Postdoc: Bioinformatics, Cancer Genomics, Epigenomics, Precision Medicine

*We are recruiting an ambitious **computational postdoc** who wants to pursue groundbreaking research in bioinformatics and its applications in cancer research, including data analysis and methods development in the areas of genomics, epigenomics, and precision medicine. Our group at the **CeMM Research Center for Molecular Medicine of the Austrian Academy of Sciences** in Vienna combines wet-lab biology/medicine including massive-scale data production (cancer genomes/epigenomes, single-cell sequencing, CRISPR screens) with advanced bioinformatics including data science algorithms and deep learning. We work closely with physicians at the Vienna General Hospital & Medical University of Vienna to advance cancer therapy by precision medicine.*

The Project
Our lab has pioneered the combined use of high-throughput epigenomics and advanced computational methods for dissecting the epigenetic basis of cancer, toward the goal of enabling new approaches to precision medicine (Nature Reviews Cancer 2012). In recent projects, we have connected epigenome and clinical imaging data for brain tumor progression (Nature Medicine 2018), investigated epigenetic heterogeneity in a cancer of childhood (Nature Medicine 2017), identified clinically predictive chromatin signatures in leukemia (Nature Communications 2016), and modeled the time series dynamics in leukemia response to therapy (paper in revision). All four papers were spearheaded and first-authored by bioinformaticians. Furthermore, we have developed technology that enables large-scale functional dissection using CRISPR single-cell sequencing (Nature Methods 2017) and drug screening (Nature Chemical Biology, in press). In ongoing and future work, for which the successful candidate will play a leading role, we are studying cancer immunotherapies, the tumor microenvironment, and time series of therapy response.

The Candidate
We are looking for ambitious candidates who want to build a scientific career in bioinformatics and/or data science research with applications in biology and medicine. Candidate should have a strong background in the quantitative sciences (computer science, bioinformatics, statistics, mathematics physics, engineering, etc.). We will also consider applicants with a background in biology or medicine who have strong quantitative skills (including programming) and a keen interest in pursuing computational projects (a combination with wet-lab research is possible).

The Lab (http://epigenomics.cemm.oeaw.ac.at/)
The Medical Epigenomics Lab at CeMM pursues an interdisciplinary and highly collaborative research program aimed at understanding the cancer epigenome and establishing its utility for precision medicine. The lab is internationally well connected and active in several fields:
- *Bioinformatics.* New computational methods enable the high-throughput analysis of disease mechanism and therapy responses. We develop algorithms for multi-omics data analysis, time series modeling, and clinical data integration.
- *Epigenomics.* Many diseases show deregulation of epigenetic cell states. As members of the Human Cell Atlas and the International Human Epigenome Consortium, we use epigenome sequencing to dissect the epigenetic basis of cancer and immunity.
- *Technology.* Groundbreaking biomedical research is frequently driven by new technologies. Our lab is therefore heavily invested into technology development, including single-cell sequencing, CRISPR screens, and deep neural networks.
- *Digital Medicine.* New technologies in the area of genomics, imaging, and wearable sensors transform medicine into a 'big data' science. We employ machine learning / artificial intelligence to leverage such data for better patient care.

The Principal Investigator (https://scholar.google.com/citations?user=9qSsTcIAAAAJ)
Christoph Bock is a principal investigator at CeMM. His research focuses on bioinformatics, epigenetics, cancer biology, and high-throughput technology development. He is also a guest professor at the Medical University of Vienna, scientific coordinator of the Biomedical Sequencing Facility at CeMM, and adjunct group leader for bioinformatics at the Max Planck Institute for Informatics. He is a member of the Young Academy of the Austrian Academy of Sciences (since 2017) and recipient of several major research awards, including the Max Planck Society's Otto Hahn Medal (2009), an ERC Starting Grant (2016-2021), and the Overton Prize of the International Society of Computational Biology (2017).

The Institute (http://www.cemm.at/)
CeMM is an international research institute of the Austrian Academy of Sciences and a founding member of EU-LIFE. It has an outstanding track record of top-notch science (last few years: >10 papers in Nature/Cell/Science/NEJM, >25 papers in Nature/Cell sister journals) and medical translation. With just over a hundred researchers, CeMM provides a truly collaborative and personal environment, while maintaining critical mass and all relevant technologies. Research at CeMM focuses on cancer, inflammation, and immune disorders. CeMM is located at the center of one of the largest medical campuses in Europe, within walking distance of Vienna's historical city center. A study by "The Scientist" **placed CeMM among the top-5 best places to work in academia world-wide** (http://the-scientist.com/2012/08/01/best-places-to-work-academia-2012). Vienna is frequently ranked the world's best city to live. It is a United Nations city with a large English-speaking community. The official language at CeMM is English, and more than 40 different nationalities are represented at the institute. CeMM promotes equal opportunity and harbors a mix of different talents, backgrounds, competences, and interests. Postdocs at CeMM are paid according to the Austrian Science Fund's salary scheme, which amounts to an annual gross salary slightly above EUR 50,000.

Please apply online (https://goo.gl/C7bBbU) with cover letter, CV, academic transcripts, and contact details of three referees. Applications will be reviewed on a rolling basis. Any application received by 10 January 2019 will be considered. Start dates are flexible.