#### Area Map





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## GRIBOI 2003

Groupe de Recherche Interdisciplinaire sur les Biomateriaux Osteoarticulaires Injectables

> 13<sup>th</sup> Interdisciplinary Research Conference on Biomaterials

## **Final Program**

## March 14<sup>th</sup>-15<sup>th</sup>, 2003 GRIBOI 2003

Conference Secretariat Stephen M. Belkoff, PhD Department of Orthopaedic Surgery Johns Hopkins University-Bayview Medical Center 4940 Eastern Avenue, A674 Baltimore, MD 21224 USA Fax: +1 410.550.2899 *Email: sbelkoff@jhmi.edu* Web: www.jhbmc.jhu.edu/griboi03

#### March 14th

08:00 Registration

08:30 Welcome address

## **Cement Properties I**

Chairman:

*09:00* Influence Of Magnesium On The Working Characteristics Of Brushite Cements

S. Rousseau, M. Buehler, L. Jordi, J. Lemaître – Laboratoire de Technologie des Poudres, EPFL, Lausanne, Switzerland

#### 09:15 Feasibility Of A New Dual-Paste Presentation Of Injectable Brushite Cements

D. Brendlen, C. Pittet, J. Lemaître - *Laboratoire de Technologie des Poudres, EPFL, Lausanne, Switzerland* 

#### *09:30* Evaluation Of An Injectable Composite Bone Cement With Engineered Micro-Architecture

Wettergreen, MA, Liebschner, MAK – Dept. of Bioengineering, Rice University, Houston, Texas USA

# *09:45* Design Of Three-Dimensional Composite Scaffold With Varied Engineered Micro-Architecture

Wettergreen, MA, Liebschner, MAK – Dept. of Bioengineering, Rice University, Houston, Texas USA

- 10:00 Break
- 10:30 Key Note Lecture

Calcium phosphate-based resorbable bone substitutes J. Lemaître

## **Cement Properties II**

#### Chairman:

11:00 New Hydraulic Cements Based On a-Tricalcium Phosphate – Calcium Sulfate Dihydrate Mixtures

M. Bohner, H. Schmid – Dr h.c. Robert Mathys Foundation, Bischmattstrasse, Switzerland

#### 11:15 Optimization Of Bone Cement Properties In Vertebral Reinforcement

Sun K. Liebschner, MAK – Dept. of Bioengineering, Rice University, Houston, Texas USA

#### 11:30 Performances On Magnesium Phosphate Bone Cement

Wei Gai, Changsheng Liu – Institute of Biomaterial of ECUST, Shanghai, China

#### 11:45 In Vivo Behavior Of A New Biphasic Brushite Cement

A. Oberle<sup>1,</sup> F. Theiss<sup>1</sup>, I. Boecken<sup>2,</sup> M. Bohner<sup>3</sup>, C. Frei<sup>4</sup>, J. Auer<sup>1</sup>,

B. Von Rechenberg <sup>1</sup> – <sup>1</sup>MSRU, University of Zurich, Switzerland; <sup>2</sup> Mathys Medical Ltd, Bettlach, Switzerland; <sup>3</sup> RMS Foundation, Bettlach, Switzerland; <sup>4</sup> Stratec Medical, Oberdorf, Switzerland

12:00 Lunch

## **Cement Properties III**

Chairman: J. Lemaître

# 14:00 Mechanical Adaptation Of PMMA For Augmentation Of Osteoporotic Bone

Adrian Bisig<sup>1</sup>, Marc Bohner<sup>2</sup>, Paul Heini<sup>3</sup>, Erich Schneider<sup>1</sup>– AO <sup>1</sup>Research Institute, Clavadelerstrasse, Switzerland; <sup>2</sup>Robert Mathys Foundation, Bettlach, Switzerland; <sup>3</sup>Orthopaedic Surgery, University of Berne, Inselspital Berne, Switzerland

#### 14:15 An Investigation Of Calcined Bone And b-TCP As Stem Cell Scaffolds In Bone Regeneration

Dai Kerong, Zhou Jian – Ninth People's Hospital, Shanghai Second Medical University, Shanghai PRC

