



## Midwest Quantum Collaboratory (MQC) Workshop #1

### Solid State quantum emitters for quantum photonics and quantum sensing

Thursday, December 16, 2021

All Times EST

Join here: [Zoom Link](#)

\*Each speaker's talk below is 20 min (15min + 5min Q&A); in addition, we welcome a 1-slide "brief highlight" (1-2min) from participants during Round Tables 1&2 (interested contributors please email your 1-slider to davidstewart@purdue.edu by December 15 to be included)

#### Session 1 (10:00 a.m. – 12:30 p.m.)

##### Focusing on Quantum Materials/Emitters (Chair: Yong Chen; Purdue)

10:00 a.m. – 10:05 a.m.	<i>Welcome Remarks</i>
10:05 a.m. – 10:25 a.m.	Shannon Nicley (MSU) – <i>Doped Diamond Growth for Charge State Control and Stability of Defect Qubits</i>
10:25 a.m. – 10:45 a.m.	Timothy Grotjohn (MSU) – <i>Low Stress and Low Defect Diamond Substrate and Epilayer Growth</i>
10:45 a.m. – 11:05 a.m.	Tongcang Li (PU) – <i>Spin defects in h-BN</i>
11:05 a.m. – 11:25 a.m.	Zetian Mi (UM) – <i>Nanoscale III-nitrides for quantum information</i>
11:25 a.m. – 11:45 a.m.	P.C. Ku (UM) – <i>Quantum-dots and cluster states</i>
11:45 a.m. – 12:05 p.m.	Alex Senichev (PU) – <i>Quantum emitters in SiN and hBN</i>
12:05 p.m. – 12:30 p.m.	Round Table 1 (moderator: Steve Forrest; UM)

#### Session 2 (2:00 p.m. – 4:30 p.m.)

##### Focusing on Quantum Photonics/Sensing (Chair: Mack Kira; UM)

2:00 p.m. – 2:20 p.m.	Steve Cundiff (UM) – <i>SiV centers in diamond and excitons in TMDCs</i>
2:20 p.m. – 2:40 p.m.	Jonas Becker (MSU) – <i>The search for the Goldilocks quantum bit in diamond</i>
2:40 p.m. – 3:00 p.m.	Hui Deng (UM) – <i>Novel 0D, 1D, 2D hybrid systems</i>
3:00 p.m. – 3:20 p.m.	Pramey Upadhyaya (PU) – <i>Quantum sensing of magnets with spin defects</i>
3:20 p.m. – 3:40 p.m.	Zubin Jacob (PU) – <i>Quantum sensing of photonic spin densit</i>
3:40 p.m. – 4:00 p.m.	Mahdi Hosseini (PU) – <i>Quantum photonics with rare-earth ions in solids</i>
4:00 p.m. – 4:25 p.m.	Round Table 2 (moderator: Johannes Pollanen; MSU)
4:25 p.m. – 4:30 p.m.	Closing remarks/outlook

\*For speakers and other interested PIs: We will hold a post-workshop discussion for collaboration 4:30 – 5:00 p.m.