

# Ultrashort Pulse Laser-Matter Interactions Program Review 2015

Dr. Riq Parra | June 1-3, 2016 | Arlington, VA

Basic Research Innovation and Collaboration Center (BRICC)  
4075 Wilson Blvd., Suite 350 | Liberty Room  
Arlington, VA 22203

## Agenda Day 1 – June 1, 2016

Time	Title of Project	Speaker
7:30-8:00	<b>Registration</b>	
8:00-8:30	<b>Welcome Remarks</b>	Riq Parra, AFOSR
8:30-9:00	Controlling Ultrafast Dynamics and Modelocking in Kerr Microcombs	Scott Diddams, NIST
9:00-9:30	Microresonator-Based Optical Frequency Combs: Initiation, Characterization, Control	Andrew Weiner, Purdue
9:30-10:00	<b>BREAK</b>	
10:00-10:30	Fundamental Studies of Microresonator-Based Parametric Frequency Combs	Alex Gaeta, Columbia
10:30-11:00	Sub-Cycle Optical Pulse Synthesis and Stabilization in Next-Generation Optical Frequency Combs	Shu-Wei Huang, UCLA
11:00-11:30	22 GHz, Low Pump Power Solitons in Silica On-Chip Resonators	Kerry Vahala, Caltech
11:30-1:00	<b>LUNCH</b>	
1:00-1:30	Exploring Temporal Soliton Physics in Micro-Resonator Frequency Combs	Tobias Kippenberg, EPFL
1:30-2:00	Kerr Frequency Combs: Applications of Coherent Communication, Signal Processing and Measurement	Alan Willner, USC
2:00-2:30	RF Emission from Femtosecond Filament Plasmas Interacting with External Electric Fields	Andreas Schmitt-Sody, AFRL/RD
2:30-3:00	<b>BREAK</b>	
3:00-3:30	Dual-comb Intra-cavity High Harmonic Generation for XUV Spectroscopy	Jason Jones, U of Arizona
3:30-4:00	Cavity-Enhanced High Harmonic Generation for Attosecond Dynamics at Surfaces	Thomas Allison, Stony Brook
4:00	<b>MEETING ADJOURNED FOR THE DAY</b>	

## Agenda Day 2 – June 2, 2016

Time	Title of Project	Speaker
<b>7:30-8:00</b>	<b>Registration</b>	
<b>8:00-8:30</b>	Linking Attosecond Science in Solids and Gases	Paul Corkum, NRC
<b>8:30-9:00</b>	Pump-Probe Study of fs-Laser Hyperdoping and Texturing of Silicon for Advanced Non-equilibrium Materials	Eric Mazur, Harvard
<b>9:00-9:30</b>	Fundamental Dynamics and Mechanisms for Ultrafast Laser-Materials Interaction	Steve Yalisove, U Michigan
<b>9:30-10:00</b>	<b>BREAK</b>	
<b>10:00-10:30</b>	Fundamentals of Femtosecond Laser Induced Damage of Solids	Enam Chowdhury, OSU
<b>10:30-1100</b>	Unified First-principle Analysis of Utraintense Laser-matter Interactions	Pavel Polynkin, U of Arizona
<b>11:00-1130</b>	Understanding Laser-Cluster Interactions in the X-ray Regime	Eddie Ackad, SIUE
<b>11:30-1:00</b>	<b>LUNCH</b>	
<b>1:00-1:30</b>	Experimental Study of Electron Dynamics in Strongly Relativistic Laser Fields	Todd Ditmire, U Texas
<b>1:30-2:00</b>	Interactions of Electrons with Laser Light at Highly Relativistic Intensities	Don Umstadter, UNL
<b>2:00-2:30</b>	High-Flux Mono-Energetic Ion Sources Driven by Ultra-Intense Laser Pulses	Farhat Beg, UC San Diego
<b>2:30-3:00</b>	<b>BREAK</b>	
<b>3:00-3:30</b>	Exploration of Radiation Reaction, Light-sail Acceleration, and Approaches to the Schwinger Intensity Limit	Kramer Akli, OSU
<b>3:30-4:00</b>	Ultra-Relativistic Laser Interaction with Ordered Nanoarrays	Jorge Rocca, CSU
<b>4:00-4:30</b>	Next-Generation X-Ray Lightsource and First Applications	Matthias Fuchs, UNL
<b>4:30</b>	<b>MEETING ADJOURNED FOR THE DAY</b>	

### Agenda Day 3 – June 3, 2016

Time	Title of Project	Speaker
<b>7:30-8:00</b>	<b>Registration</b>	
<b>8:00-8:30</b>	High-Energy, Multi-Octave-Spanning Mid-IR Sources via Adiabatic Difference Frequency Generation	Jeff Moses, Cornell
<b>8:30-9:00</b>	Ultrafast Laser–Based Spectroscopic Techniques for Investigating Reacting Flows	James Gord, AFRL/RQ
<b>9:00-9:30</b>	The Science of Extreme Light Generation of X-rays from Liquid Targets at Relativistic Conditions	Mel Roquemore, AFRL/RQ
<b>9:30-10:00</b>	<b>BREAK</b>	
<b>10:00-10:30</b>	Frequency Comb Spectroscopy – From IR to XUV	Jun Ye, CU
<b>10:30-1100</b>	Solid-state High-harmonic Generation as a Potential Attosecond Source for Materials Characterization	David Reis, Stanford
<b>11:00-1130</b>	Isolated Soft X-Ray Attosecond Pulse Generation Using Synthesized Strong-Field Mid-IR Pulses	Kyung-Han Hong, MIT
<b>11:30-1:00</b>	<b>LUNCH</b>	
<b>1:00-1:30</b>	Extreme Nonlinear Optics of High Intensity Laser Pulse Filamentation in Gases	Howard Milchberg, U Maryland
<b>1:30-2:00</b>	Picosecond CO <sub>2</sub> Laser Filamentation in Air	Chan Joshi, UCLA
<b>2:00-2:30</b>	Intense Terahertz Field Generation and Its Interaction with Matter	Kiyong Kim, U Maryland
<b>2:30-3:00</b>	<b>BREAK</b>	
<b>3:00-3:30</b>	Studies of Complex Systems in Intense, Ultrafast Mid-Infrared Laser Fields	Cosmin Blaga, OSU
<b>3:30-4:00</b>	High-order Harmonic and Attosecond Spectroscopy in Materials	Mike Chini, UCF
<b>4:00</b>	<b>MEETING ADJOURN</b>	