

## Masterthesis/ Bachelorthesis/ Internship

We are looking for a student (m/f) of natural sciences, e.g biology, immunology, biomedical engineering, or similar for a Masterthesis, Bachelorthesis and/or Internship.

### **Adherence of Macrophages to Cardiovascular Biomaterials**

The NMI develops biomaterial scaffolds from polymers and extracellular matrix components and investigates their ability to be applied as implants, human-based testsystems or drug delivery systems.

Immune cells have the ability to enhance wound healing and induce the formation of new tissue. Thus, the success or failure of an implant strongly depends on the inflammatory response that occurs after implantation. In this project, we are aiming at elucidating the inflammatory response of macrophages to electrospun biomaterials designed for cardiovascular tissue engineering. Your work will include:

- Isolation of peripheral blood mononuclear cells (PBMCs).
- Cell culture including macrophage stimulation and polarization.
- Fabrication of scaffolds by electrospinning.
- Culture of macrophages on scaffolds.
- Generation of a protocol to detach macrophages from scaffolds.
- Analysis methods such as flow cytometry, scanning electron microscopy and immune fluorescence and/or ELISA.

In our group you will get the chance to work in a highly interdisciplinary field that combines biology, chemistry and biomedical engineering and offers you the chance to gain insight into many different state-of-the-art techniques.

If you are motivated and interested in immunological research in the field of regenerative medicine and tissue engineering, and you want to be part of a young, innovative and enthusiastic team, please send your application to: [Svenja.Hinderer@uni-tuebingen.de](mailto:Svenja.Hinderer@uni-tuebingen.de)

**Dr.rer.nat Svenja Hinderer**

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