

## Postdoctoral Fellows in Molecular Immunology and Infection Biology

**Short Summary:** The Bergthaler laboratory at the CeMM Research Center for Molecular Medicine of the Austrian Academy of Sciences in Vienna is offering two positions for Postdoctoral Fellows to investigate fundamental molecular questions relevant to viral infections, antiviral immune responses and inflammatory pathologies. As evident by our most recent publications in *Nature Immunology*, *Immunity* or *PLoS Pathogens*, our group undertakes systemic approaches to infection, putting a strong emphasis on the crosstalk between metabolism and inflammation, and on capturing the pathophysiological complex dynamics at the organ and organism level.

**The Projects:** You will have the opportunity to make original contributions to pertinent questions of inflammatory diseases and infection biology.

### Project 1: **Metabolite-driven inflammation in viral hepatitis.**

This project aims to study novel metabolic-inflammatory hubs which modulate antiviral immune responses and liver damage. Well-defined viral infection models will be coupled with the latest technologies (e.g. single cell sequencing, in vivo gene delivery systems, metabolomics, metabolic flux measurements) in order to unveil how metabolic pathways and metabolites shape the immune system and tissue pathology. This in turn may result in new therapeutic avenues to reinvigorate immunological responses or alter disease tolerance.

### Project 2: **Impact of chromatin-associated proteins in inflammation.**

To address the role of dynamic chromatin modifications in immunoregulation, chromatin-related proteins will be studied in several defined models of infectious and sterile inflammation *in vivo*. Newly generated and unpublished gene-targeted mouse models will be investigated using immunological and virological assays and complemented with systems-level readouts (e.g. ChIP-seq, RNA-seq, drug screens). This integrative approach is expected to uncover novel molecular mechanisms at the interface of chromatin biology and immunology, providing insights into the establishment of epigenetic and immune memory and the impact of sequential infections.

The projects will benefit from a substantial reservoir of unpublished data as well as a variety of novel reagents and access to cutting-edge technologies. Our group has established a number of well-defined genetic systems and disease models and we have access to leading core facilities for systems-level approaches (e.g. chemical biological drug screens, metabolomics, next-generation sequencing, proteomics).

**Your Profile:** If you are a PhD student in your last year of studies or a recent graduate who received the PhD no later than 3 years ago you are encouraged to apply. Applicants with a medical background (MD or DVM) and a strong inclination to molecular mechanistic research are much welcomed as well.

You should have a strong publication track record with at least one first-author paper in a peer-reviewed journal. You should have obtained extensive experimental training in molecular biology, immunology and animal models, and bring a pathophysiological understanding of infectious and inflammatory diseases with you. Computational biologists with interest in immunology and host-pathogen interaction or persons with strong interest in technology development for the aforementioned areas are also encouraged to apply. Further skillsets (e.g. histology, systems-level data analysis, population genetics, biomathematical modeling) are welcomed assets.

We are looking for highly motivated colleagues from diverse backgrounds (immunology, virology, microbiology, molecular biology, tissue biology, computational biology, technology development) who are enthusiastic to join our quest of addressing fundamental biological questions with relevance to human diseases. You should be a critical scientist with a creative mind to think the unthinkable and a team player with strong interdisciplinary communication skills. Ultimately, this position in a highly dynamic and engaging environment will empower you in your pursuit for continuing a scientific research career, especially on the path to becoming an independent principal investigator.

The Lab: Our aim is to unravel novel molecular mechanisms of infectious diseases and inflammation. The lab is interested in the molecular underpinnings of epigenetic immunoregulation, the crosstalk of metabolism and inflammation and the molecular dynamics of tissue pathology. We employ experimentally tractable infection models and complementary state-of-the-art tools of virology, immunology, genetics, pathology, metabolomics and systems biology.

Recent publications: Khamina K et al. *PLoS Pathogens* 2017 (PMID: 292618079), Kosack L et al. *Scientific Reports* 2017 (PMID: 28900132), Bhattacharya A et al. *Immunity* 2015 (PMID: 26588782), Schliehe C. et al. *Nature Immunology* 2014 (PMID: 25419628)

Andreas Bergthaler received training in premier laboratories at the University of Tokyo, University/ETH Zurich and at the Institute for Systems Biology in Seattle. His team currently consists of 11 members from 7 countries, who closely collaborate across projects. The lab maintains collaborations with leading scientists and clinicians at the adjacent Medical University of Vienna and with other renowned collaborators at national and international institutions. Scientific and social interactions are supported by lab meetings, journal clubs, seminars with renowned international guest speakers as well as by annual lab retreats. The lab is funded by intramural funds from the Austrian Academy of Sciences as well as by external grants (Austrian Science Fund (FWF), European Research Council (ERC)). More information can be found at the websites of the Bergthaler Lab at <http://www.bergthaler1.at> and <http://cemm.at/research/groups/andreas-bergthaler-group/>.



The Institute: CeMM is an international research institute of the Austrian Academy of Sciences and founding member of EU-LIFE (<http://eu-life.eu>), an association of leading biomedical research institutes in Europe. CeMM has an outstanding scientific track record (last five years: >10 papers in Nature/Cell/Science/NEJM, >25 papers in Nature/Cell sister journals), medical translation, and spin-off companies. With just over a hundred researchers, CeMM provides a truly collaborative (<http://cemm.at/career/why-work-at-cemm/collaborative-work-environment/>) 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 worldwide (<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 highly international city with a large English-speaking community. The official language at CeMM is English, and more than 40 nationalities are present at the institute. CeMM aims to promote equality of opportunity for all with the right mix of talent, competences, and potential thus we welcome applications from candidates with diverse backgrounds.

The salary for this position is paid according to the FWF salary scheme. This is an annual salary of approximately 50,000 EUR (gross). Initial funding is available, but we would also like to encourage you and support you in your application for your own post-doctoral fellowship.

Please apply online (<https://cemm.jobbase.io/job/f6rex65c>) with cover letter, CV, academic transcripts, and contact details of three referees. Applications will be reviewed on a rolling basis. Start dates are flexible. Deadline for applications: 15.2.2018