



Sponsored by  
Albert Einstein College of Medicine  
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Arnold and Madaleine Penner

# 3rd Annual Musculoskeletal Repair and Regeneration Symposium

Thursday, October 2, 2014

Presented by:  
Musculoskeletal and Orthopaedic  
Research Laboratories and  
Department of Orthopaedic  
Surgery at Einstein College of  
Medicine and Montefiore  
Medical Center

Program Director:  
Hui (Herb) B. Sun, PhD  
University Chairman:  
Neil J. Cobelli, MD



Albert Einstein College of Medicine  
Michael F. Price Center and Harold  
and Muriel Block Research Pavilion  
1301 Morris Park Avenue  
Bronx, NY 10461



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# 3rd Annual Musculoskeletal Repair and Regeneration Symposium

THURSDAY, OCTOBER 2, 2014

## Symposium Mission

The Albert Einstein College of Medicine Musculoskeletal Repair and Regeneration Symposium seeks to expand the knowledge base within the field, and to foster inspiration, collaboration and networking between researchers throughout the region. This annual meeting will emphasize recent advances in translational research in three areas:

- Mechanisms and treatments for musculoskeletal disorders, cancer and diseases
- Tissue remodeling and interactions in musculoskeletal and other systems
- Stem cell, tissue repair and regeneration

## HIGHLIGHTS FOR 3RD ANNUAL SYMPOSIUM

World class scientists, including the keynote and plenary speakers, will share their viewpoints and their most exciting up to date translational research in the selected key areas.

**Rising Stars**, a new session presented by faculty members with recent new initiatives.

Presentations by faculty members new to the Symposium from Brown University, University of Pennsylvania, Rutgers New Jersey Medical School, and Yale University.

## Symposium Location and Date

Thursday, October 2, 2014

Albert Einstein College of Medicine, Michael F. Price Center and Harold and Muriel Block Research Pavilion, 1301 Morris Park Avenue, Bronx, NY 10461.

Directions: [www.einstein.yu.edu/visitors/](http://www.einstein.yu.edu/visitors/)

## Registration

Deadline: September 17, 2014, the registration fee is \$50.

After September 17, 2014 registration fee is \$75.00

Registration includes continental breakfast, lunch, and reception/dinner.

Register online at: [www.mecme.org](http://www.mecme.org)

## Who Should Attend

Basic scientists, clinical investigators and clinicians with interests in physiology, cell/molecular biology, biomechanics, pathology, genetics, as well as other areas that relate to musculoskeletal disease, cancer, tissue repair and regeneration.

## Statement of Need

Damage to skeletal tissues is a major cause of morbidity, pain, and increased mortality. In addition, it increases the rate of mortality in other clinical diseases such as diabetes and cardiovascular disorders. The innate repair capacities are limited for articular cartilage, tendon/ligament, and extensive bone defects. Moreover, current treatments for the repair of injured skeletal tissue and pain management are not sufficient to restore the functionality of the original tissue. These daunting challenges present a desperate need for a better understanding of musculoskeletal biology and emphasize the importance of discovering novel repair, regeneration and healing strategies that can be translated to clinical use.

## Activity Goals

This program will address current issues in musculoskeletal repair and regeneration, diseases and cancer treatment. Discussions will focus on up-to-date laboratory discoveries and the potential impact of these findings on patient treatment and management in the future.

## Learning Objectives

- Examine the impact of new discoveries on the homeostasis and repair of musculoskeletal tissues.
- Discuss the potential role of stem cells in musculoskeletal repair and regeneration.
- Assess a variety of treatment options for musculoskeletal diseases, injuries, cancer, and pain management.

## Accreditation

Albert Einstein College of Medicine of Yeshiva University is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. Albert Einstein College of Medicine of Yeshiva University designates this live activity for a maximum of **8.5 AMA PRA Category 1 Credits™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

## Special Needs (ADA)

Albert Einstein College of Medicine of Yeshiva University and Montefiore Medical Center fully complies with the legal requirements of the Americans with Disabilities Act. If any participant is in need of special accommodations, submit a written request at least two weeks prior to the activity to:

Center for Continuing Medical Education  
3301 Bainbridge Avenue, Bronx, NY 10467

## Conflict of Interest Statement

The "Conflict of Interest Disclosure Policy" of Albert Einstein College of Medicine of Yeshiva University and Montefiore Medical Center require that faculty participating in any CME activity disclose to the audience any relationship(s) with a pharmaceutical or equipment company. Any presenter whose disclosed relationships prove to create a conflict of interest, with regard to their contribution to the activity, will not be permitted to present. Albert Einstein College of Medicine of Yeshiva University and Montefiore Medical Center also require that faculty participating in any CME activity disclose to the audience when discussing any unlabeled or investigational use of any commercial product or device, not yet approved in the United States. The staff of CCME at Albert Einstein College of Medicine of Yeshiva University and Montefiore Medical Center have no conflicts of interest with commercial interests related directly or indirectly to this educational activity.

