## Registration

❑ Mr.
❑ Mrs.

*Acad. title*

*First name*

*Last name*

*Address, Street & Nmb.*

*Zip code* *Location*

*Phone* *Fax*

*E-Mail*

### Participation fee for symposium

❑ Regular – 250 EURO ❑ Students – 150 EURO

### Festival Evening

❑ Yes, I will attend Additional persons 30 EURO per person

*Date, Signature*

Please register online www.bonehealing.de,
by fax to +49308851029 or by letter

Registration Bone Regeneration
c/o P&R Kongresse GmbH
Bleibtreustraße 12 A
10623 Berlin
GERMANY

## Information

### Date

November 19th to 20th 2009

### Festival Evening, Thursday, November 19th 2009

Internationaler Club im Auswärtigen Amt GmbH
Kurstraße 36, 10117 Berlin

### Location

Centrum für Sportwissenschaft
und Sportmedizin Berlin (CSSB)
Philippstraße 13, Haus 11, 10099 Berlin
*No parking place available.*

### Scientific organization

Prof. Dr. G. N. Duda
Julius Wolff Institut and Center for Musculoskeletal Surgery,
Charité – Universitätsmedizin Berlin

Prof. Dr. S. Mundlos
Institute for Medical Genetics, Charité – Universitätsmedizin Berlin and Max Planck Institute for Molecular Genetics
Augustenburger Platz 1, 13353 Berlin
Phone +49 30 45055-9048
Fax +49 30 45055-9969

### Abstracts

Abstracts for posters and presentations are now being accepted. The deadline for submission of abstracts is September 11st 2009. The best quality abstract submissions of no more than 300 words will be accepted for the sessions presented above. Please find further details, including the submission form on the web site at www.bonehealing.de/abstracts.

### Prizes

The best student and best regular rated abstracts will receive awards including a free registration to the event.

### Registration, organization

P & R Kongresse GmbH
Nicole Ennulat, Thomas Ruttkowski
Bleibtreustrasse 12A
10623 Berlin
Phone +4930 8851027, Fax +4930 8851029
Email info@bonehealing.de

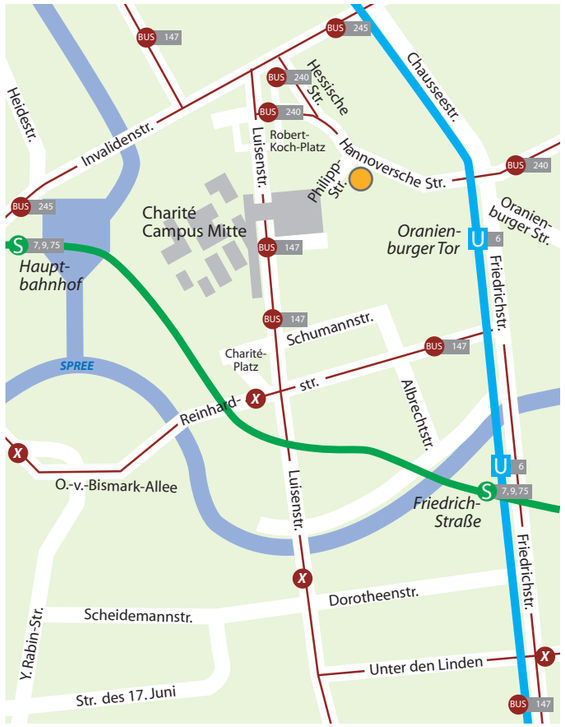
### Tourist Information

www.berlin.de
www.berlin-tourist-information.de

### Certification

The certification of the symposium is required by the „Berliner Ärztekammer".

## Berlin Map




Symposium 2009

# Biomechanics and Biology of Bone Regeneration

## From Functional Assessment to Guided Tissue Formation

November 19th–20th 2009 in Berlin

SFB 760
Musculoskeletal
Regeneration

Deutsche Forschungsgemeinschaft DFG

SFB 760 Musculoskeletal Regeneration

CHARITÉ

## Biomechanics and Biology of Bone Regeneration

The symposium will allow highlighting the state of the art in the research field of bone regeneration. We will focus on new developments regarding the molecular basis for bone regeneration, the understanding of the structural constrains of native and artificial tissue (biomaterials) and the clinical implications and experimental models of bone regeneration. We will offer a platform for clinicians and researchers to share expertises and experiences on latest developments in this field.

