

Announcing a new 2022 textbook for a MODERN PHYSICS course

Invitation to Quantum Mechanics

by Dan Styer, Schiffer Professor of Physics at Oberlin College.

Published by World Scientific and also available for free download from

<http://www.oberlin.edu/physics/dstyer/InvitationToQM>



Special features of the book include:

- It discusses first the phenomena of quantum mechanics (quantization, interference, entanglement) and only then moves on to a mathematical description of those phenomena.
- The phenomena are discussed and the mathematical machinery built up first in qubit systems.
- Balanced, interwoven treatment of concepts, techniques, and applications so that each thread reinforces the others.
- Early treatment of quantum cryptography (section 2.6).
- Treatment of common (and, dare I say it, poisonous) misconceptions (cataloged in appendix E).
- Advice on problem solving (throughout, but summarized in appendix D).
- Reading meaning into equations (for example pages 20–22; 171–172).
- Developed over the course of twelve years; field tested three semesters.
- It's free.

“I love Dan Styer’s approach! His writing is lucid. He first discusses experiments that elucidate the need for a new quantum framework before introducing the mathematical tools to delve deeper into understanding them. I highly recommend this textbook for sophomore-level undergraduate quantum instruction.”

— Chandralekha Singh, Professor of Physics, University of Pittsburgh;
President, American Association of Physics Teachers

“Quantum mechanics has always been more than a jumble of tools. In this clear and engaging textbook, Daniel Styer invites students to explore some of the richness of quantum theory to think hard about novel concepts while building confidence and intuition with useful techniques. A marvelous, modern introduction to an essential subject.”

— David Kaiser, Professor of Physics and the History of Science,
Massachusetts Institute of Technology; author of *How the Hippies Saved Physics*

“The *American Journal of Physics* article [“Entropy and Evolution”] by Daniel Styer . . . is possibly the dumbest work ever published by a major physics journal.”

— Granville Sewell, Professor of Mathematics, University of Texas at El Paso,
and intelligent design advocate

“Talking with him one-on-one is like having private lessons with quantum mechanics itself. He is extremely excited about quantum mechanics, and that excitement is contagious. In addition, he is incredibly polite and kind.”

— anonymous student review, 5 April 2016

“Professor Styer makes me LOVE physics so much. You’ll never have a prof like him — he is hilarious, interesting, and intelligent at the same time. Learning modern physics is so FUN and fulfilling with him.”

— anonymous student review, 22 January 2019

“Shocked he hasn’t been fired.”

— anonymous student review, 13 February 2022

“When Dan Styer lays out quantum mechanics, I listen.”

— Edwin Taylor, Massachusetts Institute of Technology (retired);
winner of the Oersted Medal