

QSTEP 2025 Workshop Schedule

Friday

4 - 5:30 PM	Welcome and Registration	Leighty Commons
5:30 - 7 PM	Pizza, Activities booths, and Tours	Leighty Commons
7 - 9 PM	Topic Session: Quantum Computing and Quantum Networks (chair: Shengwang Du)	WTHR 200
7 - 7:10 PM	Welcome and Opening Remarks	Valentin Walther
7:10 - 8 PM	<i>A Fast Boot for Quantum Information and Computing</i>	Yuxiang Peng
8 PM - 8:20 PM	<i>Putting Quantum Networks to Work: Applications of a Quantum Internet</i>	Joseph Lukens
8:20 PM - 8:40 PM	<i>Distributed Quantum Computing</i>	Shengwang Du

Saturday

8:30 - 9 AM	Breakfast	Hiler Theater
9 - 10:30 AM	Topic Session: Quantum Chemistry and Electronic Structure (chair: Mike Reppert)	Hiler Theater
9 - 9:50	<i>Introduction to Quantum Chemistry and Electronic Structure Theory</i>	Adam Wasserman
9:50 - 10:10	<i>Low-scaling Stochastic Electronic Structure Methods</i>	Ming Chen
10:10 - 10:30	<i>Quantum Chemistry-Based Design of Catalysts for Fuel Cells via Electronic Structure Level Understanding</i>	Zhenhua Zeng
10:30 - 10:45	Coffee Break	
10:45 AM - 12:10 PM	Topic Session: Quantum Measurements and Quantum Sensing (chair: Hadiseh Alaeian)	Hiler Theater
10:45 - 11:35	<i>Quantum Sensing with Atomic Defects</i>	Tongcang Li
11:35 - 11:55	<i>Towards Excitons as a Many-Body Quantum Simulation Platform</i>	Libai Huang
11:55 - 12:15	<i>Attosecond Science with Quantum Light</i>	Niranjan Shivaram
12:10 - 1:30 PM	Lunch Break	
1:30 - 3 PM	Core Skills Session #1	
3 PM - 4:30 PM	Core Skills Session #2	
	<i>Quantum Games</i> (Lead: Valentin Walther)	WALC 1132
	<i>Group theory: the language of quantum error correction, molecules, and the universe</i> (Lead: Lee Liu)	WALC 1087
	<i>Intro to QisKit Programming</i> (Lead: Keerthi Alagarsamy)	WALC 1018
4:30 - 6:30 PM	Poster Session: Purdue Quantum and Beyond	STEW 214 AB
6:30 PM	Dinner Break + Free Time	

Sunday

8:30 - 9 AM	Breakfast	WALC 1018
9 - 10:30 AM	Topic Session: Quantum Optics (chair: Valentin Walther)	WALC 1018
9 - 9:50 AM	<i>Introduction to quantum emitter-light interactions</i>	<i>Jonathan Hood</i>
9:50 - 10:10 AM	<i>How optical photons see microwave photons</i>	<i>Grace Liang</i>
10:10 - 10:30	<i>Superradiance and subradiance with many radiating atoms</i>	<i>Francis Robicheaux</i>
10:30 - 10:45	Coffee Break	
10:45 AM - 12:15 PM	Topic Session: Quantum Materials (Chair: Laimei Nie)	WALC 1018
10:45 - 11:35	<i>Introduction to quantum materials</i>	<i>Jukka Vayrynen</i>
11:35 - 11:55	<i>Optical detection of integer and fractional Chern insulators in moire MoTe₂</i>	<i>Yihang Zeng</i>
11:55 - 12:15 PM	<i>Visualizing and manipulating quantum anomalous Hall edge states in twisted graphene with STM</i>	<i>Tiancong Zhu</i>

Many Thanks to our Sponsors!



