James Walker obtained his Ph.D. in theoretical physics from the University of Washington in 1978. He subsequently served as a post-doc at the University of Pennsylvania, the Massachusetts Institute of Technology, and the University of California at San Diego before joining the physics faculty at Washington State University in 1983. Professor Walker’s research interests include statistical mechanics, critical phenomena, and chaos. His many publications on the application of renormalization group theory to systems ranging from absorbed monolayers to binary-fluid mixtures have appeared in Physical Review, Physical Review Letters, Physica, and a host of other publications. He has also participated in observations on the summit of Mauna Kea, looking for evidence of extrasolar planets.

Jim Walker likes to work with students at all levels, from judging elementary school science fairs to writing research papers with graduate students, and has taught introductory physics for many years. His enjoyment of this course and his empathy for students have earned him a reputation as an innovative, enthusiastic, and effective teacher. Jim’s educational publications include “Reappearing Phases” (Scientific American, May 1987) as well as articles in the American Journal of Physics and The Physics Teacher. In recognition of his contributions to the teaching of physics at Washington State University, Jim was named Boeing Distinguished Professor of Science and Mathematics Education for 2001–2003.

When he is not writing, conducting research, teaching, or developing new classroom demonstrations and pedagogical materials, Jim enjoys amateur astronomy, eclipse chasing, bird and dragonfly watching, photography, juggling, unicycling, boogie boarding, and kayaking. Jim is also an avid jazz pianist and organist. He has served as ballpark organist for a number of Class A minor league baseball teams, including the Bellingham Mariners, an affiliate of the Seattle Mariners, and the Salem-Keizer Volcanoes, an affiliate of the San Francisco Giants. He can play “Take Me Out to the Ball Game” in his sleep.
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Pearson Physics offers a new path to mastery—a “concepts first” approach that supports a superior, step-by-step problem solving process. In your new program, you’ll find:

• Example problems that build reasoning and problem-solving skills.

• Relevant connections that tie abstract concepts to everyday experiences and modern technologies.

• Rich lab explorations and study support that allow students to practice and reinforce essential skills.

• Cutting-edge technology that offers multiple options for interacting with—and mastering—the content.

The following pages showcase several key elements of Pearson Physics that will lead students to success.
A New Force in Physics

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Leading by Example

Every class contains a unique and diverse group of students. Pearson Physics supports each student’s unique learning style, offering all students a path to success. A key element of this approach is the program’s use of four distinct Example types, each with a particular purpose.

Quick Examples offer simple and concise solutions that model how newly introduced equations and units are used.

Conceptual Examples pose a thought-provoking question and then explain the logical reasoning and physics concepts needed to answer it.

Active Examples ask students to take an active role in solving the problem by thinking through the logic described on the left and verifying their answers on the right.

Guided Examples present a visual model of the physical situation and outline the key concepts that apply to it before proceeding to the detailed step-by-step solution.
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Relevant Connections

Pearson Physics emphasizes the fact that physics applies to everything in your world, connecting ideas and concepts to everyday experience.

---

**Physics & You** features throughout the book explain the physics behind interesting technologies, the impact of technology on society, and the role of physics in various careers.

**Physic & You: Technology** passages in the discussion explain how various modern technologies make use of the physics concepts just learned.
Pearson Physics provides hands-on lab explorations in the text itself and through a separate Lab Manual. Extra study support features appear throughout the chapters when students need them most.

Physics Labs are traditional single-page lab activities that use easy to obtain materials.

Math HELP boxes in example problems guide students to extra math support material contained in the Math Review chapter.

Connecting Ideas features the important concepts from lesson to lesson and chapter to chapter, helping students see the bigger picture.

Short, simple, and interesting Inquiry Labs open each chapter and offer a chance to explore some of the chapter’s fundamental concepts.

Physics Labs and Study Tools

Inquiry Lab

Explore

1. Thoroughly clean and dry waxed microscope slides.
2. Place the ribbon oscillating drum in front of the microscope and observe the results.
3. Count the number of oscillations for waxed and unwaxed slides. What do you notice?

What thin film interferes?

Tutorials with Hints and Feedback

Mastering’s easy-to-assign tutorials provide students with individualized coaching.

• Hints and Feedback offer “scaffolded” instruction similar to what students would experience in an after-school study session.

• Hints often provide problem-solving strategies or break the main problem into simpler exercises.

• Wrong-answer-specific feedback gives students exactly the help they need by addressing their particular mistake without giving away the answer.
Mastering Physics®

The Mastering platform is the most effective and widely used online homework, tutorial, and assessment system for physics.

• Students interact with self-paced tutorials that focus on course objectives, provide individualized coaching, and respond to their progress.

• Instructors use the Mastering system to maximize class time with easy-to-assign, customizable, and automatically graded assessments that motivate students to learn outside of class and arrive prepared for lecture and lab.

Prelecture Questions
Assignable Prelecture Concept Questions encourage students to read the textbook so they’re more engaged in class.

Gradebook Diagnostics
The Gradebook Diagnostics screen provides instructors with weekly diagnostics. With a single click, charts identify the most difficult problems, vulnerable students, and grade distribution.

Tutorials with Hints and Feedback
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Program Components

MasteringPhysics*

MasteringPhysics® is the most effective and widely used online homework, tutorial, and assessment system for science courses. It delivers self-paced tutorials that focus on your course objectives, provides individualized coaching, and responds to each student's progress. The Mastering system helps teachers maximize class time with easy-to-assign, customizable, and automatically graded assessments that motivate students to learn.

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For the Student

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Some of the teacher supplements and resources for this text are available electronically to qualified adopters on the Instructor Resource Center (IRC). Upon adoption or to preview, please go to www.pearsonschool.com/access_request and select Instructor Resource Center. You will be required to complete a brief one-time registration subject to verification of educator status. Upon verification, access information and instructions will be sent to you via email. Once logged into the IRC, enter ISBN 0-13-137115-0 in the “Search our Catalog” box to locate resources.

Electronic teacher supplements are also available within the Instructor’s tab of MasteringPhysics.
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