Dear Colleagues,

The advanced nanotechnologies based on spectroscopic and imaging techniques applied in cardiovascular research are shown to provide new information on the mechanisms of cardiovascular diseases.

The symposium on "Biological Imaging and Sensing" aims to strengthen the networking within the DZHK community working in clinical and preclinical cardiovascular research. The symposium will focus on relevant biophysical and nanotechnological approaches which provide details of structural and dynamic properties of biological systems.

An excellent platform to explore research across different scientific areas within DZHK, the symposium will cover talks by expert and young researchers in the areas of

- **stem cells and heart tissue engineering,**
- **intra-vital microscopy,**
- **cardiovascular magnetic resonance imaging,**
- **high resolution molecular imaging**
- **spectroscopic techniques**.

We are looking forward to welcome you in Greifswald.

Prof. Dr. Stephan B. Felix
Prof. Dr. Marcus Dörr
Dr. Mihaela Delcea
Dr. Ricardo Pires

Thursday, 01.10.2015

12:00 Registration & Lunch Snack

13:00 **Stephan B. Felix (Greifswald)**
Introduction

Session 1
Chair: Stephan B. Felix

13:10 **Mihaela Delcea (Greifswald)**
Nanotechnology in Cardiovascular Research

13:40 **Viacheslav Nikolaev (Hamburg)**
Fluorescence resonance energy transfer (FRET) and scanning ion conductance microscopy (SICM) in cardiovascular research

14:10 **Stefan Luther (Göttingen)**
Fluorescence imaging of membrane voltage, intra-cellular calcium, and mechanical contraction in cardiac tissue

14:40 Coffee Break

Session 2
Chair: Mihaela Delcea

15:10 **Samuel Tobias Sossalla (Göttingen)**
Cellular electrophysiology and electromechanical coupling in human cardiac pathology

15:40 **Ricardo Pires (Greifswald)**
Cellular mechanics and dynamics with atomic force microscopy

16:10 **Andrea Welling (München)**
Whole-cell patch-clamp as a key technique in individualized cardiac medicine

Thursday, 01.10.2015

16:40 Coffee Break

Session 3
Chair: Karlhans Endlich

17:10 **Cor de Wit (Lübeck)**
Intravital microscopy in the skeletal muscle of mice

17:40 **Florian von Knobelsdorff (Berlin)**
Magnetic resonance imaging in aortic valve disease: New insights from new techniques

18:10 **Ulrich Pohl/Steffen Dietzel (München)**
Third harmonic generation microscopy of the microcirculation

18:40 **Discussion**

19:10 Dinner

Venue:

University Medicine Greifswald
"Hörsaal Nord"
Ferdinand-Sauerbruch-Str.
17475 Greifswald

Mandatory registration until 24.09.2015 at:
https://intern.dzhk.de/events/detail/biological-imaging-and-sensing/

DZHK-PI, DZHK-scientists and Young-DZHK members can reimburse their travel costs by the DZHK main office in Berlin.

Friday, 02.10.2015

Session 4
Chair: Wolfram Zimmermann

08:00 **Karlhans Endlich (Greifswald)**
Imaging glomerular capillaries with two-photon and structured illumination microscopy

08:30 **Steffen Massberg (München)**
Intravital two-photon imaging of hematopoietic cells

09:00 **Ralf Brandes (Frankfurt M.)**
Imaging mouse vasculature by microCT and light sheet microscopy

09:30 Coffee Break

Session 5
Chair: Marcus Dörr

10:00 **Markus Schwaiger (München)**
Myocardial inflammation after ischemic injury

10:30 **Jeanette Schulz-Menger (Berlin)**
Myocardial tissue differentiation in non-coronary disease applying cardiovascular magnetic resonance imaging

11:00 **Raghavendra Palankar (Greifswald)**
Mechanobiology of human induced pluripotent stem cell-derived cardiomyocytes on engineered surfaces

11:30 Lunch

Trains to Berlin or Hamburg after the symposium:

