Innovation Postdoctoral Fellow, AI-ML for Targeted Protein Degradation

Job ID
REQ-10057459

7月 11, 2025

USA

摘要

We are thrilled to seek applications for our Data Science Innovation Fellowship track of the Novartis Postdoctoral Fellowship Program.

This applied research program is designed to change the way we approach drug discovery, offering fellows a unique chance to train in Data Science and AI for biomedical research. As a fellow, you will learn to apply your quantitative and computational skills to make a difference for patients and reimagine medicine at Novartis.

As part of the Data Science Innovation Fellowship track of the Novartis Postdoctoral Fellowship Program, you will join our vibrant, dedicated postdoctoral community for events, including the monthly postdoc seminars and other scheduled events for postdocs. Fellows are surrounded by a supportive, collaborative community of postdocs and scientists, who would contribute to the acceleration of your scientific growth, along with building your professional skillset, e.g. you will have the opportunity to do a Postdoc Practicum in another laboratory or in a business function of Novartis. This applied research program is up to 3 years in length, with the option of applying for an extension of up to 1 year

(pending review by the Head of Biomedical Education & Innovation and the postdoc supervisor).

Drug hunting is a team sport, and you will gain experience in Data Science & AI for drug discovery as part of a multi-disciplinary team in Biomedical Research. You will drive innovation by deploying cutting-edge data approaches in collaboration with a vibrant and diverse community of over 300 data scientists globally. The program provides a unique platform to work on real-world, biomedical data at scale, rarely accessible in academia. Seize this chance to be at the forefront of Data Science and AI, and shape the future of drug discovery!

About the Role

Internal Job Title: Innovation Postdoctoral Fellow

Position Location: onsite, Cambridge, MA #LI-onsite

About the Role:

Are you passionate about leveraging cutting-edge AI and machine learning (ML) techniques to revolutionize the field of targeted protein degradation (TPD)? Novartis, a pioneer in this space, is seeking an exceptional Data Science Postdoc with a focus on advancing computational methods for drug discovery.

Our unique research program integrates advanced computational tools with very large and proprietary internal datasets that integrates deep CRBN glue SAR with functional data across hundreds of previously undrugged targets and includes extensive ground-truth ternary complex X-ray and cryoEM structures with whole cell proteomics results. Together these data provide a unique opportunity to model biological interactions, exploring novel chemical and target spaces. You will collaborate with interdisciplinary experts across data science, cheminformatics, structural biology, and biology to develop transformative solutions that impact diverse therapeutic areas.

Start date: October 2025

Key Responsibilities:

- Develop ML strategies to leverage internal TPD recruitment and degradation data for improved chemotype diversity, hit rates, and understanding of canonical and non-canonical glues.
- Explore diverse glue modes through advanced computational pipelines and apply generative AI models to design novel CRBN binding warheads and.
- Analyze protein-protein interactions (PPIs) and target-E3 ligase-glue interactions using tools like co-folding techniques, protein surface interaction predictors, and advanced 3D GenChem

approaches.
- Collaborate with internal and external experts to implement AI-driven workflows for identifying binding pockets and designing novel ligand structures.
- Validate algorithmic outputs through retrospective benchmarking and experimental collaboration for biological validation.
- Support pipeline development for structural design of TPD candidates and contribute to impactful publications and presentations in leading scientific journals.

Key Requirements:

- Ph.D. (awarded within the past 2 years) in Computer Science, Machine Learning, Computational Chemistry, Biophysics, or related fields.
- Proficiency with scientific programming languages (e.g., Python) as well as strong skills in algorithm development, data analysis, and experience with AI/ML frameworks (e.g., PyTorch, JAX) for drug discovery, protein modeling, or cheminformatics.
- Familiarity with 3D generative chemistry methods (e.g., VAEs, flow and diffusion models, transformers), protein surface analysis tools, or related TPD research techniques.
- Experience manipulating large, complex data sets.
- Ability to work collaboratively with multidisciplinary teams across chemistry, biology, and data science.
- Familiarity with targeted protein degradation is a plus.
- Strong publication record or other scientific achievements (i.e. awards, patents, grants).
- Excellent analytical, communication, presentation and organizational skills.
- Passion for fundamental exploratory research and boundless curiosity.

How to apply:

Please submit your CV and cover letter by September 1, 2025 for consideration. Please make sure to discuss in the cover letter how this training program will help you fulfill your career goals.

The starting salary for this position is $87,000 per year.

US-based eligible employees will receive a comprehensive benefits package that includes health, life and disability benefits, a 401(k) with company contribution and match, and a variety of other benefits. In addition, employees are eligible for a generous time off package including vacation, personal days, holidays and other leaves. #PDX #DSIF

Why Novartis: Helping people with disease and their families takes more than innovative science. It takes a community of smart, passionate people like you. Collaborating, supporting and inspiring each

other. Combining to achieve breakthroughs that change patients ' lives. Ready to create a brighter future together? https://www.novartis.com/about/strategy/people-and-culture

Join our Novartis Network: Not the right Novartis role for you? Sign up to our talent community to stay connected and learn about suitable career opportunities as soon as they come up: https://talentnetwork.novartis.com/network

Benefits and Rewards: Read our handbook to learn about all the ways we ' ll help you thrive personally and professionally: https://www.novartis.com/careers/benefits-rewards

EEO Statement:

The Novartis Group of Companies are Equal Opportunity Employers. We do not discriminate in recruitment, hiring, training, promotion or other employment practices for reasons of race, color, religion, sex, national origin, age, sexual orientation, gender identity or expression, marital or veteran status, disability, or any other legally protected status.

Accessibility & Reasonable Accommodations

The Novartis Group of Companies are committed to working with and providing reasonable accommodation to individuals with disabilities. If, because of a medical condition or disability, you need a reasonable accommodation for any part of the application process, or to perform the essential functions of a position, please send an e-mail to us.reasonableaccommodations@novartis.com or call +1(877)395-2339 and let us know the nature of your request and your contact information. Please include the job requisition number in your message.

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Business Unit
Universal Hierarchy Node

地点
USA

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Massachusetts

站点
Cambridge (USA)

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U175 (FCRS = US175) Novartis Institutes for BioMedical Research, Inc.

Functional Area
Research & Development

Job Type
Full time

Employment Type
Regular

Shift Work
No

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