---|---|
| 10:30am-12:00pm WA2 OC 4 Optical Amplification and Processing Chair: D. Caplan | 10:30am-11:45am WB2 OI 2 Novel Packaging and Waveguide Technology Chair: J. Doyle | | 10:30am-12:00pm WD2 OFT 2 Novel Applications Chair: N. Joly | 10:30am-12:00pm WE2 MWP 3 Transmitter/Receiver for Microwave Photonics Applications Chair: M. Hutchinsom | 10:30am-11:30am WF2 Probabilistic Shaping & SS CS TUT Sethumadhavan Chandrasekhar Chair: I. Djordjevic | 10:30am-12:00pm WG2 PMM 3 Novel Photonic Materials and Metamaterials Chair: A. Belyanin | 10:30am-12:00pm WH2 DISL 1 MicroLEDs and Display Technologies Chair: N. Laurand |
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12:00 PM – 1:30 PM

IEEE Photonics Fund Luncheon *Registration Required

Lake Fairfax A/B

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| 1:30pm-3:00pm WA3 OC 5 DSP and Equalization Chair: G. Bosco | 1:30pm-3:00pm WB3 NANO 5 Spin Photonics Chair: Z. Lui | 1:30pm-2:45pm WC3 SS IPIS 1 SS Integrated Photonics & Information Security Chair: A. Foster | 1:30pm-3:00pm WD3 OFT 3 Modes and Propagation Chair: M. Rochette | 1:30pm-3:00pm WE3 THz Photonics & MWP TUT Alwyn Seeds Chair: R. DeSalvo | 1:30pm-3:00pm WF3 SS CS 1 Constellation Shaping Chair: I. Djordjevic | 1:30pm-2:45pm WG3 PMM 4 Flexible Photonic Materials Chair: A. Belyanin | 1:30pm-2:30pm WH3 DISL 2 Phosphors and Long Wavelength GaN Materials Chair: Y. Dong |
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EXHIBITS & COFFEE BREAK 3:00 PM – 3:30 PM Grand Ballroom Foyer

3:30 PM - 5:00 PM Plenary Session II - WI4 *Live-Streamed

Grand Ballroom D

Session Chair: Amr Helmy, University of Toronto, Canada

3:30 PM – 4:15 PM Ian Walmsley, University of Oxford, Oxford, UK

4:15 PM – 5:00 PM Jim Kafka, Spectra-Physics, California, USA

6:00 PM - 8:00 PM Poster Session / Student & Young Professionals Poster Competition

Grand Ballroom E/ F/ G

Session Chair: Carmen Menoni, Colorado State University, USA

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Student & Young Professionals Job Fair

Free events for registered attendees. Complimentary food & beverages will be served.

THURSDAY, 4 OCTOBER 2018

Registration & Speaker Check-in Hours: 8:00 AM - 10:00 AM in the Grand Ballroom Foyer

| Grand Ballroom A | Grand Ballroom B | Grand Ballroom C | Regency Ballroom A | Regency Ballroom B | Lake Anne A/B | Lake Audubon | Lake Thoreau |
|------------------|--|--|---|--|---|---|---|
| | 8:30am-9:30am ThB1 OI/ONS 1 Emerging Concepts in Optical Interconnects Chair: A. Foster | 8:30am-10:00am ThC1 OC/SS IPIS 1 Secure Communications Chair: E. Temprana | 8:30am-9:45am ThD1 OFT 4 Fiber Sensing Chair: M. Li | 8:30am-9:30am ThE1 MWP 4 Microwave Photonics Subsystems Chair: J. Kalkavage | 8:30am-10:00am ThF1 ONS 2 High Capacity Flexible Optical Networks Chair: F. Gunning | 8:30am-9:15am ThG1 PMM/NANO 1 Metamaterials and Imaging Chair: TBD | 8:30am-10:00am ThH1 DISL 3 Perovskites, QDs and Hybrid Devices Chair: H. Sun |

EXHIBITS & COFFEE BREAK 10:00 AM - 10:30 AM Grand Ballroom Foyer

10:30 AM - 12:00 PM IPC CLOSING CEREMONY **Live-Streamed*

Grand Ballroom D

BEST STUDENT PAPER & POSTER AWARDS

POST-DEADLINE SESSION

Session Chair: Carmen Menoni, *Colorado State University, USA*

SEE YOU IN 2019!

29 SEPTEMBER – 3 OCTOBER

32ND ANNUAL IEEE PHOTONICS CONFERENCE

SAN ANTONIO, TEXAS, USA