

2025 Materials Science for QIS Review

Drs. Jiwei Lu, Grace Metcalfe, Ali Sayir and Michael Yakes | February 3-6, 2025 |
Arlington, VA -hybrid

Basic Research Innovation Collaboration Center (BRICC)
4100 N Fairfax Drive, Suite 450 | Arlington, VA 22203

Agenda Day 1 | February 3, 2025

Time	Topic	Speaker
8:15	Check-in / Log-on	
8:45	Welcome remarks	E. CLEVELAND AND A. SAYIR
9:00	Unveiling and Controlling Quantum Point defects in Oxides	KAI-MEI FU (U WASHINGTON) JUAN CARLOS IDROBO (U WASHINGTON) ANDREI FARAON (CALTECH) JOSEPH FALSON (CALTECH) YUAN PING (U. WISCONSIN, MADISON)
10:30	BREAK	
11:00	Probing Microscopic Sources of Disorder in Josephson Junctions	DAVID SCHUSTER (STANFORD)
12:30	LUNCH	
14:00	Material Interfaces and Defects in Superconducting Qubits: a First-principles closed Loop Approach	WILLIAM SHELTON (LSU)
14:45	Gate-defined Quantum Dot Qubits Based on Light Holes in Strained Ge Heterostructures: Material Property Correlations and Predictive Performance Metrics	DARYOOSH VASHAEE (NCSU)
15:30	BREAK	
16:00	Invited Speaker	
17:00	MEETING ADJOURN	

Agenda Day 2 February 4, 2025		
Time	Topic	Speaker
8:15	Check-in	
8:45	Welcome remarks	E. CLEVELAND AND A. SAYIR
9:00	Materials Advancements for Silicon Qubits (MASQ)	SHASHANK MISRA (SANDIA NATIONAL LAB)
10:30	Poster session/Networking	
12:30	LUNCH	
14:00	Design and Control of Atomic Defects in Group II-Oxide Materials	EDO WAKS (UMD) DOUGLAS IRVING (NCSU) JAMES LEBEAU (MIT) DAVID AWSCHALOM (U. CHICAGO) GIULIA GALLI (U. CHICAGO) SUPRATIK GUHA (U. CHICAGO) JON-PAUL MARIA (PSU)
15:30	BREAK	
16:00	Invited Speaker	
17:00	MEETING ADJOURN	

Agenda Day 3 February 5, 2025		
Time	Topic	Speaker
8:15	Check-in	
8:45	Welcome remarks	E. CLEVELAND AND A. SAYIR
9:00	EpiQ: Epitaxial Approaches for Materials Enhancements of Superconducting Qubits	DEBDEEP JENA (CORNELL)
10:30	BREAK/POSTERS/NETWORKING	
12:00	LUNCH	

13:30	Identifying the Origin of Lossy Defects in Josephson Junctions	ANGELA KOU (UIUC)
14:15	BREAK	
15:00	Invited Speaker	
16:00	MEETING ADJOURN	

Agenda Day 4 February 6, 2025		
Time	Topic	Speaker
8:15	Check-in	
8:45	Welcome remarks	E. CLEVELAND AND A. SAYIR
9:00	Multi-scale Probes of Correlation and Causation in Silicon	JOHN NICHOL (UNIV. ROCHESTER)
10:30	BREAK	
10:45	Invited Speaker	
11:45	Closing Rremarks	E. CLEVELAND AND A. SAYIR
Sidebar Meetings		
13:00	Misra/SNL	
13:30	Fatemi/Cornell	
14:00	Schuster/Stanford	
14:30	Vashae/NCSU	
15:00	Jena/Cornell	
15:30	Shelton/LSU	
16:00	Nichol/Rochester	
16:30	Kou/UIUC	