

Exponent®
Engineering & Scientific Consulting

Matt Dwyer, Ph.D.

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Professional Profile

Dr. Dwyer's expertise is in experimental physics and electrical systems. In particular, Dr. Dwyer has extensive experience utilizing magnetic materials, sensors, and cryogens to develop custom experimental apparatuses. Working within a variety of experimental labs has led to development of multiple skills including circuit design, electronic device analysis and repair, data analysis, vacuum system repair, and machining. Dr. Dwyer uses this knowledge to assist clients with a variety of applications including consumer products and industrial or electrical systems.

Dr. Dwyer received his Ph.D. in physics from The University of Texas at Austin wherein his dissertation focused on detecting very small magnetic forces across temperature ranges. Because of the large amounts of data needed for his dissertation work, Dr. Dwyer worked to automate both the data-taking and data-analysis processes via Python and custom circuitry. He also helped oversee the magnetic materials teaching laboratory, assisting undergraduates in designing new sensors for various applications.

Dr. Dwyer also received a Master's in physics with a focus on education from Northern Illinois University, studying various cohorts of students' preconceptions on physics concepts.

Academic Credentials & Professional Honors

Ph.D., Physics, University of Texas - Austin, 2024

M.S., Physics, Northern Illinois University, 2019

B.S., Physics, University of Illinois at Urbana-Champaign, 2015

Prior Experience

Physics Staff Assistant III, The University of Texas at Austin, 2025

Publications

Jaggi NK, Mehio O, Dwyer M, Greene LH, Baumbach RE, Tobash PH, Bauer ED, Thompson JD, Park WK. Hybridization gap in the heavy-fermion compound UPd2Al3 via quasiparticle scattering spectroscopy. Phys. Rev 2017; B 95:165123.

Narasiwodeyar S, Dwyer M, Liu M, Park WK, Greene LH. Two-step fabrication technique of gold tips for use in point-contact spectroscopy. Review of Scientific Instruments 2015; 86:033903.

Presentations

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Dwyer M, Shoemaker D, Markert JT. Measurement of phonon angular momentum via the Einstein-de Haas effect. Meeting presentation, APS, March 2023.

Dwyer M, Shoemaker D, Markert JT. Measurement of phonon angular momentum via the Einstein-de Haas effect. Meeting presentation, APS, March 2022.

Dwyer M et al. Fiber-optic interferometry for rapid pressure or magnetic sensing. Meeting Presentation, APS, March 2021.