



Helmholtz Zentrum München is a research center with the mission to discover personalized medical solutions for the prevention and therapy of environmentally triggered diseases and promote a healthier society in a rapidly changing world.

News on the Corona pandemic

With us you will support renowned researchers in a vibrant international environment. Their task is to improve people's quality of life with excellent research results.

The [Comprehensive Pneumology Center \(CPC\)](#) at HMGU is a translational research center dedicated to respiratory medicine, which is also a partner site of the [German Center for Lung Research \(DZL\)](#), an association of the leading university and non-university institutions dedicated to lung research in Germany.

A Ph.D. student position is available (earliest starting date January 2021) as a shared project between the labs of Dr. Gerald Burgstaller and Dr. Ali-Önder Yildirim at the Helmholtz Zentrum München. We are looking for highly motivated candidates with a strong background in biology, advanced imaging methods, image analysis as well as experience in mouse models and handling. The project will act in synergy with a system-biology group of Dr. Herbert Schiller, who deciphers with single-cell genomics techniques novel cell types as well as cell-cell communication circuits in the healthy and diseased lung. The student will face first-class supervision and mentorship by a team of internationally renowned experts, as well as outstanding training options within the framework of CPC Research School.

PhD position in Spatiotemporal analysis of altered cell-cell communication routes in lung disease (f/m/x) ¹⁰⁰⁴⁰¹

 full time

 Neuherberg near Munich

 Graduates

Your responsibilities

- The lung as a barrier organ is most vulnerable to infection and injury from environmental exposure to particles, chemicals, and infectious agents. Thus, respiratory diseases vastly contribute to a massive global health burden. According to the WHO lung disease currently causes one in six deaths globally. Today, highly sophisticated -omics techniques such as single-cell genomics produce highly-relevant data including the discovery of novel cell types within the lung and other organs. However, the spatial localization as well as functional interconnections of and between the cells are largely unknown.
- By means of 3D ex-vivo lung tissue derived from various fluorescent reporter mice together with live immunostainings, high-resolution 4D fluorescence confocal and light sheet microscopy, the project aims to study the dynamics and interactions between lung cells (stromal cells, epithelial cells, immune cells) as well as between lung cells and connective tissue, in disease events in real-time.
- Mouse disease models will include those for fibrosis, COPD, and COVID-19. In order to unveil molecular mechanisms this Ph.D. project will include the use of mouse knock-out models as well as the use of pharmacological inhibitors and state-of-the-art analysis tools like single-cell genomics.

Your qualification

- Candidates should have an MSc degree in biology or similar fields.
- Candidates should have a solid background in cell biology, as well as experience with state-of-the-art microscopy techniques like LSM, LSM, and 2P-microscopy.
- Working with mouse models is a prerequisite for this PhD project, thus previous experience with mouse work is an advantage.
- Applicants should have demonstrated outstanding performance through their undergraduate studies.
- Ability to work independently and as part of a team.
- We expect good communication skills, fluent in English oral and writing.
- Creativity and analytical thinking in combination with a strong passion for science and innovation is highly desirable.

What we offer you

Unique training opportunities - the student will be embedded in a structured PhD program connected with the two universities in Munich LMU & TUM

compatibility of private life & work

flexible working hours, flexitime, without core times

30 days vacation per year

in-house health management



a nursery directly at the campus

Elder Care & further consultation offers

company pension scheme

discounted job ticket (MVV and DB)

corporate benefits offer

Munich, with its numerous lakes and its vicinity to the Alps, is considered to be one of the cities with the best quality of life worldwide. With its first-class universities and research institutes it offers an innovative, well-equipped and scientifically stimulating environment

You will get a training and supervision in cutting edge technologies (single cell genomics, proteomics, computational biology) and will be a team member in Human Cell Atlas consortium working on the lung.

Remuneration and social benefits are based on the collective wage agreement for public-sector employees at federal level (EG 13 50% TV EntgO Bund). In addition, there is also the possibility of granting an allowance amounting to 15% if the necessary conditions are fulfilled. The position is (initially) limited to three years, but under certain circumstances an extension can be arranged.

To promote diversity, we welcome applications from talented people regardless of cultural background, nationality, ethnicity, gender and sexual identity, physical abilities, religion and age. Qualified applicants with physical disabilities will be given preference.

Curious?

If you have further questions, simply contact **Dr. Gerald Burgstaller**, gerald.burgstaller@helmholtz-muenchen.de, who will be happy to be of assistance.

Application documents (CV, list of publications, a letter of motivation, as well as names and phone numbers of potential referees) should be submitted **online** as soon as possible as a single PDF file.

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Deutsches Forschungszentrum für Gesundheit und Umwelt (GmbH)
Institut für Lungenbiologie
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Award for excellent gender equality policy for women and men. Helmholtz Zentrum München is particularly committed to promoting professional equality between women and men. It therefore aims to increase the proportion of the underrepresented sex in the respective field.



The Helmholtz Zentrum München is part of the Helmholtz Association, Germany's largest scientific organization. Altogether 40 000 people currently work in its 19 scientific-technical and biological-medical research centers. The Association's annual budget amounts to around 4.7 billion Euros.