

Join our researchteam

We are looking for highly motivated and ambitious postdocs, PhD students, master students, and student research assistants. We offer a motivating environment and exciting projects.

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Projects

In our group we investigate the ***role of immune cells in regenerating diseased epithelial tissues***. We have shown that CD4+ T cells and ILCs regulate intestinal development in humans (e.g. Schreurs, et al. Immunity 2019; Möller, et al. Mucosal Immunol 2023)). Specifically, we focus on identifying the specific molecules that regulate immune mediated tissue regeneration in humans to utilize the power of immune cells in regenerative therapies to heal or replace damaged tissues. However, when these immune cells are dysfunctional they can contribute to inflammation such as IBD in children and adults (Baumdick, et al. Gastroenterology 2023; Zecher, et al. Gut 2023). Therefore, ***we need to understand the pathways that induce inflammation, damage tissues and impede the regenerative effects of immune cells***. In more recent studies we are now investigating the interactions between epithelial cells and immune cells in other organs, such as the kidney as well. To investigate the regulation of immune cells of tissue regeneration, we have pioneered ***3D autologous CD4+ T cells – intestinal organoid systems***. These models are undergoing continuous innovation and now include other organs such as the liver, kidney, 3D tissue models of viral infections (Jung, et al. Science Immunol 2021) and adapted to different immune cells such as NK cells or ILCs. Our group is a combination of wet-lab and dry-lab researchers with a broad range of backgrounds in life sciences, medicine, chemistry and computational biology. This allows us to develop cutting edge 3D tissue models, develop novel computational models, and perform translational studies of human diseases.

Please contact Madeleine Bunders if you are interested in these research questions and to join our team. Positions are available at a regular basis or if you wish we can support applications for scholarships. (The Alexander-von-Humboldt-Foundation, EMBO Long-Term Fellowships, The Human Frontier Science Program). We look forward to hear from you.