Free Commercial Workshops

CW01: PASCO Capstone: Simple and Powerful Data Analysis for Physics

Location: STSS 131 B
Date: Monday, July 28
Time: 12–1 p.m.
Sponsor: PASCO scientific

Leaders: Ann Hanks, Brett Sackett

Regardless of where your data comes from, come get hands-on with Capstone and see how useful this software is for analysis. Easy data import and powerful tools streamline data analysis for physics. See why Capstone is the ultimate tool for the physics lab and classroom. See what is new and get a sneak peak at what's coming next. One lucky attendee will win a Capstone site license.

CW02: Put Your Online Physics Lab Courses in Motion!

Location: STSS 530 A
Date: Monday, July 28
Time: 12–1 p.m.
Sponsor: eScience Labs LLC

Leaders: Dr. Stephen Ray, Dr. Nicolas Benedict

Have you considered creating online science lab courses but struggled to provide academically sound labs, hands-on experiences and support accreditation standards? We will demonstrate and share a redesigned physics lab curriculum for online students taking conceptual and general physics courses. Participants will interact with the hands-on and engaging eScience lab kits through demonstrations of highlighted physics labs. We will discuss challenges of teaching online physics courses and incorporating a laboratory component. We will respond to those challenges as well as perspective on the benefits to students. Participants will have an opportunity to share perspectives, ask questions and explore issues.

CW03: PASCO Capstone: Simple and Powerful Data Analysis for Physics

Location: STSS 131 B
Date: Tuesday, July 29
Time: 11:30 a.m.–12:30 p.m.
Sponsor: PASCO scientific

Leaders: Ann Hanks and Brett Sackett

Regardless of where your data comes from, come get hands-on with Capstone and see how useful this software is for analysis. Easy data import and powerful tools streamline data analysis for physics. See why Capstone is the ultimate tool for the physics lab and classroom. See what is new and get a sneak peak at what's coming next. One lucky attendee will win a Capstone site license.

CW04: Increasing Student Success and Retention Using Comprehensive Peer-Reviewed, Customizable, Open Education Resources

Location: STSS 432 A
Date: Tuesday, July 29
Time: 11:30 a.m.–12:30 p.m.
Sponsor: OpenStax College

Leaders: Nicole Finkbeiner

Studies have shown that students are increasingly foregoing purchasing textbooks and other required resources due to costs and accessibility. In this workshop, attendees will learn about peer-reviewed open education resources, including the free, peer-reviewed *College Physics* textbook, and how faculty members across the country are increasing student success and retention using these resources. Customizing *College Physics* with OpenStax's redesigned, user-friendly authoring and editing platform will also be discussed.

CW05: Perimeter Institute: A New Spin on Classical Physics

Location: STSS 131 A
Date: Monday, July 28
Time: 12–1 p.m.
Sponsor: Perimeter Institute

Leaders: Dr. Damian Pope, Kevin Donkers

Are you looking for new and innovative ways to spice up classical physics concepts and expose your students to hands-on, modern physics without taking up extra time? This session explores how your everyday classical physics lessons can easily be connected to interesting concepts in modern physics including relating dark matter to circular motion, nuclear physics using electric fields, and how to detect subatomic particles using conservation of momentum. All activities presented connect to the new NGSS Standards.

CW06: Perimeter Institute: Hands-on Wave-Particle Duality

Location: STSS 131 A
Date: Monday, July 28
Time: 1:30–2:30 p.m.
Sponsor: Perimeter Institute

Leaders: Dr. Damian Pope, Kevin Donkers

The wave-particle duality is one of the deepest mysteries of quantum mechanics. Come explore hands-on activities that introduce students to this vitally important concept in the quantum world. Perimeter's The Challenge of Quantum Reality classroom resource is developed in collaboration with educators and PI researchers with connections to the new NGSS Standards.