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## HOTEL INFORMATION

Affinia Manhattan Hotel, 371 Seventh Avenue (between 30th & 31st Sts.)  
New York, NY 10001. A limited number of rooms will be held at a special discount rate until **September 10, 2014**

For reservation call 866-233-4642 and identify yourself as a member of Montefiore Medical Center for discount rate.

## FOR FURTHER INFORMATION CONTACT:

Center for Continuing Medical Education  
3301 Bainbridge Avenue, Bronx, NY 10467.  
Phone: (718) 920-6674 e-mail: [npiacent@montefiore.org](mailto:npiacent@montefiore.org)

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## AGENDA

- 7:15 – 8:00 am Check-in and Continental Breakfast  
8:00 – 8:10 Opening Remarks Neil J. Cobelli, MD,

### SESSION 1: Current Concepts Underlying Musculoskeletal Diseases and Treatment

*Chairs:* Chairs: John A. Hardin, MD and Francis Y. Lee, MD

- 8:10 – 8:40 **Keynote:** Stress Mechanisms and Phenotypic Modulation in Osteoarthritis  
Mary B. Goldring, PhD
- 8:40 – 9:00 Self-Antigens in Juvenile Rheumatoid Arthritis  
Laura Santambrogio, MD, PhD
- 9:00 – 9:20 Osteogenic Cells as Inflammatory Cells at the Bone-Implant Interface  
Francis Y. Lee, MD

9:20 – 9:40 COFFEE BREAK

### SESSION 2: Pathogenesis and Potential Intervention of Musculoskeletal Cancers and Diseases

*Chairs:* Chairs: Steven R. Goldring, MD and Richard G. Gorlick, MD

- 9:40 – 10:00 Hereditary Multiple Exostoses: Pathogenesis and Possible Treatments  
Maurizio Pacifici, PhD
- 10:00 – 10:20 Molecular Pathogenesis of Osteosarcoma  
Richard G. Gorlick, MD
- 10:20 – 10:40 Unexpected Association of Progranulin with Rare Musculoskeletal Diseases  
Chuanju Liu, PhD

10:40 – 11:00 COFFEE BREAK

### SESSION 3: Rising Stars

*Chair:* Yi-Xian Qin, PhD

- 11:00 – 11:15 Biochemical Imaging of Articular Cartilage: T1 rho and T2 Mapping as a Noninvasive Biomarker of Early Cartilage Degeneration  
Karen E. Sperling, MD
- 11:15 – 11:30 Microdamage in Subchondral Bone Following Acute Knee Injury: A Potential Role in Post-Traumatic Osteoarthritis?  
Oran D. Kennedy, PhD
- 11:30 – 11:45 Mechanisms of Mineral Metabolism During Pregnancy and Lactation in Mice with X-Linked Hypophosphatemia (XLH)  
Steven M. Tommasini, PhD
- 11:45 – 12:00pm Stem Cell Activation During Neonatal Healing  
Alice H. Huang, PhD

12:00 – 2:00 LUNCH AND POSTER SESSION

FACULTY MEETING (12:00 – 12:45)

### SESSION 4: Tissue Remodeling and Interactions in Musculoskeletal and Other Systems

*Chairs:* X. Edward Guo, PhD and Sheldon Weinbaum, PhD

- 2:00 – 2:20 Transport Mechanisms for Muscle-Bone Cross-talk  
Liyun Wang, PhD
- 2:20 – 2:40 Cartilage and Bone Cross-talk via Mechanically Active MicroRNA  
Qian Chen, PhD
- 2:40 – 3:00 Remodeling of Bone Tissue on Bisphosphonates  
J. Christopher Fritton, PhD
- 3:00 – 3:20 How the Brain Senses Musculoskeletal Pain  
David C. Spray, PhD

**SESSION 5: Stem Cell, Tissue Repair and Regeneration**  
*Chairs: Jeremy J. Mao, DDS, PhD, and Steven B. Nicoll, PhD*

- 3:40 – 4:00 Repair of Dense Connective Tissues via Biomaterial-Mediated Matrix Reprogramming of the Wound Interface  
Robert L. Mauck, PhD
- 4:00 – 4:20 Mechanotransduction in Musculoskeletal Tissue Regeneration  
Yi-Xian Qin, PhD
- 4:20 – 4:40 Fibrochondrocytes: Are They a Distinctive Lineage?  
Jeremy J. Mao, DDS, PhD
- 4:40 – 5:00 Functional Repair of Intervertebral Disc Defects  
James C. Iatridis, PhD

**5:00 – 5:15 FACULTY PHOTOS / WALK TO LUBIN HALL**

**EVENING SESSION – Lubin Hall**  
*Chairs: Neil J. Cobelli, MD and Robert J. Majeska, PhD*

- 5:15 Reception and Dinner
- 5:30 – 5:50 **Plenary Speech: Career Development in Academics: I've Learned From My Mistakes and I Could Repeat Them Exactly**  
Mitchell B. Schaffler, PhD  
Introduction: Steven R. Goldring, MD
- 5:50 – 6:00 Young Investigator Awards and Presentations  
Mia M. Thi, PhD
- 6:00 Closing Remarks  
Neil J. Cobelli, MD

**CALL FOR ABSTRACTS / YOUNG INVESTIGATOR AWARD**

**Poster Session**

We invite investigators to submit abstracts for the poster session, which is an important component of this conference.

