

**Tenure Track/Tenured Faculty in Applications of Data Science, Engineering, and/or Physics to Particle Accelerators**

 **3 Positions:** F0240A, F0504A, F1052A

Centennial Cluster Initiative / Old Dominion University

Old Dominion University seeks candidates for three faculty positions as part of a multi-position hiring initiative for

***Applications of Data Science, Engineering, and Physics to Particle Accelerators.*** We seek faculty that will complement ODU’s areas of strategic emphasis, including theory and applications of data science/artificial intelligence (AI)/machine learning (ML) to improving existing and future accelerators, particle colliders and light sources for fundamental research and industrial and medical applications. Appointed faculty will be expected to develop/maintain a vibrant, externally funded interdisciplinary research program in accelerator science using AI/ML, engineering, physics and/or related scientific approaches to study topics such as accelerator design and development, advanced performance optimization and analysis of accelerators, large-scale simulations of accelerator performance, and control optimization of accelerators using advanced data science and/or AI/ML techniques.

Appointees are also expected to teach undergraduate and graduate courses (including for the Virginia Innovative Traineeship in Accelerators [VITA] program and the US Particle Accelerator School [USPAS]) and to provide service to their department and the University. All appointments will be placed in the most appropriate academic department(s) at ODU, which might include Physics, Data Science, and/or Electrical and Computer Engineering, and will be affiliated with the Center for Accelerator Science at ODU. Collaboration with other faculty in Physics, Engineering, and the School of Data Science at ODU as well as accelerator scientists at the nearby Thomas Jefferson National Accelerator Facility (Jefferson Lab) will be encouraged.

Candidates whose research relates to understanding and improving the CEBAF accelerator at Jefferson Lab, designing and building the Electron-Ion Collider (EIC), exploring future nuclear physics accelerators, improving the performance of light sources, developing new concepts for accelerators for nuclear and high-energy physics, nuclear medicine and other applications, or visualization and control of accelerators are especially encouraged to apply.

We are inviting applications for the following positions, starting in Fall 2025:

* **Associate/Full Professor (Tenured) in Accelerator Science, Data Science, or Electrical/Computer Engineering.**

We are looking especially for a faculty member who can take on a leadership role within the Center for

Accelerator Science and/or the School of Data Science. A Ph.D. or equivalent in Physics, Computer Science, Data

Science, Mathematics, Engineering, or a closely related field, with expertise in the broad field of Accelerator Science, is required. The successful candidate will have a history of a strong, externally funded research program and should demonstrate ability for excellence in teaching and mentoring at the undergraduate and

graduate levels. Previous faculty and/or national lab experience is strongly preferred. Rank will be commensurate with experience and can be either at the Associate or Full Professor level, with tenure.

* **Assistant Professor (Tenure Track) in Accelerator Science, Data Science, or Electrical/Computer Engineering.** The successful candidate will develop a strong externally funded research program and should demonstrate experience indicative of their ability or interest to teach and/or mentor at the undergraduate and graduate levels. A Ph.D. or equivalent in Physics, Computer Science, Data Science, Mathematics, Engineering, or a closely related field, with expertise in the broad field of Accelerator Science, is required. Postdoctoral experience is strongly preferred.

**How to Apply:** Interested candidates must complete the online application for the field they are interested in at its corresponding webpage, listed below:

Data Science: [**https://jobs.odu.edu/postings/21861**](https://jobs.odu.edu/postings/21861)

Electrical & Computer Engineering: [**https://jobs.odu.edu/postings/21875**](https://jobs.odu.edu/postings/21875)

Physics: [**https://jobs.odu.edu/postings/21837**](https://jobs.odu.edu/postings/21837)

All applications should include the following:

1. A cover letter describing your relevant qualifications and indicating the rank you would like to be considered for;
2. A curriculum vitae
3. A statement of teaching philosophy
4. A statement of research interests
5. Unofficial graduate transcripts
6. Contact information for 3 professional references. At the appropriate time within the Search process, these individuals will be contacted by the Search Committee.

Applications should be submitted by **December 18, 2024** for full consideration. The positions will remain open until filled. Note that final decisions for departmental affiliations can be negotiated at a later stage; any one of the three departments can serve as the initial application recipient. Questions about these positions should be directed to Dr. Sebastian Kuhn (skuhn@odu.edu), Chair of the *Applications of Data Science, Engineering, and/or Physics to Particle Accelerators* Cluster Hire.