# 14:30 Relationship between steady and dynamic rheological measurement of Injectable Calcium Phosphate Cement

Huifang Shao, Changsheng Liu, Yue Huang, Tunan Fang, Kang Sun

14:45 Break

## Material Injection and Infiltration I

Chairman: Dr Mason

#### 15:15 A Model To Predict The Ability Of Calcium Phosphate Cement Formulations To Infiltrate Cancellous Bone

Brian Edwards, Paul Higham – Stryker Howmedica Osteonics, Advanced Technology Group, Mahwah, New Jersey, USA 15:30 Drop In Pressure At Injection And Infiltration In Vertebroplasty

G. Baroud<sup>1</sup>, P. Heini<sup>2</sup>, M. Bohner<sup>3</sup>, S. Ferguson<sup>2</sup>, T. Steffen<sup>1</sup>

<sup>1</sup>Orthopaedic Research Laboratory, McGill University, Montreal, Canada; <sup>2</sup>M. E. Müller Institute for Biomechanics, University of Berne, Berne Switzerland; <sup>3</sup>Dr h.c. Robert Mathys Foundation, Bettlach, Switzerland

#### 15:45 Ex Vivo Measurement of Intravertebral Pressure During Vertebroplasty

S. Tomita, S. Molloy, M Abe, S.M. Belkoff

Johns Hopkins University-Bayview Medical Center, Baltimore, MD, USA

#### 16:00 GRIBOI General Council (Business Meeting)

17:00 CLOSE

## Saturday 15th March Cement Injection and Infiltration II

Chairman: Dr Hardouin

#### *9:00* Experimental And Theoretical Examinations Of Cement Infiltration In Osteoporotic Trabecular Bone

G. Baroud<sup>1</sup>, M. Bohner<sup>2</sup>, T. Steffen<sup>1</sup> – <sup>1</sup>Orthopaedic Research Laboratory, McGill University, Montreal, Canada; <sup>2</sup>Dr h.c. Robert Mathys Foundation, Bettlach, Switzerland

#### 9:15 Extravasation Risk Factors In Bone Augmentation

M. Bohner<sup>1</sup>, G. Bigolin<sup>1</sup>, B. Gasser<sup>1</sup>, G. Baroud<sup>2</sup>, P. Heini<sup>3</sup> - <sup>1</sup> Dr h. c. Robert Mathys Foundation, Bettlach, Switzerland; <sup>2</sup> Orthopeadic Research Laboratory, McGill University, Royal Victoria Hospital, Montreal, Canada; <sup>3</sup> Department of Orthopaedic Surgery, Inselspital, University of Berne, Berne, Switzerland

#### 9:30 Experimental Results To Assess The Relevance Of A Theoretical Model Describing The Injectability Of Powder – Liquid Mixtures

M. Bohner<sup>1</sup>, G. Baroud<sup>2</sup> - <sup>1</sup>Robert Mathys Foundation, Bettlach, Switzerland; <sup>2</sup>Orthopeadic Research Laboratory, McGill University, Royal Victoria Hospital, Montreal, Canada

#### 9:45 Effect Of Bone Marrow Removal On The Infiltration Of Spinal Cancellous Bone

B. Jim, G. Baroud - Orthopeadic Research Laboratory, McGill University, Royal Victoria Hospital, Montreal, Canada

10:00 Break and exhibition

11:00 Key Note Lecture:

Clinical Complications and Technical Challenges in Vertebroplasty

Dr. Mathis

### **Cement Injection and Infiltration III**

Chairman: Dr Hardovin & Dr Mason

# *11:30* The Effect of Cement Composition and Time on Clinical Injection Force

L. Riley III, E. Song, S.M. Belkoff

Johns Hopkins University-Bayview Medical Center, Baltimore, MD, USA

- *11:45* Injectable rhBMP-2 delivery systems for osteoporosis *Hyun Kim*
- 12:00 Lunch

## Cement in Clinical Practice I

#### Chairman: Dr Mathis

13:30 Percutaneous Vertebroplasty With A New, Biocompatible Composite

> H. Deramond<sup>1</sup>, J. Palussière<sup>2</sup>, L. Haazen<sup>3</sup> - <sup>1</sup>Hôpital Nord, Amien, France; <sup>2</sup>Instit. Bergonie, Bordeaux, France; <sup>3</sup>Orthovita

