

Master Student in Bioinformatic Analysis of Infections

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Project title: Single-cell analysis of viral infection

In the laboratory of **Dr. Andreas Bergthaler** at the CeMM Research Center for Molecular Medicine in Vienna, Austria, we study pertinent pathophysiological questions linked to viral infections, inflammation and immunity. A major aspect of our research is the integration of data-driven approaches to our biological research at the host-pathogen interface and pathology. We have acquired extensive, in-depth knowledge of host responses to viral infection emphasizing complex interactions between different organs and the immune system (e.g. Lercher A et al. *Immunity* 2019 DOI: 10.1016/j.immuni.2019.10.014; Baazim H et al. *Nature Immunology* 2019 DOI: 10.1038/s41590-019-0397-y; Bhattacharya A et al. *Immunity* 2015 DOI: 10.1016/j.immuni.2015.10.013). In this context, we look for an ambitious **computational Master student** to do a paid Master Thesis (up to 12 months) on modeling the dynamics of viral infection at single-cell resolution.

During your Master Thesis project in the Bergthaler lab, you will be co-supervised by the Senior Data Analyst Dr. Alexandra Popa. You will learn and employ *bioinformatic tools* to analyze single-cell data from *virus infected organs*, build robust *machine learning models* to label cells as well as their dynamics across infection timelines and perform *analyses on interaction and biological pathways* of the observed changes.

As a member of the Bergthaler team, you will be part of cutting-edge research projects and will have the opportunity to model and integrate multiple types of data, from single-cell transcriptomics to proteomics and metabolomics. As a member of the host institution CeMM, you will be integrated in a highly collaborative environment and benefit from in-house generated large datasets. You will also be part of the vibrant community of bioinformaticians and attend bi-weekly bioinformatics meetings at CeMM.

<u>The Lab</u>: The principal investigator Dr. Bergthaler received training in premier laboratories at the University and ETH Zurich, University of Tokyo and at the Institute for Systems Biology in Seattle. His team consists of ten

members representing seven nationalities and different scientific backgrounds, who closely collaborate across projects. The Bergthaler lab is supported by competitive funding from the European Research Council (ERC), the Austrian Science Fund (FWF) and the Austrian Academy of Sciences.

Lab Twitter account: https://twitter.com/Bergthalerlab

Lab website: http://www.bergthaler1.at

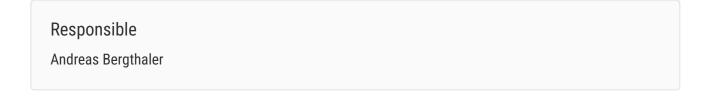
<u>The Institute</u>: CeMM is a biomedical research institute of the Austrian Academy of Sciences and provides a collaborative and dynamic environment for its employees from more than 45 nationalities. CeMM aims to promote equality of opportunity for all with the right mix of talent, competences, and potential and thus we welcome applications from candidates with diverse backgrounds. More information: <u>http://cemm.at/</u>

<u>The Location</u>: Austria's capital Vienna is located in the heart of Europe and ranks as one of the most attractive cities worldwide. Vienna hosts one of the headquarters of the United Nations, which together with many academic institutions and companies results in a vibrant melting pot of expat communities who may enjoy, for example, numerous cultural and culinary occasions or the nearby outdoors of the Vienna Woods.

Your Application:

Please submit your application at https://cemm.jobbase.io/job/hkqgru9i and include a cover letter, CV, academic transcripts and contact details of three referees. Deadline for application is 15.4.2020. Applications will be reviewed on a rolling basis. Starting dates are flexible.

Additional informa	ion	
City	Vienna	
Position type	Full-time employee	
Start of work	01.06.2020	



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