

# IOWA STATE UNIVERSITY

## **Spedding Postdoctoral Fellow Ames Laboratory (USDOE), Iowa State University**

As a U. S. Department of Energy (DOE) national laboratory located on the campus of Iowa State University, we offer a diverse, innovative working environment that excels at cutting-edge chemistry, physics, and materials research. Ames Laboratory is a world leader in catalysis, polymer upcycling, separations, computational chemistry, rare earths, quantum materials, synthesis, and additive manufacturing. Ames Laboratory is the leader of the Critical Materials Institute, a DOE-supported Energy Innovation Hub.

Ames Laboratory seeks strong candidates for a distinguished Spedding Postdoctoral Fellow, focusing broadly on machine learning, data science and related topics, with particular relevance to research within our Chemical and Biological Sciences (CBS) division, and in alignment with the mission of the U.S. Department of Energy. The Spedding Postdoctoral Fellowship honors Dr. Frank Spedding, Ames Laboratory's first Director. The Spedding Fellowship is a prestigious award that provides an exceptional opportunity for recent Ph.D. recipients of outstanding talent and ability to pursue their own research directions in support of our scientific objectives in a collaborative, multidisciplinary team environment that aims for excellence in science.

Machine learning is a growing research focus at Ames Laboratory, and the successful applicant will help to firmly establish these approaches for projects relevant to CBS (<https://www.ameslab.gov/cbs-research-projects>).

The duties of the position include the design of new machine learning algorithms and methods to experimental and computational data relevant to CBS. Several research projects within CBS may be pursued. Examples of active research areas include: (i) machine learning-guided development of force fields for molecular dynamics simulations and applications; (ii) development of cluster expansion-type models for chemical systems via supervised machine learning; (iii) development of machine learning models to describe the structural features of nanodomains and their associated dynamics in supercooled liquids; and (iv) development of machine learning control systems for automated complex reaction optimization.

Additional key duties include direct supervision of graduate students and writing manuscripts, research proposals and other scientific reports. The candidate should be ready to contribute to a strongly collaborative environment, and show interest in a possible long-term career in the DOE national Laboratory system.

To apply, please click on this link: [https://isu.wd1.myworkdayjobs.com/en-US/IowaStateJobs/job/Ames-IA/Spedding-Postdoctoral-Fellow-of-Artificial-Intelligence---Ames-Laboratory\\_R5391](https://isu.wd1.myworkdayjobs.com/en-US/IowaStateJobs/job/Ames-IA/Spedding-Postdoctoral-Fellow-of-Artificial-Intelligence---Ames-Laboratory_R5391)

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