

# QSTEP 2024 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          | <b><u>Topic Session: Quantum Chemistry</u></b>   | WTHR 200                    |
| 7 - 7:10 PM       | Welcome and Opening Remarks  | <i>Mike Reppert</i>         |
| 7:10 - 8 PM       | <i>Quantum Chemistry and Electronic Structure</i>  | <i>Adam Wasserman</i>       |
| 8 PM - 8:20 PM    | <i>How Strong Light-Matter Interactions Alter Intermolecular Forces</i>                  | <i>Ming Chen</i>            |
| 8:20 PM - 8:40 PM | <i>Enabling Sustainable Production of Fuels and Chemicals through Quantum Chemistry.</i> | <i>Viswanath Pasumarthi</i> |

## Saturday

|                     |  |                          |
|---------------------|--|--------------------------|
| 8:30 - 9 AM         | Breakfast  | Hiler Theater            |
| 9 - 10:30 AM        | <b><u>Topic Session: Quantum Dynamics and Sensing</u></b>          | Hiler Theater            |
| 9 - 9:50            | <i>Introduction to Quantum Dynamics and Sensing</i>                | <i>Jon Hood</i>          |
| 9:50 - 10:10        | <i>Quantum dynamics from spectroscopy</i>                          | <i>Lee Liu</i>           |
| 10:10 - 10:30       | <i>Ultrafast Quantum Dynamics with Classical and Quantum Light</i> | <i>Niranjan Shivaram</i> |
| 10:30 - 10:45       | Coffee Break   |                          |
| 10:45 AM - 12:10 PM | <b><u>Topic Session: Quantum Information and Computing</u></b>     | Hiler Theater            |
| 10:45 - 11:35       | <i>Introduction to Quantum Computing and Information</i>           | <i>Jukka Vayrynen</i>    |
| 11:35 - 11:55       | <i>Quantum Simulation with Superconducting Circuits</i>            | <i>Alex Ma</i>           |
| 11:55 - 12:15       | <i>Distributed Quantum Computing and Quantum Networks</i>          | <i>Shengwang Du</i>      |
| 12:10 - 1:30 PM     | Lunch Break  |                          |
| 1:30 - 3 PM         | <b><u>Core Skills Session #1</u></b>                               |                          |
| 3 PM - 4:30 PM      | <b><u>Core Skills Session #2</u></b>                               |                          |
|                     | <i>Quantum Games</i> (Lead: Valentin Walther)                      | WALC B091                |
|                     | <i>Linear Algebra with Python</i> (Lead: Mike Reppert)             | WALC 1087                |
|                     | <i>QisKit Programming</i> (Lead: Manas Sajjan)                     | WALC 1018                |
| 4:30 - 6:30 PM      | <b><u>Poster Session: Purdue Quantum at a Glance</u></b>           | WALC 3087                |
| 6:30 PM             | Dinner Break + Free Time   |                          |

## Sunday

|              |  |               |
|--------------|--|---------------|
| 8:30 - 9 AM  | Breakfast                                      | Hiler Theater |
| 9 - 10:30 AM | <b><u>Topic Session: Quantum Materials</u></b> | Hiler Theater |

|                     |   |                       |
|---------------------|---|-----------------------|
| 9 - 9:50 AM         | <i>Introduction to Quantum Materials</i>                                | <i>Yong Chen</i>      |
| 9:50 - 10:10 AM     | <i>Ultrafast spectroscopy across different energy and length scales</i> | <i>Hanzhe Liu</i>     |
| 10:10 - 10:30       | <i>Unconventional superconductors</i>                                   | <i>Laimei Nie</i>     |
| 10:30 - 10:45       | Coffee Break  |                       |
| 10:45 AM - 12:15 PM | <b>Topic Session: Quantum Optics</b>                                    | Hiler Theater         |
| 10:45 - 11:35       | <i>Silicon Quantum Photonics with Single-Photon Emitters</i>            | <i>Vlad Shalaev</i>   |
| 11:35 - 11:55       | <i>Quantum optics using cold atoms and nanophotonics</i>                | <i>Chen-Lung Hung</i> |
| 11:55 - 12:15 PM    | <i>Strongly-interacting photons</i>                                     | <i>Grace Liang</i>    |

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