Graduate Student Opportunities in Particle Physics
University of Kansas

Job Title	Graduate Student Opportunities in Particle Physics
Department	Department of Physics and Astronomy https://physics.ku.edu
Institution	University of Kansas Lawrence, Kansas
Date Posted	Dec. 3, 2024
Application Deadline	Dec. 16, 2024
Position Start Date	Aug. 18, 2025
Job Categories	Graduate Student
Academic Field(s)	Physics - Elementary Particles/Nuclear
Job Website	https://physics.ku.edu/admissions/graduate-admissions
Apply By Email	

Job Description

Applications are open for the Ph.D. program of the Department of Physics and Astronomy at the University of Kansas, beginning in fall 2025. Successful candidates have the opportunity to work in experimental particle physics on the CMS experiment at the CERN Large Hadron Collider with Prof. Elliot Reynolds, or on the DUNE and SBN experiments with Prof. Maria Brigida Brunetti, upon mutual agreement.

Students working with Prof. Reynolds would have the opportunity to work in the study of the Higgs boson, the use of modern artificial intelligence techniques for particle physics applications, and the operation and upgrade of the CMS detector. Details about Prof. Reynolds and his research interests can be found at https://physics.ku.edu/people/reynolds-elliot-t-j . The University of Kansas experimental high-energy physics CMS group is pursuing a broad and exciting research program, with

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elements including physics data analysis, and detector development and operation.

Students working with Prof. Brunetti will work on neutrino oscillation experiments at the Deep Underground Neutrino Experiment (DUNE) and the Fermilab Short Baseline Neutrino program (SBN). A focus of the work will be on developing novel reconstruction techniques, including the use of machine learning. Students will also take leadership of a physics analysis, and will be able to participate in any of the group's future experimental activities. Details about Prof. Brunetti and her research interests can be found at https://physics.ku.edu/people/brunetti-maria-brigida .

Financial support can be provided for students working with Prof. Reynolds or Prof. Brunetti, upon mutual agreement. Students working with Prof. Reynolds or Prof. Brunetti are envisaged to have the opportunity to spend time at CERN and/or Fermilab and to attend international meetings and conferences.

The University of Kansas welcomed its first class in 1866, and is now the state's flagship institution and a public university classified as "R1: Doctoral Universities – Very high research activity" in the Carnegie Classification framework. The Department of Physics and Astronomy consists of the Applied Physics, Astronomy and Astrophysics, High Energy Particle Physics and Nuclear Physics research umbrella groups. Beyond the CMS, DUNE and SBN experiments, the High Energy Particle Physics research umbrella group also conducts research in theoretical particle physics and astroparticle physics.

The city of Lawrence was founded as an abolitionist haven, and today it is a vibrant, diverse and welcoming community with about one hundred thousand residents. With a lively, quirky and walkable town center, numerous restaurants, 54 city parks, 30+ music venues, 100+ miles of trails and paths, bike-friendly roads, a free bus system, and scenic surrounding nature, Lawrence ranks among the Top 100 Best Places to Live in the U.S. and the 25 Best College Towns and Cities in the U.S.

Prospective Ph.D. students interested in working with Prof. Reynolds using the CMS experiment are encouraged to send an email to etjreynolds@ku.edu , and those interested in working with Prof. Brunetti on the DUNE and SBN experiments are encouraged to send an email to mbbrunetti@ku.edu . This email should contain a description of your research interests, a CV and your academic transcript. Candidates interested in working with either professor will then need to submit a Ph.D. application to the University of Kansas. Applications that arrive before December 16, 2024 are expected to be given full consideration, though late applications may also be accepted. Details about the University of Kansas Physics Ph.D. can found at https://physics.ku.edu/graduate-program/physics-PhD and about admissions can be found at https://physics.ku.edu/admissions/graduate-admissions . Informal inquiries are welcome, and can be made by email to Prof. Reynolds at etjreynolds@ku.edu and/or to Prof.

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Brunetti at mbbrunetti@ku.edu.

EEO/AA Policy

The University of Kansas prohibits discrimination on the basis of race, color, ethnicity, religion, sex, national origin, age, ancestry, disability, status as a veteran, sexual orientation, marital status, parental status, gender identity, gender expression, and genetic information in the university's programs and activities. Retaliation is also prohibited by university policy. The following person has been designated to handle inquiries regarding the nondiscrimination policies and is the Title IX coordinator for all KU and KUMC campuses: Associate Vice Chancellor for Civil Rights and Title IX, civilrights@ku.edu, Room 1082, Dole Human Development Center, 1000 Sunnyside Avenue, Lawrence, KS 66045, 785-864-6414, 711 TTY

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

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