James Tarpo and Margaret Tarpo
Department of Chemistry

Department of Physics &
Astronomy

Elmore Family School of Electrical and
Computer Engineering

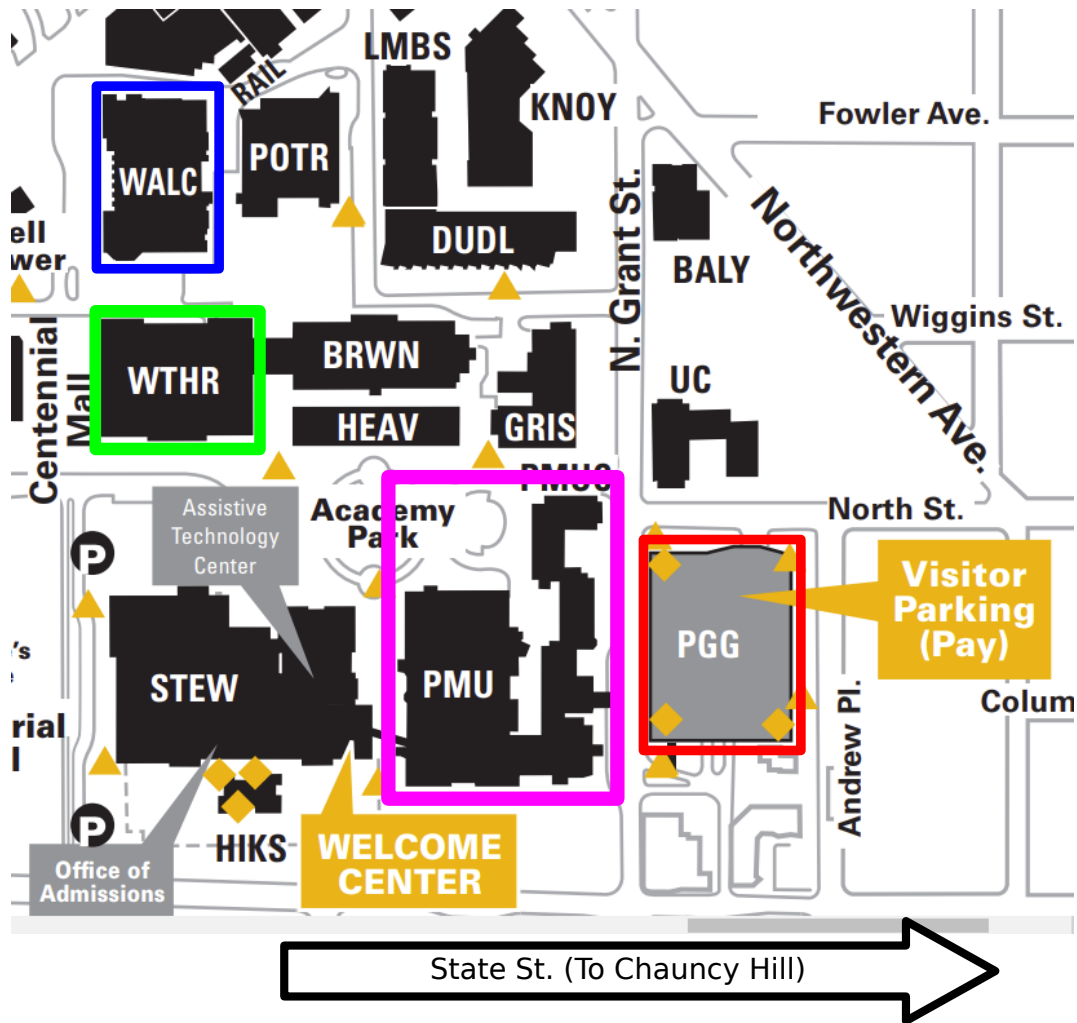
Quantum Photonic Integrated
Design Center

Purdue Quantum Science and
Engineering Institute

Purdue College of Science

Purdue College of Engineering





PGG = Grant Street Parking Garage

**WTHR = Wetherill Hall of Chemistry
(Friday activities)**

**WALC = Wilmeth Active Learning Center
(Saturday & Sunday activities)**

**PMU = Purdue Memorial Union
(food court)**

**Chauncey Hill = Off-campus district with
many restaurants & shops**