

The **University of Washington Center for Experimental Nuclear Physics and Astrophysics (CENPA)** has an immediate opening for a postdoctoral appointment in the Precision Muon Physics Group. We are seeking an ambitious young scientist who will take a leading role in the MuSun experiment and in the development of our future muon program. The MuSun experiment, co-led by the UW group, is performed by an international collaboration at the Paul Scherrer Institute in Switzerland, which currently provides the most intense low-energy muon beams world-wide. The experiment involves a precision measurement of muon capture in deuterium, to determine the strengths of the axial coupling to the two-nucleon system, the analog to g_A in the nucleon sector. This strength is an important parameter in modern effective field theories, as it calibrates the theory for fundamental astrophysics reactions, like solar pp fusion and νd scattering observed at SNO, and because it contributes to three-nucleon forces and double-beta decay matrix elements. The experimental strategy is based on a unique instrument, a cryogenic deuterium time projection chamber, which serves as an active target. The final detector was largely developed at UW and our group is leading the analysis, in particular the development of sophisticated algorithms required for robust tracking at the required 10^{-5} precision level. MuSun had a very successful 2014 production run and is now gearing up for a large statistics run with the scheduled start in July 2015. Ideally, the successful candidate will participate during this run in Switzerland and then lead the analysis effort at UW together with our team. The analyses are performed at computer clusters of the Extreme Science and Engineering Discovery Environment, where we have significant CPU allocations. After several years of R&D, the experiment is in mature data taking stage and the candidate will have the opportunity to be a main contributor to the final analysis, its presentation and publication.

In addition, this position offers an excellent entry into the search for physics beyond the standard model with high-intensity, low-energy muon beams. In this regard, our group — Professors Hertzog, Kammel, and Garcia— is co-leading the new muon $g-2$ experiment at Fermilab, with a wide range of responsibilities covering the electromagnetic calorimeters, the muon beam and the magnetic field measurements.

We welcome highly motivated applicants interested in challenging and unique precision experiments, who have demonstrated experience in developing and using data analysis frameworks and performing subtle physics analyses. Our location at CENPA also encourages hardware projects, which are supported by a highly skilled and dedicated technical staff. A Ph.D. in nuclear or particle physics, within the last 4 years or expected before starting this position, is required. Applicants should submit an application letter, a curriculum vitae and publications, and arrange to have three letters of recommendation, all sent electronically, to **Prof. Peter Kammel (pkammel@uw.edu) CENPA, Box 354290, University of Washington, Seattle WA 98195.**

The University of Washington is an affirmative action, equal opportunity employer. All qualified applicants will receive consideration for employment without regard to, among other things, race, religion, color, national origin, sex, age, status as protected veterans, or status as qualified individuals with disabilities.