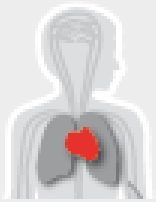
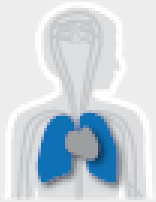
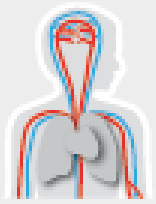


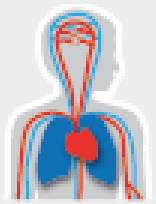
Heart Failure & Arrhythmias



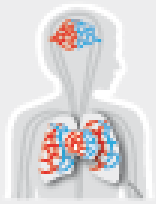
Pulmonary Hypertension & Thrombosis



Atherosclerosis & Ischemic Syndromes



Diabetes & Metabolism



Microcirculation

# Focus of research group (I)

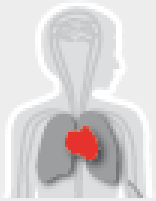
**Name PI**: Jaap D. van Buul
**Department, UMC**: Molecular Cell Biology lab at Sanquin Research. Landsteiner Laboratory Dept at AMC.
**Size of research group**: 4 PhD students, 2 Post-docs, 1 Technician, 2 Undergraduate students

**Current mission, vision and aims:**

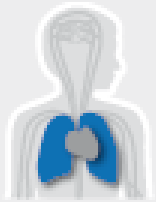
→ **Mission:** Understanding the molecular mechanism that regulate leukocyte transendothelial migration.

→ **Vision:** The endothelium provides a platform for leukocytes to adhere to and transmigrate. Use the endothelium to steer leukocyte exit

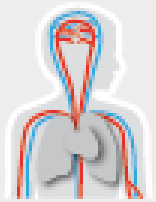
→ **Aim:** Determining the molecular ques in the endothelium that define the local transmigration “hot-spot”.



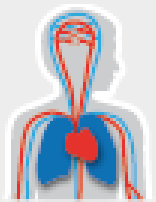
Heart Failure & Arrhythmias



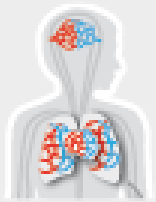
Pulmonary Hypertension & Thrombosis



Atherosclerosis & Ischemic Syndromes



Diabetes & Metabolism



Microcirculation

# Focus of research group (II)

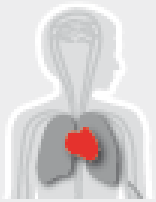
**Current expertise:**

Molecular mechanisms of leukocyte transendothelial migration

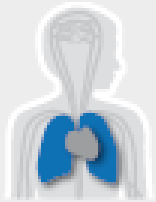
→ In vitro TEM-under-flow assays.
→ Combined Permeability and TEM assays.
→ Permeability / Electrical Resistance measurements.
→ Functional Imaging: FRET / FRAP / Photo-activatable probes / Light-induced dimerization probes.

**Current funding:**

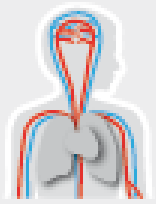
→ Landsteiner Foundation for Blood transfusion (LSBR)
→ ALW-NWO open.
→ Uitzicht: National Foundation for the Blind and Visually Impaired.
→ Product and Progress Development Project grant; Ministry of Health, Welfare and Sport.
→ Rembrandt Institute for Cardiovascular Research.
→ Bayer Drugs for Target grant.



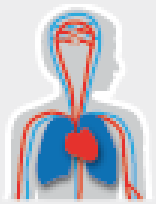
Heart Failure & Arrhythmias



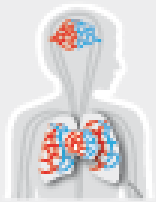
Pulmonary Hypertension & Thrombosis



Atherosclerosis & Ischemic Syndromes



Diabetes & Metabolism



Microcirculation

# Future plans

**Short term (1-2 year) plan**

Plan: Central aim: **How does the endothelium orchestrate local leukocyte exit?**

Necessary infrastructure: Microscopy tools (fast imaging/high resolution), in vivo disease models to validate our claim.

**Long term (>2 year) plan**

Plan: **Triggering leukocyte extravasation on demand using photodynamic therapy.**

Necessary infrastructure: Microscopy tools (fast imaging/high resolution), in vivo disease/inflammation models to validate our claim.

**Collaboration in ACS:** Microscopy facility/ Group Huveneers/ De Waard/Stroes (AMC) / Group Hordijk/Boon/Eringa (VUMC).