**About ODU:** Old Dominion University, located in Norfolk, is Virginia’s forward-focused public doctoral research university with more than 23,000 students, a top R1 research ranking, rigorous academics, an energetic residential community and initiatives that contribute $2.6 billion annually to Virginia’s economy.

Old Dominion University was founded in 1930. In preparation for our centennial anniversary, the institution initiated the **Centennial Cluster Initiative,** a hiring program designed to hire interdisciplinary clusters of faculty around emerging themes. As the first step of that initiative, we seek to hire 25 scholars who can contribute to the university’s growing research and teaching portfolio in the area of artificial intelligence. Those scholars will be housed in departments across campus and work together on scholarly activities related to artificial intelligence.

**About the Department of Physics:** The Physics Department at Old Dominion University contributes to the overall mission of the university through teaching of undergraduate and graduate students, through premier research programs and through outreach to the university community and beyond. The department offers 2 undergraduate majors (Physics and Astrophysics) with several concentrations and about 87 undergraduate students, as well as a minor in Physics. The department has over 50 M.S. and Ph.D. students, including 20 international students. Our faculty are internationally recognized leaders in experimental and theoretical nuclear physics, atomic and molecular physics, accelerator science, and condensed matter physics. The department has 22 regular faculty members, 8 Jefferson Lab Professors, and 3 joint appointments. Our faculty has received many awards and recognitions (including 9 Eminent Scholars, 5 University Professors, 15 Fellows of the American Physical Society, and 4 state-wide SCHEV Outstanding Faculty awards).

**About the Department of Electrical & Computer Engineering:** The Department of Electrical & Computer Engineering (ECE) within the Batten College of Engineering and Technology is committed to delivering world-class academic programs, conducting cutting-edge research, and serving the University, the Commonwealth of Virginia, and the broader professional community. Our department offers undergraduate majors in Electrical Engineering, Computer Engineering, and in Modeling and Simulation Engineering within Computer Engineering. At the graduate level, we provide master's and doctoral programs with concentrations in Electrical and Computer Engineering, as well as Biomedical Engineering. Additionally, we offer a Doctor of Engineering degree with a focus on Cybersecurity. The department's 29 faculty members are leaders in their fields, including eminent scholars and endowed professors who have earned prestigious distinctions such as fellowships in top professional societies. Our faculty also serve as directors of renowned research centers Relevant to this position, ECE faculty serve as directors of the Applied Research Center at Jefferson Lab and of the Institute of Data Science.

**About the School of Data Science:** As one of the three academic units in the Interdisciplinary Schools at Old Dominion University, the School of Data Science is a new initiative that focuses on educating students in the rapidly growing field of data science, conducting cutting-edge research and serving as a center of AI education and research in the University community. Since its establishment in spring 2023, the school has grown to include ten core faculty members and over 80 affiliated faculty members across the campus, with wide range of active research projects from bioinformatics, web science, survey data science to scientific machine learning, explainable AI and generative AI. Faculty of the School of Data Science actively collaborate with researchers from renowned facilities such as Jefferson Lab (sponsored by the Department of Energy), NASA's Langley Research Center, Hampton Roads Biomedical Research Consortium (HRBRC), Brock Virginia Health Sciences (VHS, formerly EVMS), and ODU's Office of Enterprise Research and Innovation (OERI).

**About the Center for Accelerator Science:** Hampton Roads is the host of the Thomas Jefferson National Accelerator Facility (Jefferson Lab), one of the premier accelerator facilities in the world and the pioneer of superconducting radiofrequency technology. ODU has capitalized on the proximity of this National Lab through its longstanding collaboration with Jefferson Lab in Nuclear Physics (since the 1990’s). In 2008, ODU, with the support of Jefferson Lab, created the Center for Accelerator Science (CAS), to expand this collaboration. As a result, ODU is one of the few academic institutions in the country and the world where the next-generation accelerator scientists and engineers can be trained to provide the needed workforce for the design, construction, and operation of particle accelerators. Since its creation in 2008 CAS has received more than $16M in external funding and has graduated 23 Ph.D. students. Many of those students now have leadership positions in DOE laboratories. CAS faculty, staff, and students are key participants and have a leading role in several large-scale international accelerator projects.

*It is the policy of Old Dominion University to provide equal employment, educational and social opportunities for all persons, without regard to race (or traits historically associated with race including hair texture, hair type, and protective hairstyles such as braids, locks, and twists), color, religion, sex or gender (including pregnancy, childbirth, or related medical conditions), national origin, gender identity or expression, age, veteran status, disability, political affiliation, sexual orientation or genetic information. Individuals from minoritized communities, women, veterans and individuals with disabilities are encouraged to apply.*