## Thursday – November 19th 2009

**Morning**

**Welcome and Introduction**
*G. Duda (Germany)*

**Clinical background and challenges in orthopaedic trauma surgery**
*D. Marsh (UK)*

**Learning from endogenous bone healing for guided tissue regeneration**

Bone healing under compromised conditions
*A. Ignatius (Germany)*

Insight into the patho-physiology of compromised bone healing
*J. Lienau (Germany)*

Significance of vascularity for bone defect healing
*R. Guldberg (USA)*

Early phase of bone healing – potency and potential
*H. Schell (Germany)*

**Free Presentations**

**Musculoskeletal interactions – from biomechanics to mechanobiology**

From function to joint loading in the elderly
*A. Arampatzis (Germany)*

Loads in human joints
*G. Bergmann (Germany)*

Musculoskeletal loading conditions in regeneration
*M. Heller (Germany)*

Mathematical modelling in regenerative therapy
*O. Sander (Germany)*

Mechano-biological constrains to bone healing
*G. Duda (Germany)*

**Lunch**

**Afternoon**

**Native bone tissue structure and properties during healing**

Modelling of cell seeded bone tissue engineered scaffolds
*P. Prendergast (Ireland)*

Mechanobiological simulation of bone healing
*R. Weinkamer (Germany)*

Tissue mineralization in bone development, maintenance, disease and repair
*P. Roschger (Austria)*

Micromechanical and ultrastructural properties of bone and callus tissue
*P. Fratzl (Germany)*

**Free Presentations**

**Biomimetic materials for bone regeneration**

Bioreactor-based manufacture of osteogenetic grafts
*I. Martin (Switzerland)*

Cellular degradation of biomaterials
*R. Schnettler (Germany)*

In vivo engineering of bone
*M. Stevens (UK)*

Biomimetic scaffolds supporting bone regeneration in critical defects
*A. Lendlein (Germany)*

Characterization and treatment of a rat tibial non-union
*B. Wildemann (Germany)*

**from 7:00 pm** **Festival Evening (International Club)**

## Friday – November 20th 2009

**Morning**

**What inter- and what intra-cellular signaling drives healing?**

Mechanotransduction in bone remodelling
*J. Rubin (USA)*

Molecular mechanisms of fracture repair
*M. Hadjiargyrou (USA)*

Interaction of BMPs and their antagonists during bone regeneration
*S. Mundlos (Germany)*

Molecular mechanism of BMP signaling during bone regeneration
*P. Knaus (Germany)*

**Free Presentations**

**Importance of cellular interactions for bone regeneration**

The role of MSC biology in regeneration
*F. Jakob (Germany)*

The importance of CA Homeostasis
*M. Amling (Germany)*

Stimulation of bone repair by magnetic nanoparticles
*A. El Haj (UK)*

Stem cells and aging
*J. Adjaye (Germany)*

Limitation in musculoskeletal regeneration using stem cells
*P. Strube (Germany)*

**Farewell Lunch**

## Local Organizing Committee

***Dipl.-Ing. F. H. Bieler, Charité Berlin, Germany***
***Prof. Dr. G. N. Duda, Charité Berlin, Germany***
***Prof. Dr. N. P. Haas, Charité Berlin, Germany***
***Dr. J. Lienau, Charité Berlin, Germany***
***Prof. Dr. S. Mundlos, Max Planck Institute Berlin, Germany***

## Invited Faculty

***Dr. J. Adjaye, Max-Planck Institute Berlin, Germany***
***Prof. Dr. M. Amling, University Medical Center Hamburg, Germany***
***Prof. Dr. A. Arampatzis, Humboldt-Universität Berlin, Germany***
***PD Dr. H. J. Bail, Charité Berlin, Germany***
***Prof. Dr. G. Bergmann, Charité Berlin, Germany***
***Prof. Dr. A. El Haj, Keele University, Staffordshire, United Kingdom***
***Prof. Dr. P. Fratzl, Max-Planck-Institut Potsdam, Germany***
***Prof. Dr. R. E. Guldberg, Georgia Institute of Technology, Atlanta, USA***
***Prof. Dr. M. Hadjiargyrou, State University of New York, USA***
***Dr. M. Heller, Charité Berlin, Germany***
***Prof. Dr. A. Ignatius, Universitätsklinikum Ulm, Germany***
***Prof. Dr. F. Jakob, Universität Würzburg, Germany***
***Prof. Dr. P. Knaus, FU Biochemistry, Berlin, Germany***
***Prof. Dr. A. Lendlein, GKSS Teltow, Germany***
***Prof. Dr. D. Marsh, University College London, London, UK***
***Prof. Dr. I. Martin, Universitätsspital Basel, Switzerland***
***Prof. Dr. C. Perka, Charité Berlin, Germany***
***Prof. Dr. P. Prendergast, Trinity College Dublin, Ireland***
***Prof. Dr. P. Roschger, Unfallkrankenhaus Wien, Austria***
***Prof. Dr. J. Rubin, University of North Carolina, USA***
***Dr. O. Sander, Freie Universität Berlin, Berlin, Germany***
***Dr. H. Schell, Charité Berlin, Germany***
***PD Dr. Gerhard Schmidmaier, Charité Berlin, Germany***
***Prof. Dr. R. Schnettler, Universitätsklinikum Giessen, Germany***
***Prof. Dr. M. Stevens, Imperial College London, UK***
***Dr. R. Weinkamer, Max-Planck Institute Potsdam, Germany***
***PD Dr. B. Wildemann, Charité Berlin, Germany***