

# 2020 Condensed Matter Physics Program Annual Review

Dr. Jiwei Lu | December 8-10, 2020 | Virtual

## Agenda Day 1 | Tuesday, December 8, 2020

Time	Topic	Speaker
11:45	Zoom Login	
12:00		Jiwei Lu, AFOSR
12:05	Welcome Remarks	COL Jason B. Mello, RT Chief, AFOSR
12:20	2D Light and Heat Transport in 2D Materials	Prof. Jiwoong Park, U. Chicago
12:45	New Functionality in Van der Waals Heterostructures	Prof. Abhay Pasupathy, NYU
13:10	Moiré Quantum Matter	Prof. Pablo Jarillo-Herrero, MIT
13:35	BREAK	
14:00	TBA	Dr. Pat Roach, Chief Scientist, AFOSR (Invited Speaker)
14:30	Towards Single Anyon Control in Graphene Heterostructures	Prof. Andrea Young, UCSB
14:55	Stripe Phases in Semiconductor Moiré Superlattices	Prof. Kin Fai Mak, Cornell Univ.
15:20	Energy-efficient Sub-5-nm Magnetic Tunneling Junctions	Prof. Osama Mohammed, Florida International Univ.
15:45	BREAK	
16:05	Graphene-inserted Tunneling Device for Emerging Spin Logic Applications	Prof Ethan Ahn, UTSA
16:30	Deducing Temperature-dependent Band Gap from Transport Data of (p x n)-type Transverse Thermoelectrics	Prof. Matthew Grayson, Northwestern Univ.
16:55	ADJOURN FOR THE DAY	

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## Agenda Day 2 | Wednesday, December 9, 2020

Time	Topic	Speaker
11:45	<b>Zoom Login</b>	
12:00	Opening Remarks	Jiwei Lu, AFOSR
12:05	AFOSR Social Media	Ms. Molly Lachance, AFOSR
12:20	Exploring Charge Density Waves in Dirac Systems	Prof. Ken Burch, Boston College
12:45	Optical Control of Electronic Topological States	Prof. Mohammad Hafezi, UMD
13:10	Investigating the Role of Band Dispersion and Topology with Novel Photogalvanic Techniques	Prof. Ritesh Agawarl, U. Penn
13:35	<b>BREAK</b>	
13:50	Topological Materials and Devices at AFRL	Dr. Arnold Kiefer, AFRL/RV (Invited Speaker)
14:20	Light-matter Interactions in Quantum Topological Materials	Prof. Li Yang, Washington Univ. St Louis
14:45	Topological Twistronics	Prof. Jennifer Cano, Stony Brook Univ.
15:10	<b>BREAK</b>	
15:25	Functional Nanostructured Strongly Correlated Solids	Prof. Ivan Schuller, UCSD
15:50	Exploring Spin and Topological Phenomena in Oxide Thin Films and Heterostructures	Prof. Yuri Suzuki, Stanford
16:15	Microwave response of Topological Edge Plasmons	Prof. Monica Allen, UCSD
16:40	New Material and Design Approaches for Integrated Nano-optical Systems	Prof. Jonathan Fan, Stanford
17:05	<b>ADJOURN FOR THE DAY</b>	

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## Agenda Day 3 | Thursday, December 10, 2020

Time	Topic	Speaker
11:45	<b>Zoom Login</b>	
12:00	Opening Remarks	Jiwei Lu, AFOSR
12:05	Structured Materials for Enhanced Quantum Sensing	Dr. Robert Bedford, AFRL/RX (Invited speaker)
12:35	Nanoscale Quantum Sensing of Quantum Materials through a Single Spin Magnetometer	Prof. Chunhui Du, UCSD
12:50	High Frequency Acousto-Magnetic Electronics	Dr. Mike Page, AFRL/RX
13:15	<b>BREAK</b>	
13:35	DoD Basic Research	Dr. Bindu Nair, Director for Basic Research, OUSD(R&E) (Invited Speaker)
14:05	Ferroquadrupole Quantum Phase Transitions	Prof Ian Fisher, Stanford
14:30	Quantum Spin Dynamics, Coherence, and Disorder in Dense Magnetic Systems	Prof. Daniel Silevitch, Cal Tech
14:55	<b>BREAK</b>	
15:15	<b>Lightening Talks-</b> Each talk is 5 minutes, and there is Q&A session at the end of this session	
	Imaging and Control of Critical Fluctuations in 2D Magnets	Dr. Chenhao Jin, Cornell Univ.
	Nodal Structure of Chiral Twisted Bilayer Graphene Model and Implications for Higher Magic Angles	Dr. Jie Wang, Flatiron Institution of the Simons Foundation
	Universal Moiré Nematic Phase in Twisted Graphene	Dr. Carmen Rubio-Verdú, Columbia
	Opto-twistronics in Multilayer Van der Waals Stacks	Zhurun Ji, U. Penn
	Many-electron Interactions and Excitonic Effects of Chromium Trichloride: from Two Dimensions to Bulk	Linghan Zhu, Washington Univ. St Louis
16:00	Closing Remarks	Jiwei Lu, AFOSR
16:30	<b>ADJOURN</b>	