NOVARTIS

Data Science & AI Innovation Postdoctoral Fellow d42

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Сводка

The AI Innovation Postdoctoral Fellow will develop cutting-edge machine learning and generative AI methods for treatment effect modeling, patient stratification, and virtual clinical trials using large-scale clinical trial datasets. The role combines methodological research in causal AI and predictive modeling with real-world biomedical applications, aiming to improve clinical decision-making, biomarker discovery, and trial design. The successful candidate will collaborate across multidisciplinary research teams and contribute to scientific publications and innovation in AI-driven drug development.

Location: Basel, Switzerland
Duration: 3 years
Program start date: October 1, 2026
Application deadline: July 15, 2026 EOB

About the Role

We are excited to invite applications for the Novartis Biomedical Research Postdoctoral Fellowship Program, a unique training opportunity designed for exceptional early-career scientists eager to tackle some of the most challenging problems in biomedical research and drug discovery.

As a Postdoctoral Research Fellow, you will join data42 in Basel, and pursue an innovative research project at the forefront of biomedical science and drug discovery. You will work alongside leading scientists in a highly collaborative, multidisciplinary environment while gaining exposure to the broader ecosystem that translates scientific discovery into medicines.

Our fellows are empowered to ask bold scientific questions, apply cutting-edge technologies, and develop approaches that have the potential to transform patient care.

Research Opportunity

This is a unique opportunity to work at the frontier of machine learning and real-world biomedical impact. The goal: help re-define how clinical trials are analyzed, simulated and designed. You will have the opportunity to build next-generation models that go beyond prediction and learn treatment effects, tackle counterfactual reasoning at patient level, explore generative “digital patients” and synthetic trials. You will have access to one of the richest biomedical data environments globally. Clinical + biomarker + omics datasets from hundreds of thousands of patients across thousands of trials and real-world data assets for validation and generalization. Your project will contribute to improving patient stratification, biomarker identification, trial design and decision-making with the aim of laying the foundations for future virtual clinical trials. You will work with real clinical trial data at scale, combine methodological ML research + translational impact, collaborate with experts across ML, biology, and medicine to build the foundations for digital twins and in-silico trials.

Why Join the Program?

The Novartis Biomedical Research Postdoctoral Fellowship Program is designed to develop the next generation of scientific leaders, powering the future of medicine, through rigorous research, and immersive learning experiences, such as implementation of AI tools in biomedical research.

Postdoctoral Research Fellows benefit from:

- Guidance from accomplished scientific leaders and subject matter experts
- Access to advanced technologies, platforms, and research capabilities
- Collaboration across disciplines and organizational boundaries
- A global and diverse community of postdoctoral fellows
- Dedicated programming designed to help fellows thrive throughout their careers.
- Personalized experiential learning opportunities through a Postdoc Practicum that empower fellows to explore new scientific domains, build cross-functional expertise, and expand their impact beyond their primary research project.
- Opportunities to present research, publish in leading journals, and build an international scientific network

We are entering a new era of biomedical research breakthroughs through the convergence of biology, technology, and artificial intelligence tools, and fellows are also supported in engaging with these emerging approaches.

This is a full-time training position of up to three years in duration.

Reimagining Medicine Together

At Novartis, our purpose is to reimagine medicine to improve and extend people's lives. Through this program, you will grow as a scientist and future leader while contributing to discoveries that may ultimately benefit patients worldwide.

Key Responsibilities

- Develop and benchmark machine learning models for treatment effect estimation, patient stratification, and counterfactual outcome prediction from clinical trial data.
- Design and evaluate generative AI models for patient trajectory simulation, synthetic cohort generation, and virtual clinical trial applications.
- Develop methods that generalize treatment effect models across patient populations, disease cohorts, and clinical indications.
- Apply causal inference and explainable AI approaches to identify predictive and mechanistic biomarkers associated with treatment response and adverse events.
- Define and refine ML research strategy and experimental designs to achieve scientific research goals.
- Collaborate with interdisciplinary teams spanning data science, translational medicine, oncology, immunology, and drug development to address high-priority scientific questions.
- Disseminate research through publications, conference attendance and internal seminars and presentations.

Essential Requirements

- PhD (or equivalent doctoral degree) in a relevant scientific discipline completed prior to the fellowship start date. The program is intended for scientists immediately following their PhD training (graduated in 2026)
- Demonstrated record of scientific achievement (publications, presentations, patents, or equivalent)
- Strong commitment to learning, innovation, and professional development
- Strong foundation in ML (deep learning, probabilistic modeling, or similar) and statistics
- Demonstrated experience in deep model development including architecture and training task design.
- Interest in Biology, clinical data and/or drug discovery
- Interdisciplinary communication skills

Desirable Requirements

- Experience in causal ML, representation learning, and generative models
- Experience of working in multidisciplinary teams.
- Experience in developing machine learning models for regulatory applications

Important:

Please submit your CV and cover letter by July 15, 2026 end of day.

In your cover letter, please describe your research interests, career aspirations, and how participation in the Novartis Biomedical Research Postdoctoral Fellowship Program will support your long-term development.

The start date for the 2026 Novartis BR Postdoctoral Fellowship Program cohort is October 1, 2026. Please confirm your

availability to start in 2026 in your cover letter.

Please note that we can only accept applicants who are eligible to work in Switzerland

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

Benefits and Rewards: Learn about all the ways we'll help you thrive personally and professionally.
Read our handbook (PDF 30 MB)

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Biomedical Research
Business Unit
Research
Место
Швейцария
Сайт
Basel (City)
Company / Legal Entity
C028 (FCRS = CH028) Novartis Pharma AG
Functional Area
Others
Job Type
Full time
Employment Type
Early Career (Fixed Term)
Shift Work
No
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List of links present in page

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