



JTO 2019 MRI Annual Review

October 23-25, 2019

UNM Tech Park Rotunda, Albuquerque, NM

Overall Schedule

Day	Time	Overall Topic Area
Wed, Oct 23	0800-0820	Introduction
Wed, Oct 23	0820-1020	A. Atmospheric Propagation
Wed, Oct 23	1030-1430	B. Beam Control
Wed, Oct 23	1230-1330	Lunch and Poster Session
Wed, Oct 23	1430-1700	C. Coatings
Thurs, Oct 24	0800-1130	D. Gain Media
Thurs, Oct 24	1230-1330	Lunch and Poster Session
Thurs, Oct 24	1130-1700	E. Novel Diodes
Fri, Nov 16	0800-1130	F. Optical Fibers
Fri, Nov 16	1130-1200	Q&A Panel, Government SMEs



1. Wednesday, October 23

- A. Atmospheric Propagation
- B. Beam Control
- C. Coatings

Start Time	End Time	Principal Investigator	Project Title	Government POCs	
0800	0810	Larry Grimes	Introduction to the JTO MRI Program		
0810	0820	Mark Neice	Directed Energy Professional Society Educational Programs		
0820	0920	Qing Wang, NPS	Quantifying and Understanding Atmospheric Turbulence Affecting Optical Propagation	Quentin Saulter, Diana Loree, Keith Bush	
0920	1020	David Voelz, NMSU	Novel Characterization Measurements and Modeling of Turbulence and Refraction in the Lower Atmosphere for DE Applications	Sarwat Chappell, Walt Fink, Keith Bush	
1020	1030	Break			
1030	1130	J. Steve Gibson, UCLA	Advanced Beam Control Technologies: Beaconless Wavefront Sensing and AO with Advanced Filtering, Prediction and Control	Gernot Pomrenke, Diana Loree, Keith Bush	
1130	1230	Eric Jumper, Notre Dame	Airborne Aero-Optics Laboratory and Beam Control	Gernot Pomrenke, Diana Loree, Keith Bush	
1230	1300	Lunch			
1300	1330	Student Poster Session			
1330	1430	Sanjay Krishna, Ohio State	Low Excess-Noise Avalanche Photodetectors with Superlattices (LEAPS)	Mike Gerhold, Diana Loree, Keith Bush	
1430	1530	Joseph Talghader, Minnesota	Optical and Thermomechanical Design of High Reflectivity Deformable Membranes	Sarwat Chappell, Walt Fink, Chris Washer	
1530	1600	Break			
1600	1700	Carmen Menoni, CSU	Next generation near infrared interference coatings with ultra-low stress and losses for deformable mirror applications	Sarwat Chappell, Diana Loree, Keith Bush	



2. Thursday, October 24

- D. Gain Media
- E. Novel Diodes

Start Time	End Time	Principal Investigator	Project Title	Government POCs
0800	0900	Yiquan Wu, Alfred University	R & D of Planar Waveguides from Highly Thermally Conductive Ceramics for High Power Laser applications	Michael Bakas, Walt Fink, Tim Newell
0900	1000	Javier Garay, UCSD	High thermal conductivity aluminum nitride based gradient ceramics for gain media	Quentin Saulter, Walt Fink, Siva Mani
1000	1030	Break		
1030	1130	Hongxing Jiang, Texas Tech	Large size wafers of erbium doped GaN crystals as high energy laser gain medium	Mike Gerhold, Walt Fink, LeAnn Brasure
1130	1230	Lin Zhu, Clemson	Integrated modal control and beam combining of high power diode laser arrays for the next generation	Mike Gerhold, Matthew Leigh, Tim Newell
1230	1300	Lunch		
1300	1330	Student Poster Session		
1330	1430	Kent Choquette, UIUC	Next-Generation High Brightness Laser Diode Arrays Based on 2D Photonic Crystal Technology	Mike Gerhold, Matthew Leigh, Lew Desandre
1430	1530	Weidong Zhou, Texas Arlington	Power Scalable Electrically Driven Monolithic IR Surface Emitting Semiconductor Lasers	Mike Gerhold, Matthew Leigh, LeAnn Brasure
1530	1600	Break		
1600	1700	Boubacar Kante, UCSD	High Power Metamaterial Laser	Quentin Saulter, Walt Fink, Siva Mani



3. Friday, October 25

- F. Optical Fibers
- G. Government Panel

Start Time	End Time	Principal Investigator	Project Title	Government POCs	
0800	0900	Stuart (Shizhuo) Yin, Penn State	Novel all-solid state 100+ channel beam multiplexer for high energy fiber lasers	Richard Hammond, Matthew Leigh, Tim Newell	
0900	1000	John Marciante, Rochester	Engineered Fiber for Mitigating Thermal Mode Instability	Richard Hammond, Matthew Leigh, LeAnn Brasure	
1000	1030	Break			
1030	1130	Peter Dragic, UIUC	A Unified Materials Approach to Mitigating Nonlinearities in HEL Optical Fibers	Sarwat Chappell, Matthew Leigh, Lew Desandre	
1130	1200	Q & A Session with Government Panel: Matt Leigh, JTO; Diana Loree, JTO; Walt Fink, JTO; Larry Grimes, JTO			