



# 2019 Ultrashort Pulse Laser-Matter Interactions Program Review

Dr. Andrew Strickrath | June 10-13, 2019 | Arlington, VA

Basic Research Innovation and Collaboration Center (BRICC)  
4100 North Fairfax Drive, Suite 450 | Arlington, VA 22203  
June 10 – 12, 2019

## Agenda Day 1 | June 10, 2019

Time	Topic	Speaker
8:00-8:30	Registration	
8:30-9:00	Welcome Remarks	Andrew Strickrath <i>Air Force Office of Scientific Research</i>
9:00-9:30	Multi-Soliton Microcomb Physics for Efficient Sensing and Precision Measurement	Kerry Vahala <i>California Institute of Technology</i>
9:30-10:00	Fundamental Dynamics and Mechanisms for Ultrafast Laser-Materials Interaction	Steve Yalisove <i>University of Michigan</i>
10:00-10:30	BREAK	
10:30-11:00	Cavity-Enhanced High Harmonic Generation for Attosecond Dynamics at Surfaces	Thomas Allison <i>SUNY Stony Brook</i>
11:00-11:30	High-order Harmonic and Attosecond Spectroscopy in Materials	Mike Chini <i>University of Central Florida</i>
11:30-12:00	Attosecond electron dynamics in metallic nanoparticles, metallic surfaces, and nanoparticles-covered metallic surfaces	Guillaume Laurent <i>Auburn University</i>
12:00-1:30	LUNCH	
1:30-2:00	Recollision physics at the nanoscale	Carlos Trallero <i>University of Connecticut</i>
2:00-2:30	Illumination Emergent Quantum Materials by Attosecond Pulses	Madhab Neupane <i>University of Central Florida</i>
2:30-3:00	Advancing Attosecond Solid State Physics Towards Petahertz Electronics	Matthew Weidman <i>Max Planck Institute of Quantum Optics</i>
3:00-3:30	BREAK	
3:30-4:00	Linking Attosecond Science in Solids and Gases	Paul Corkum <i>National Research Council of Canada</i>
4:00-4:30	Fundamentals of Femtosecond Laser Induced Damage of Solids	Enam Chowdhury <i>Ohio State University</i>
4:30	MEETING ADJOURN	

Agenda Day 2   June 11, 2019		
Time	Topic	Speaker
8:00-8:30	Registration	
8:30-9:00	Real-Time Four Dimensional Hyperspectral Imaging of Plasmas and Filamentation	Daniel Adams <i>Colorado School of Mines</i>
9:00-9:30	Picosecond CO2 Laser Filamentation in Air	Sergei Tochitsky <i>University of California, Los Angeles</i>
9:30-10:00	Intense Terahertz Field Generation and Its Interaction with Matter	Kiyong Kim <i>University of Maryland</i>
10:00-10:30	BREAK	
10:30-11:00	Extreme Nonlinear Optics of High Intensity Laser Pulse Filamentation in Gases	Howard Milchberg <i>University of Maryland</i>
11:00-11:30	Spatio-temporal visualization and control of nonlinear propagation and phase matching for high-order harmonic generation	Bonggu Shim <i>SUNY Binghamton</i>
11:30-12:00	RF Emission from Femtosecond Filament Plasmas Interacting with External Electric Fields	Andreas Schmitt-Sody <i>Air Force Research Laboratory / Directed Energy Directorate</i>
12:00-1:30	LUNCH	
1:30-2:00	Directed High Energy Radiation and Particle Beams Generated Using Extreme Magnetic Fields	Alexey Arefiev <i>University of California, San Diego</i>
2:00-2:30	Ultrafast Laser-Based Spectroscopic Techniques for Investigating Reacting Flows	Hans Stauffer <i>Spectral Energies, LLC</i> <i>Air Force Research Laboratory / Aerospace Systems Directorate</i>
2:30-3:00	The Science of Extreme Light Generation of X-rays from Liquid Targets at Relativistic Conditions	Mel Roquemore <i>Air Force Research Laboratory / Aerospace Systems Directorate</i>
3:00-3:30	BREAK	
3:30-4:00	Ultra-Relativistic Laser Interaction with Ordered Nanoarrays	Jorge Rocca <i>Colorado State University</i>
4:00-4:30	Finding Quantum Processes in Strongly Relativistic Fields	Manuel Hegelich <i>University of Texas, Austin</i>
4:30	MEETING ADJOURN	

Agenda Day 3   June 12, 2019		
Time	Topic	Speaker
8:00-8:30	Registration	
8:30-9:00	Frequency Comb Spectroscopy – From IR to XUV	Jun Ye <i>University of Colorado</i>
9:00-9:30	Dual-comb Intra-cavity High Harmonic Generation for XUV Spectroscopy	Jason Jones <i>University of Arizona</i>
9:30-10:00	Fundamental Studies of Microresonator-Based Parametric Frequency Combs	Alex Gaeta <i>Columbia University</i>
10:00-10:30	BREAK	
10:30-11:00	Modeling the Dynamics, Stability and Tunability of Optical Frequency Combs	Nathan Kutz <i>University of Washington</i>
11:00-11:30	Controlling Ultrafast Dynamics and Modelocking in Kerr Microcombs	Scott Diddams <i>National Institute of Standards and Technology, Boulder</i>
11:30-12:00	Kerr Frequency Combs: Applications of Coherent Communication, Signal Processing and Measurement	Alan Willner <i>University of Southern California</i>
12:00-1:30	LUNCH	
1:30-2:00	Microresonator-Based Optical Frequency Combs: Initiation, Characterization, Control	Andrew Weiner <i>Purdue University</i>
2:00-2:30	Exploring Temporal Soliton Physics in Micro-Resonator Frequency Combs	Tobias Kippenberg <i>École Polytechnique Fédérale de Lausanne</i>
2:30-2:45	Closing Remarks	Andrew Stickrath <i>Air Force Office of Scientific Research</i>
2:45	MEETING ADJOURN	