

What is the project about:

Millions worldwide suffer from respiratory conditions like COPD and IPF, significantly affecting quality of life. Inhalation therapy is essential for delivering fast, targeted medication to diseased lung regions, but ensuring precise drug delivery remains a major challenge. Researchers at Helmholtz Munich have dedicated significant efforts to revolutionizing preclinical lung research and improving the precision of inhalation therapies.

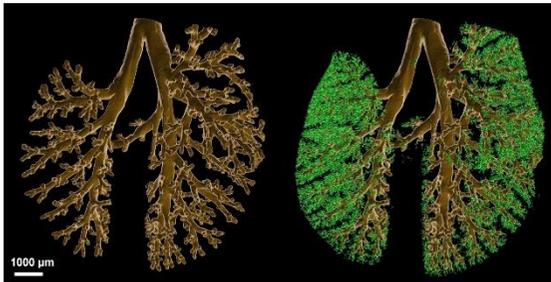


Figure 1: AI-assisted segmentation of **whole-murine lung airways (brown)** and **inhaled aerosols (green)**.

Requirements:

Background: A motivated student with a background in biology or a related field and an interest in advanced imaging and computational data analysis. **Working Style:** Comfortable working independently while maintaining regular communication with supervisors.

M.Sc. Position

Are you ready to join a research team at the forefront of drug delivery innovation using cutting-edge technologies? We are seeking a motivated MSc candidate to join us with an exciting project on **AI-driven imaging biology and drug delivery in lung health and disease**.

What you'll be working on:

Imaging Biology and Drug Delivery with AI

Pioneering 3D Lung Imaging

Develop/implement advanced imaging methods to detect the drugs/nano-carriers distribution and their interactions with single cells throughout the lungs.

Exploring 3D Spatial Lung Biology

Visualize cell-cell and cell-drug interactions during lung disease progression and drug treatment.

AI-driven Quantitative Analysis

Leverage state-of-the-art AI tools, including Convolutional Neural Networks (CNNs) for quantitative analysis of lung biology and drug efficacy.

More details in our recent publication. Yang et al. (2024), <https://doi.org/10.1038/s41467-024-54267-1>

Why this position stands out:

- **Explore unmet medical needs:** Gain valuable insights into the complexities of human diseases while exploring innovative strategies to advance inhalation therapies.
- **Innovative, multidisciplinary team:** Collaborate with experts in lung biology and aerosol delivery, pharmaceutical technology, and computational science.
- **Skill development in cutting-edge areas:** Acquire hands-on experience in multidisciplinary fields such as emerging imaging methods, inhalation therapies, and AI-driven quantitative biology.

If you're passionate about tackling real-world health challenges with innovative tools and making a meaningful impact on patient care both within and beyond academia, we want to hear from you! **Join us on this exciting journey to prompt drug delivery—apply today!**

Contact:

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