# University of Wyoming Distinguished Postdoctoral Fellowships for AI-enabled Interdisciplinary Research

## About

The University of Wyoming is inviting applications for Distinguished Postdoctoral Fellows for conducting convergence research at the intersection of different disciplines. This year, the program will support a cohort of up to six postdoctoral fellows for two-year terms. Postdoctoral fellows participating in the program will receive professional development opportunities, including entrepreneurship-focused workshops, and mentorship from experts in at least two disciplines. Projects involving collaboration with DOE National Laboratories are encouraged.

This year, the research projects will focus on **AI applications** in one or more of the following topics. Use of modeling, simulation, digital twins, and other approaches are encouraged in the research projects.

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| **Topic** | **Research areas** |
| Controlled Environment Agriculture | plant sciences, high throughput phenotyping, machine vision, systems engineering, autonomous controls, resource optimization, microgrid, and supply chain analytics |
| Nuclear-power-related engineering | Engineering and technology required to support nuclear power generation, including sensing, control, thermodynamics, radiation effects on materials, chemical and physical topics related to nuclear reactors (including small modular reactors) |
| Cybersecurity/Blockchain | Remote and physical attack/defense, spoofing, credentials, covert and overt control of secure systems, unique security issues related to blockchain and cryptocurrency  |
| Quantum Information Sciences and Engineering | Quantum computing, quantum simulation, quantum algorithms, and quantum materials and devices for applications in quantum computing, sensing, and communication |
| Rural futures | A community-scale “smart village” sensor network and digital twin proof-of-concept, smart and connected communities |
| Energy Materials | All aspects of energy harvesting and conversion, including applications to batteries, hydrogen storage, carbon sequestration and management, catalysis, graphite/graphene, construction materials, and magnets |
| Wildlife, Technology, and Computing  | Animal bio-logging, environmental informatics, remote sensing, and computational workflows to advance the management and conservation of Wyoming’s diverse wildlife |

## Eligibility

The UW Distinguished Postdoctoral Fellows Program will accept applications from:

* Graduate students who are within a year of finishing their PhD
* Recent PhD recipients within three years of graduation

Applications from both domestic and international candidates are welcome. Applicants will identify UW faculty members who can serve as advisors and help them develop and pursue their research interests.

## Applications

Applications for the 2024-25 cohort are now being accepted with the following deadlines: June 1, 2024, and November 1, 2024. Please send your application to vpred@uwyo.edu . The subject line must include ‘Postdoctoral Fellowship Application’. You must include a single PDF file with the following information:

* Cover Page: Name, contact information, proposed topic of research, list of at least four potential advisors from the University of Wyoming
* Curriculum vitae
* Research statement (two pages max): Applicants should propose ideas for projects they wish to accomplish during their tenure in the program.
* Contact information for three references.

## Finding An Advisor

An advisor is a key member of a postdoctoral fellow’s research and professional development. Applicants are encouraged to explore faculty interests across departments in all Schools and Colleges at UW and identify faculty members whose expertise will advance the research interests of the fellow. The program will help match fellows with appropriate advisors as needed. It is anticipated that a fellow will be co-mentored by a pair of faculty members from two different disciplines.

## Funding and Support

Fellows that are accepted into the program will be awarded a two-year stipend starting at $70,000 annually, plus additional funds for benefits coverage. Opportunities for travel grants, professional development as well as computer access will be available.