

Ce-M-M-

Research Center for Molecular Medicine
of the Austrian Academy of Sciences

We are looking for **enthusiastic bioinformatics postdocs** who would like to build and advance their career in computational biology and biomedical research. Our lab is based at the **CeMM Research Center for Molecular Medicine of the Austrian Academy of Sciences in Vienna**. It combines advanced technologies (epigenomics, single-cell sequencing, drug screening, mass spectrometry, etc.) with a deep interest in computational modeling and relevant clinical collaborations. Our goal is to advance cancer therapy through truly systems-level research focusing on the cancer epigenome.



The Candidate

We are looking for highly motivated and academically outstanding candidates who want to pursue a scientific career in the field of computational and medical epigenomics. An ideal candidate would have a background in the computational sciences (bioinformatics, statistics, physics, engineering, etc.) and some prior experience with collaborative research in high-throughput biology. We will also consider applicants with a background in molecular biology (including functional genomics, chemical biology, human genetics, molecular medicine, etc.) who have strong quantitative skills and/or a research interest that would fit well with a systems medicine environment.

The Lab (<http://www.medical-epigenomics.org/>)

The Medical Epigenomics Lab at CeMM combines large-scale epigenome analysis with stem cell biology and computational modeling, in order to better understand and treat cancer and other diseases. We collaborate with biologists and clinicians at the Medical University of Vienna and internationally, aiming to advance precision medicine through technological innovation. Specific research interests include:

- *Epigenomics*. We perform large-scale epigenome mapping in order to dissect the dynamics of cancer development and emerging drug resistance. This work is part of the European BLUEPRINT project and the International Human Epigenome Consortium.
- *Technology*. Exciting biomedical research is often driven by new technologies. Our lab is therefore heavily invested into technology development, including single-cell protocols, nanopore sequencing, CRISPR, and epigenome editing.
- *Bioinformatics*. New algorithms and advanced computational methods allow us to accurately infer epigenetic cell states from large-scale datasets, in order to reconstruct the epigenetic landscape that controls cellular differentiation and reprogramming.
- *Diagnostics*. Using large-scale DNA methylation mapping, bioinformatic prioritization, and functional characterization, we strive to develop clinically relevant biomarkers for informing personalized cancer therapy.

The Project

The lab is driven by the ideas of all its members. If you already have a project in mind, we would like to hear from you. If not, here are a few topics for inspiration: (i) Why is leukemia a disease of the elderly? Can we identify an “epigenetic clock” that counts down toward leukemia? What is wrong with this clock in those rare cases of childhood leukemia? (ii) Can we construct a blood cancer from scratch, by inducing only epigenetic defects? Which combination of pathways provides the minimum core of an epigenetic leukemia? (iii) How can we make epigenome data useful for personalized medicine? Every physician uses Google – can we build a “Google for the epigenome”?

The Principal Investigator (<https://scholar.google.com/citations?user=9qSsTcIAAAAJ>)

Christoph Bock is a bioinformatician and epigenomics researcher. He is a principal investigator and head of the Medical Epigenomics Laboratory at the CeMM Research Center for Molecular Medicine of the Austrian Academy of Sciences. He is also guest professor at the Medical University of Vienna's Department for Laboratory Medicine, scientific coordinator of the Biomedical Sequencing Facility at CeMM, and adjunct group leader at the Max Planck Institute for Informatics. Christoph graduated *summa cum laude* at the Max Planck Institute for Informatics and Saarland University with a PhD thesis on computational epigenetics. Subsequently, he was a postdoctoral research fellow at the Broad Institute of MIT and Harvard before joining CeMM in 2012. Christoph Bock is a 2009 recipient of the Otto Hahn Medal by the Max Planck Society and a 2014 recipient of the New Frontier Group award of the Austrian Academy of Sciences. He leads Genom Austria, which is the Austrian contribution to the International Network of Personal Genome Projects. He is also a member of the European BLUEPRINT project and contributes to the work of the International Human Epigenome Consortium to map 1,000 reference epigenomes.

The Institute (<http://www.cemm.at/>)

The CeMM Research Center for Molecular Medicine is an international and interdisciplinary research institute of the Austrian Academy of Sciences. Driven by medical needs, CeMM integrates basic research and medical expertise to pursue innovative diagnostic and therapeutic approaches focused on cancer, inflammation, and immune disorders. CeMM is located in a new building at the center of one of the largest medical campuses in Europe, within walking distance of Vienna's historical city center. According to a study by “The Scientist”, **CeMM is 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 30 different nationalities are represented at the institute.

Please submit cover letter, curriculum vitae, academic transcripts and contact details of three referees to application@cemm.at. Applications will be reviewed on a rolling basis, and any application received by 10 July 2015 will be considered. Start dates are very flexible. Please feel free to contact Christoph Bock directly in case you have specific questions e.g. about scientific topics and project ideas.