

## International Helmholtz Research School Translational Cardiovascular and Metabolic Medicine (TransCard)

### Basic information

**Keywords:** Cardiovascular & Metabolic Diseases | Translational Research | Cell Biology | Molecular Biology | Biochemistry | Genetics | Imaging | Pathomechanism | Development | Systems Biology | Systems Medicine

**Program director(s):** Prof. Dr. Michael Gotthardt & Dr Francesca Spagnoli

**Program coordinator:** Dr Inka Gotthardt (transcard [at] mdc-berlin.de; +49 30 9406 4258)

**Program weblink:** [www.mdc-berlin.de/transcard](http://www.mdc-berlin.de/transcard)

### Detailed program information

**Program summary description:** The International Helmholtz Research School 'Translational Cardiovascular and Metabolic Medicine' (TransCard) trains excellent young researchers at the interface of basic molecular, genetic, and clinical research with the goal to elucidate the molecular mechanisms causing cardiovascular and metabolic diseases and to transfer this knowledge from bench to bedside.

The program is a joint endeavor of the Max Delbrück Center for Molecular Medicine (MDC), the Charité - Universitätsmedizin Berlin, Humboldt-Universität zu Berlin, Freie Universität Berlin, and its international partners (Hubrecht Laboratory, Utrecht/The Netherlands; University of Arizona, Tucson/USA). TransCard offers a comprehensive and structured training program for talented doctoral students in a unique translational research environment with internationally renowned faculty, access to the expertise of the associated teaching hospitals, as well as high-end technology platforms. What makes TransCard unique is our goal to provide a stimulating environment and a curriculum that trains students at the interface of basic and clinical research for improved patient benefit and diversification to prepare students for careers in academics and beyond.

**Systems medicine and/or translational highlights:** The research areas covered by TransCard include cardiovascular and metabolic diseases, with a strong focus on understanding the underlying molecular mechanisms and pathomechanisms as a basis for improved therapy. This includes basic research utilizing model organisms, cellular systems, systems biology, and high throughput approaches as well as clinical research – preferably in combination. Several members of the TransCard faculty and students use high throughput approaches to understand and model cardiovascular and metabolic disease (in part affiliated with the Berlin Institute for Medical Systems Biology), with training and personal consultations available for analysis of omics type data and modeling. As part of the TransCard curriculum, we have created a 'clinical visits' program, which increases the awareness of students for the translational potential of their research. Students spend three days at Helios-Klinikum in Berlin-Buch and learn about diagnostics, clinical decision making, and therapy of cardiovascular disease (see “Scientific training” below for additional details).



**Primary funding source:** Helmholtz Association

**Program start date:** 02/2009

**Number of students recruited per year (estimated):** 10-12

**Number of program funded positions/places (excluding third party funding):** 11

**Duration of program:** 3-4 years

### **Scientific training**

**Lecture series: TransCard Lecture Series** – A weekly core lecture series covering the basics on concepts and methods of cardiovascular and metabolic biology as well as clinical topics. In addition we offer a corresponding **E-Learning** platform to revisit the educational material using SharePoint.

**Seminar series: TransCard Seminar Series** – A monthly seminar series that offers students the possibility to present and discuss their research projects with other students within the field. Presentations of biographies of important scientists, relevant techniques, or high-ranking publications with reference to own research projects. **Wollenberger Seminar** - This is a monthly seminar series, in which research groups of the Cardiovascular and Metabolic Diseases Research Program (CMD) present their most recent work. For additional information on lectures and seminars, including past schedules, please visit the MDC event database at [www.mdc-berlin.de/events](http://www.mdc-berlin.de/events).

**Practical courses:** Workshops on experimental or computational techniques offered by students or invited speakers.

**Clinical Visits Program:** In collaboration with PD Dr. Ralf Dechend from Charité - Universitätsmedizin Berlin and the Helios-Klinikum in Berlin-Buch, we have established a 'clinical visits' program that allows TransCard students to get first-hand insight into the clinical perspective of their research. During their visit, students learn about diagnostic and therapy of cardiovascular diseases, measure their own heart function and attend ward rounds, non-invasive diagnostics as well as live surgeries commonly used in cardiovascular medicine. The 'clinical visits' program thus provides a unique opportunity to literally move 'from bench to bedside'.

**Mentoring & supervision offered:** PhD students are supervised by a group leader and a PhD project committee consisting of at least two more senior scientists monitoring the progress of the research project. Annual PhD project committees consist of a written report and oral presentation of conducted research.

### **Additional features:**

**Collaborative lab visits:** TransCard supports students who would like to participate in methods workshops and courses in Germany or abroad that will advance their research project. Likewise, students who work in close collaboration with other research groups outside of Berlin can apply for fellowships to support their travel and stay at a host lab.



**Soft skills training:** Training in professional & career development as well as language courses are organized on campus and externally with the Helmholtz Association and international partners.

**PhD Retreats:** The annual PhD retreat gives TransCard students a unique opportunity to present their work in an informal setting, and to network within the TransCard community. Students also get the chance to contribute to the program of the retreat and invite external speakers from Germany or abroad.

**Summer School:** The joint Summer School of TransCard and the Aviesan (Alliance nationale pour les sciences de la vie et de la santé) / INSERM (Institut National de la Santé et de la Recherche Médicale), and the corresponding university hospitals responds to the need of training young scientists to follow a multidisciplinary approach and perspective in their research on cardiovascular and metabolic diseases. The international summer school provides intensive training on a fundamental interrelated topics at the frontiers of research on cardiovascular and metabolic diseases - from systems biology in basic science to clinical research.

**Support for conference visits:** 3 Travel Grants (à 1000 €), 1 Collaborative Lab Visit Grant (à 2000 €)

**Clinical visits:** 2.5 days

**Stipends/grants funded within your program:** PhD student fellowships, support with application for external funds.