Greifswald Main Station
- **14:37**
- **15:21**
- **16:37**

Friday, 02.10.2015

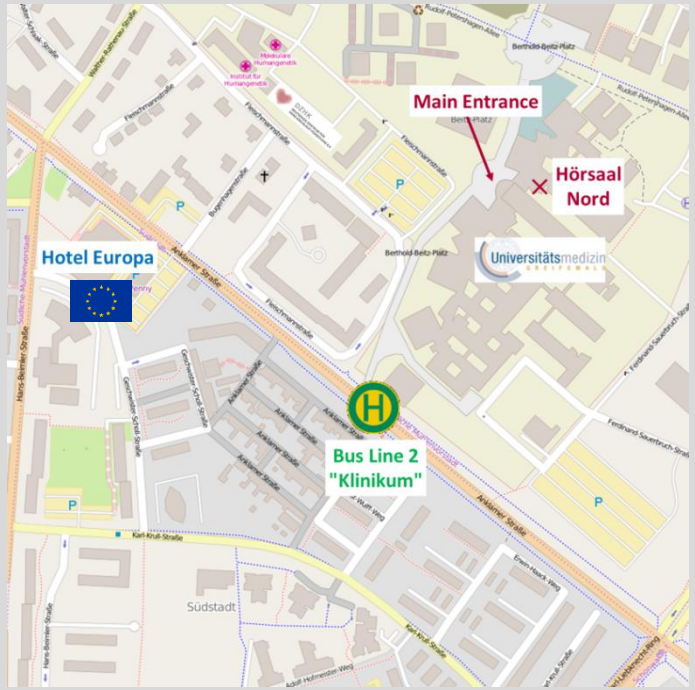
Session 6
Chair: Werner Weitschies

12:30 **Wolfram Zimmermann (Göttingen)**
Visualization of engineered heart muscle in vivo

13:00 **Arne Hansen (Hamburg)**
iPSC-derived engineered heart tissue – a versatile in-vitro tool

13:30 **Stephan B. Felix (Greifswald)**
Closing Remarks

13:45 Farewell Coffee



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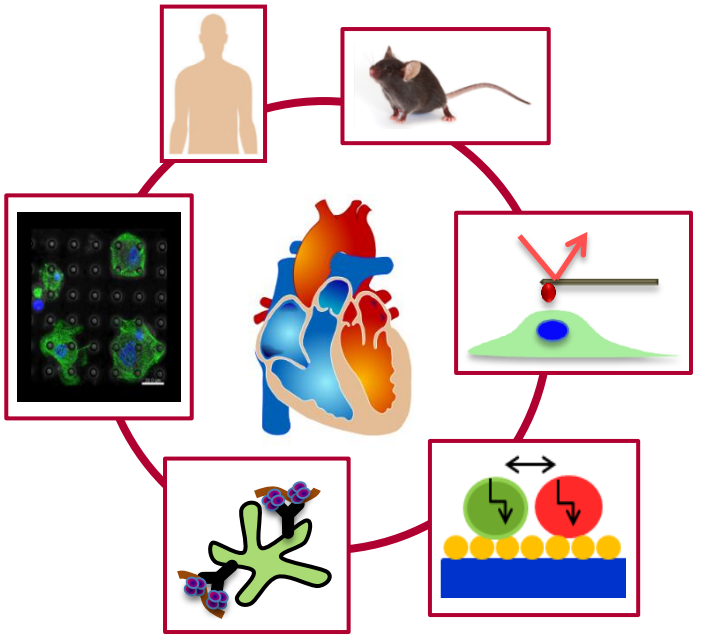
DZHK
DEUTSCHES ZENTRUM FÜR HERZ-KREISLAUF-FORSCHUNG E.V.



Registration deadline extended to 24.09.2015

ERNST MORITZ ARNDT UNIVERSITÄT GREIFSWALD
Universitätsmedizin GREIFSWALD
HIKE

DZHK Symposium

Biological Imaging and Sensing

01. - 02. October 2015, Greifswald