#### 13:45 Clinical Interest Of Three-Dimensional Imaging On A Vascular C-Arm For Percutaneous Vertebroplasty Procedures

H. Deramond1, F. G. Barral2, Y, Trousset3, C. Riddell3, K. Benali3 – <sup>1</sup> Service de Radiology, CHU Amiens Nord; <sup>2</sup> Dept. of Radiology, CHU Saint-Etienne; <sup>3</sup> GE Medical Systems

#### 14:00 In Vitro Study On The Reinforcement Of The Proximal Femur With Cortoss Bone Cement

Heini, P. F., Bechmann, J., Ferguson, S. J. – Dept. for Orthopaedic Surgery and M. E. Müller Instit. for Biomechanics, University of Berne, Berne, Switzerland Butscher, A., Gasser, B. – Robert Mathys Foundation, Bettlach, Switzerland

14:15 Break

## Cement in Clinical Practice II

Chairman: Dr Deramond

#### 14:45 Experience With Kyphoplasty In The Treatment Of Osteoporotic Fractures – Focus On The Potential Of Fracture Reduction

Paul F. Heini, T. Franz, U. Berlemann, R. Orler – Dept. for Orthopaedic Surgery, University of Berne, Berne, Switzerland

15:00 Vertebroplasty – The Value Of Prophylactic Augmentation

> Paul F. Heini – Dept. for Orthopaedic Surgery, University of Berne, Berne, Switzerland

#### 15:15 Effects Of Pre-Cooling And Pre-Heating Procedures On Bone Cement Polymerization In Cemented Hip Replacements

Chaodi Li, James Mason – Dept. of Mechanical Engineering, University of Notre Dame, IN

15:30 CLOSE

18:00 Cocktail Hour

#### 19:00 Dinner with the Blue Grass Band Venue: Admiral Fell Inn Fells Point

Baltimore

The 13<sup>th</sup> GRIBOI meeting is organised with the support of: Johns Hopkins Bayview Stryker-Howmedica-Osteonics

The 13<sup>th</sup> GRIBOI meeting is endorsed by: Biomat.net

### **Registration Fee:**

Before February 15, 2003: \$200 US (graduate students \$100 US) After February 15, 2003: \$250 US (graduate students \$150 US)

#### Conference Dinner: \$50 This includes live entertainment from "Jericho Bridge" a Blue Grass band popular in the Baltimore area. Check out their sound at http://www.jerichobridge.com/

Fee covers registration to the meeting, a copy of the proceedings, lunches, and coffee breaks.

Each student must include a letter from his/her academic advisor confirming his/her student status.

#### Payment

Check or money order made payable to "GRIBOI 2003". Please pay in US Dollars only.

Payment at the time of the conference may be made in cash or check. No credit cards can be accepted.

#### **Travel:**

Baltimore Washington International Airport is just 15 minutes from Baltimore and is very convenient to use. However, when shopping for competative airfares, don't forget to consider flying into Dulles Airport or Philadelphia. These airports often have more extensive international schedules, but will require a connection to Baltimore via plane, bus, train or rental car. Certainly BWI is most convenient.

## Hotel Reservation Form The Admiral Fell Inn

## 13<sup>th</sup> Interdisciplinary Research Conference on Biomaterials

## Please book your room before February 11<sup>th</sup>, 2003!

Mr., Ms, Dr, Prof:
First Name:
Last Name:
Position:
Address:
Postal Code:City
Country:
Phone:
Fax:
Email:

Arrival Date:	Departure Date:
Single room (\$139)	Double room (\$159)

If Double room: King bed or 2 double beds (circle one)

Smoking or Nonsmoking (circle one) Credit Card: Visa () Mastercard () Other () Credit Card Number: Expiration Date:

Fax this form to: The Admiral Fell Inn Phone: 410.522.7380 Fax: 410.522.0707

#### **Registration Form**

### 13<sup>th</sup> Interdisciplinary Research Conference on Biomaterials

March 14-15, 2003, Baltimore, Maryland, USA Mr./ Ms./Dr./Prof: ..... First Name: Family Name:.... Position: Address:.... ..... City:.....State..... Postal/zip Code:.... Country:.... Phone:.... Fax: Email:.... • I will attend the 13<sup>th</sup> GRIBOI Conference Dinner Signature:

Please mail this form and your registration check to the conference secretariat by February 15<sup>th</sup>.