CW07: Perimeter Institute: Beyond the Atom: Remodelling Particle Physics

Location: STSS 131 A
Date: Tuesday, July 29
Time: 11:30 a.m.–12:30 p.m.
Sponsor: Perimeter Institute

Leaders: Dr. Damian Pope, Kevin Donkers

The discovery of the Higgs boson was one of the biggest physics announcements of our generation. Join us as we explore concepts of momentum, charge, and fields being applied to modern particle physics. Perimeter's Beyond the Atom: Remodelling Particle Physics classroom resource is developed in collaboration with educators and PI researchers with connections to the new NGSS Standards.

CW08: Perimeter Institute: Cosmic Mysteries

Location: STSS 131 A
Date: Tuesday, July 29
Time: 1–2 p.m.
Sponsor: Perimeter Institute

Leades: Dr. Damian Pope, Kevin Donkers

Join Perimeter's NEWEST workshop designed to help teachers and students unravel the mysteries of space and the universe. This session shares hands-on activities focused on the big bang theory, expanding universe, black holes, redshift, cosmic microwave background, and more. Perimeter's Cosmic Mysteries classroom resource is developed in collaboration with educators and PI researchers with connections to the new NGSS Standards.

CW09: Vernier Software: Data Collection Tools for Physics, Including LabQuest2, the Motion Encoder System, and Vernier Data Share for iOS and Android

Location: Coffman Memorial Union - President's Room
Date: Tuesday, July 29
Time: 11:30 a.m.–1:30 p.m.
Sponsor: Vernier Software and Technology

Leaders: David Vernier, Fran Poodry, John Gastineau

Attend this hands-on workshop to learn about LabQuest 2 and other new data collection tools from Vernier Software & Technology. We will start with and interactive presentation to show you how Vernier data collection works with both LabQuest and computer, and how the data can be shared with iPad or Android tablets, phones, and other computers. Then, we will make available a variety of new and interesting Vernier apparatus for you to investigate individually. a) Use the LabQuest 2 interface, and see its large color touch screen with the updated LabQuest App. b) Collect and analyze data on an iPad, Android tablet, or phone—ours or yours. c) Test the new Vernier Motion Encoder System, and see just how good dynamics cart data can be. d) Collect data with the Vernier Diffraction Apparatus, and see just how easy it is to map out intensity for single-slit and double-slit patterns. e) Perform a conservation of angular momentum experiment using our Rotary Motion Sensor. f) Collect wind turbine data using the New Vernier Energy Sensor with Kidwind turbines. g) Review the second edition of Physics with Vernier. h) Do some video analysis using Vernier Video Physics on iPad.

CW11: Liti Holographics

Location:
Date: Tuesday, July 29
Time: 11:30 a.m.–1:30 p.m.
Sponsor:

Leader: Paul Christie

CW12: Closing the Gap Between Homework and Test Scores with ExpertTA and OpenStax College

Location: Coffman Memorial Union - Mississippi Room
Date: Tuesday, July 29
Time: 12–1 p.m.
Sponsor: Expert TA

Leader: Jeremy Morton

The delta between students' homework grades and test scores is a concern we share with you. What do these gaps tell us about student retention, student understanding, and our assessment strategies? Expert TA has investigated these gaps for the last several years and found that major factors are access to immediate, meaningful feedback and practice on symbolic questions. Knowing this, Expert TA has developed the largest available library of problems that require students to enter symbolic and algebraic responses. Additionally, our system provides exclusive "true" partial credit grading. Our math engine identifies detailed mistakes within students' symbolic answers, deducts points, and provides specific Socratic feedback. Access to high quality open resources can also close the gap. ExpertTA is proud to partner with OpenStax College and to be the only homework system including every problem from their book, *College Physics*. OpenStax College is a Rice University-based nonprofit organization committed to improving student access to quality learning materials. OpenStax College Physics is extensive peer-reviewed, readable, accurate, and meets the scope and sequence requirements of your course. Please join us and learn how other instructors are using these integrated resources to reduce cost to students, increase academic integrity, and improve overall outcomes.