Call for Participants to a Faculty Workshop: Conference on the Integration of Computation, Experiment, and Physical Theory (ConCEPT)

We invite applications for a four-day workshop that brings together physics faculty dedicated to reimagining undergraduate instruction through the full integration of **theory**, **computation**, and **experiment**—the three foundational pillars of physics. Travel and lodging expenses will be covered for all participants (see further details below).

About the Workshop

This workshop will convene approximately **two dozen physics faculty** to collaboratively *brainstorm, design, and begin beta testing* pedagogical modules that authentically weave together the three pillars. The eventual aim is for these modules to be made publicly available once completed, enabling wide adoption and adaptation across various physics departments.

Goals of the Workshop

- Spur the creation of activities that combine theory, computation, and experimentation.
- Create an ongoing community to share and test these activities at existing regional and national meetings and conferences, including AAPT Meeting sessions.
- Equip students with the necessary skills to conduct authentic research in a manner that includes theory, computation, and experiment, in preparation for their future careers in science, engineering, and beyond.

Why Participate?

Physics students today are expected to develop the skills in college that will enable them to integrate theory, computation, and experiment in various ways throughout their future careers. Yet, most curricula remain siloed, and faculty often face significant barriers–such as limited time, training, or resources–that hinder the development of integrated instructional materials. This workshop aims to lower those barriers by:

- providing a *collaborative space* for module development,
- supplying *ready-to-run curricular materials*, and
- connecting participants with a *national network* of like-minded educators.

Impact and Dissemination

The workshop will initiate the development of integrated modules, with participants beginning the process of design and beta testing. These modules will be:

- Piloted in early stages during and after the workshop, with continued refinement by participants at their home institutions.

- Shared and iteratively improved through *conferences*, *peer-reviewed publications*, and *open-access repositories*.
- Designed to be scalable and adaptable, ultimately reaching **hundreds of faculty** and **thousands of students**, thereby broadening the impact on physics education nationally and globally.

Who Should Apply?

We welcome applications from any and all physics faculty with an interest in innovative teaching practices—whether your strengths lie in theory, experiment, computation, or all three. Prior experience with integrated modules is not required—just a willingness to collaborate and contribute!

Details

- **Workshop Dates**: June 4 to 7, 2025
- **Location**: Campus of Gonzaga University in Spokane, Washington
- **Application Deadline**: May 5, 2025
- **Funding**: Lodging will be fully covered, and travel support will be provided up to $1,000, with additional flexibility available in some cases based on individual circumstances. This support is made possible by the Jonathan F. Reichert Foundation. Participants will be responsible for their own meal costs.

Application

Faculty interested in participating in the workshop must submit the following materials:

- A one-page statement including the following:
  - Why they are interested in attending the workshop
  - A potential concept for an integrated module
  - Any experience they have had in integrating experiment, computation, and theory in the classroom
- Up-to-date CV

Applicants must send all application materials via email to fritscha@gonzaga.edu with the subject title "ConCEPT Application".

Apply Now to join a dynamic community of educators shaping the future of physics education!

Please submit any questions to Adam Fritsch (fritscha@gonzaga.edu).

Review Committee
Hana Dobrovolny, Texas Christian University
Adam Fritsch, Gonzaga University (host institution)
Nicholas Nelson, California State University – Chico
Todd Zimmerman, University of Wisconsin – Stout