

# 2016 Plasma & Electro-Energetic Physics Annual Program review

Dr. Jason Marshall | November 29-30, 2016 | Arlington, VA

Tuesday, 29 November, 2016

Time	Topic	Speaker
08:00-08:15	Opening Remarks	Dr. J. Marshall, AFOSR, Arlington, VA
Computational & Theoretical Plasma Physics		
08:15-08:40	A Hybrid Model for Multiscale Laser Plasma Simulations with Detailed Collision	Dr. David Bilyeu, AFRL/RQR, Edwards AFB, CA
08:40-09:05	KEEN Waves and their Interactions with Generalizations to Multispecies Plasmas, Relativistic Dynamics, Collisionality and Multidimensionality	Dr. Bedros Afeyan, Polymath Research Inc., Pleasanton, CA
09:05-09:30	Kinetic Simulation of Non-Equilibrium Plasmas	Dr. Russel Caflisch, UCLA, Los Angeles, CA
09:30-09:55	Dynamics of High-Intensity Laser-Driven Proton Beam Transport in Solid Density Materials	Dr. Christopher McGuffey, UCSD, San Diego, CA
09:55-10:10	COFFEE BREAK	
10:10-10:35	Studies of Plasma Sheath Physics using Continuum Kinetic Simulations of Plasmas	Dr. Bhuvana Srinivasan, Virgina Tech, Blacksburg, VA
10:35-11:00	Physics-Based-Adaptive Plasma Model for High-Fidelity Numerical Simulations	Dr. Uri Shumlak, UW, Seattle, WA
11:00-11:25	Variational Algorithms for High-Fidelity Plasma Simulations	Dr. Stephen Webb, RadiaSoft, LLC, Boulder, CO
11:25-11:50	Emission, Emittance and Entropy of High Intensity Electron Beams	Dr. Joel Lebowitz, Rutgers, New Brunswick, NJ
11:50-12:50	LUNCH	
Energy Transport in Solids		
12:50-13:15	Innovative Study of Electrical Contact and Electron Transport	Dr. Y. Y. Lau, UMich, Ann Arbor, MI
13:15-13:40	Thin Film Spreading Resistance Modeling for Improved Micro-Contact Performance	Dr. Robert Lake, AFIT, Wright Patterson AFB, OH
13:40-14:05	Nonlinear Dielectrics and Magnetics for Compact Pulsed Power & HPM Protection	Dr. Susan Heidger, AFRL/RDH, Kirtland AFB
14:05-14:30	Fundamentals of Thermal Conductance at Elevated Temperatures	Dr. Pamela Norris, UVA, Charlottesville, VA
14:30-14:45	COFFEE BREAK	
14:45-15:10	Thermal Scattering and Relaxation Mechanisms During High Energy Photo-Excitation of Electronic Materials	Dr. Patrick Hopkins, UVA, Charlottesville, VA
15:10-15:35	Nanostructure Techniques to Obtain Enhanced Permittivity Dielectrics	Dr. J. Neil Merrett, AFRL/RQQ, Wright Patterson AFB, OH

High Power Electromagnetic Sources		
15:35-16:00	Cathode Emission Study for High Power Microwave Sources	<b>Dr. Wilkin Tang,</b> AFLR/RDH, Kirtland AFB, NM
16:00-16:25	Phase-Controlled Magnetron Development	<b>Dr. Jim Browning,</b> BSU, Boise, ID
16:25-16:50	Pushing the Frontiers of the Relativistic Magnetron	<b>Dr. Edl Schamiloglu,</b> UNM, Albuquerque, NM
<b>MEETING ADJOURNED FOR THE DAY</b>		

Wednesday, 30 November, 2016		
Time	Topic	Speaker
High Power Electromagnetic Sources (Continued)		
08:00-08:25	Volume Mode Traveling Wave Tube Amplifier	Dr. Richard Temkin, MIT, Boston, MA
08:25-08:50	High Power Recirculating Planar Amplifiers	Dr. Ronald Gilgenbach, UMich, Ann Arbor, MI
08:50-09:15	Study of High Power Microwave Amplification Driven by Energetic Electron Beams	Dr. Brad Hoff, AFRL/RDH, Kirtland AFB, NM
09:15-09:40	Tunable Broadband GHz/THz Radiation Generated Via Ultrafast Laser Pulsing of Inductively Charged Superconducting Antennas	Dr. Timothy Haugan, AFRL/RQQ, Wright Patterson AFB, OH
09:40-09:55	COFFEE BREAK	
09:55-10:20	Cathode Materials Research for High Power Microwave Sources	Dr. Don Shiffler, AFLR/RDH, Kirtland AFB, NM
10:20-10:45	Investigation of Novel Nanomaterials	Dr. Steven Fairchild, AFRL/RXA, Wright Patterson AFB, OH
10:45-11:10	Integrated Photonics for Electron Emitters	Dr. Rehan Kapadia, USC, Los Angeles, CA
11:10-11:35	Emittance Studies of Novel Cathodes/Metamaterial Enhanced Resistive Wall Amplifiers (2 programs)	Dr. John Booske /Dr. Nader Behdad, U. Wisconsin, Madison, WI
11:35-12:35	LUNCH	
Fundamental Processes and Interactions in Plasmas		
12:35-13:00	Fundamental studies of atmospheric pressure, nanosecond pulsed microplasma jets	Dr. Chunqi Jiang, ODU, Norfolk, VA
13:00-13:25	Characterizing Hypervelocity Impact Plasmas and Effects on Spacecraft with PIC	Dr. Sigrid Close, Stanford University, Stanford, CA
13:25-13:50	Measurements and Applications of Strongly-Correlated Plasmas Generated in Dense Noble Gases	Dr. Seth Putterman, UCLA, Los Angeles, CA

<b>13:50-14:15</b>	Intriguing Transport Properties of Magnetized Ultracold Neutral Plasmas	<b>Dr. Scott Baalrud,</b> U Iowa, Iowa City, IA
<b>14:15-14:40</b>	Novel Features in Complex Plasmas	<b>Dr. Osamu Ishihara,</b> Chubu University, Japan
<b>14:40-14:55</b>	<b>COFFEE BREAK</b>	
<b>14:55-15:20</b>	Studies in Raman Compression	<b>Dr. Nathaniel Fisch,</b> Princeton, Princeton, NJ
<b>15:20-15:45</b>	Threat Detection Using a Modular Cosmic Ray Muon Tomography System	<b>Dr. James Popp,</b> CUNY-York, Jamaica, NY
<b>15:45-16:10</b>	Plasma and Laser Kinetics within a Discharge Assisted Noble Gas Laser	<b>Dr. Nathaniel Lockwood,</b> AFRL/RDL, Kirtland AFB, NM
<b>16:10-16:35</b>	Pulse power implosion experiments and simulation study of the impact of Lower Hybrid Drift (LHD) plasma turbulence on the propagation properties of high frequency electromagnetic waves	<b>Dr. Vladimir Sotnikov,</b> AFRL/RYM, Wright Patterson AFB, OH
<b>16:35-17:00</b>	Dynamic Plasma Coupling in Laboratory, Computer, Space	<b>Dr. David Cooke,</b> AFRL/RVB, Kirtland AFB, NM
<b>MEETING CONCLUDED</b>		