

MD-PhD Position (100%)

As part of the *Exhalomics in Pediatric Asthma (EXPEDA)* program

The Department of Pulmonology at the University Children's Hospital Zurich is offering an MD-PhD position for the innovative project *Exhalomics in Pediatric Asthma (EXPEDA)*. The project is funded by the Swiss National Science Foundation and will be conducted at the Children's Hospital Zurich.

Start: upon agreement (Q2 2026)

Duration: 3–4 years (MD-PhD program)

Project Description

This project addresses one of the major challenges in children's lung health: finding better ways to diagnose asthma early in preschool-aged children. To achieve this, we aim to identify and validate the highly sensitive and specific composition of molecular components in exhaled breath—so-called “breath prints.”

We use innovative methods such as secondary electrospray ionization high-resolution mass spectrometry (SESI-HRMS) as well as an electronic nose. We have successfully identified hundreds of asthma-associated biomarkers (breath molecules). The goal of this project is to investigate the prognostic and diagnostic value of these biomarkers.

Our project is part of a larger interdisciplinary initiative aimed at combining advanced analytical methods—including high-resolution mass spectrometry and sensor technologies—with modern statistical approaches and machine learning techniques.

Responsibilities

- Contribute to the further development of remote breath analysis methodology
- Recruit patients and healthy controls
- Perform breath measurements in children
- Analyze breath samples using SESI-HRMS in the laboratory
- Participate in the MD-PhD program at UZH
- <https://www.med.uzh.ch/de/studium/doktoratsprogramme/md>

Profile

- University Master's degree in Medicine
- Good German skills (written and spoken) required; good English skills (written and spoken) preferred
- Enjoy working with children and their parents
- Interest in complex data analysis

Application

Please send your motivation letter, CV, and diplomas to:

PD Dr. Elias Seidl (via email: elias.seidl@kispi.uzh.ch) and to Prof. Dr. Alexander Moeller (via email: alexander.moeller@kispi.uzh.ch)

For any questions regarding the project and the position, you may contact PD Dr. Elias Seidl, Prof. Möller or our study coordinator Srdjan Micic:

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