Posters will be displayed throughout the day with a dedicated 2 hour poster session during lunch.

**Young Investigator Award**

Abstracts from graduate students and postdoctoral fellows will be considered for Young Investigator Awards.

Five finalists will be chosen from the prescreening process.

Three winners will be announced and each will be presented with a prize and a plaque during the evening session

Winners will have the opportunity to give a brief achievement highlight (2 minutes) at the end of the award ceremony.

To qualify, you must register and submit an abstract to Dr. Mia Thi, the chair of the Poster Session and Young Investigator Award committee, by September 17th 2014 via email to: [mia.thi@einstein.yu.edu](mailto:mia.thi@einstein.yu.edu).

**POSTER SESSION AND YOUNG INVESTIGATOR AWARD COMMITTEE**

Chair: Mia M. Thi, PhD

Co-chaired by: David M. Hirsh, MD, Robert J. Majeska, PhD,  
Jeremy J. Mao, DDS, PhD, Maurizio Pacifici, PhD

For more information:

<https://www.einstein.yu.edu/departement/orthopaedic-surgery/symposium/>

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PROGRAM DIRECTOR

**Hui (Herb) B. Sun, PhD**

Associate Professor and Director of  
Orthopaedic Research  
Department of Radiation Oncology and  
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Albert Einstein College of Medicine  
Montefiore Medical Center  
Bronx, NY

FACULTY

**Qian Chen, PhD**

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Brown University/Alpert Medical School  
Director of Orthopaedic Research  
Rhode Island Hospital/Alpert Medical School  
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**Neil J. Cobelli, MD**

Professor and University Chairman  
Department of Orthopaedic Surgery  
Albert Einstein College of Medicine  
Montefiore Medical Center  
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Assistant Professor, Department of Orthopaedics  
Rutgers University, New Jersey Medical School  
Newark, NJ

**Mary B. Goldring, PhD**

Professor of Cell and Development Biology  
Joan and Sanford I. Weill Medical College of Cornell University  
Senior Scientist  
Hospital for Special Surgery  
New York, NY

**Steven R. Goldring, MD**

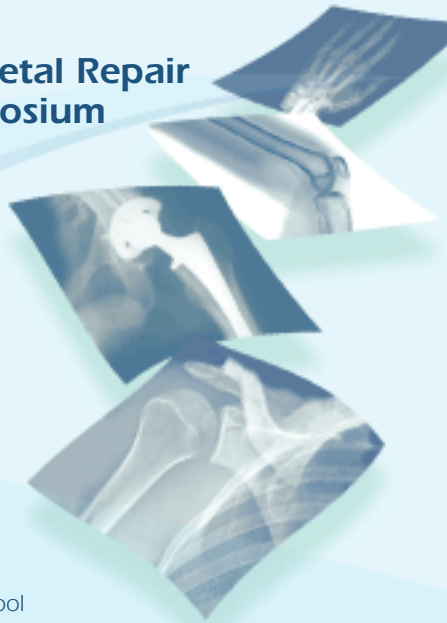
Professor of Medicine  
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Chief Scientific Officer  
Richard L. Menschel Research Chair  
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**John A. Hardin, MD**

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Albert Einstein College of Medicine  
Bronx, NY

**David M. Hirsh, MD**

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Professor and Vice Chair for Research Director of Spine Research  
Leni and Peter W. May Department of Orthopaedics  
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Hospital for Joint Diseases  
New York University School of Medicine  
New York, NY

**Francis Y. Lee, MD**

Professor of Orthopaedic Surgery, Tenure  
Columbia University College of Physicians and Surgeons  
Robert E. Carroll and Jane Chace Laboratories Professor  
Vice Chairman of Research, Chief, Tumor and Bone Disease Service  
Director, Center of Orthopaedic Research  
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New York University Hospital for Joint Diseases  
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**Jeremy J. Mao, DDS, PhD**

Professor of Dental Medicine and Orthopaedics  
Edwin S. Robinson Endowed Chair  
Co-Director, Center for Craniofacial Regeneration  
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New York, NY

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Associate Professor  
University of Pennsylvania School of Medicine  
Philadelphia, PA



**Steven B. Nicoll, PhD**

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**Maurizio Pacifici, PhD**

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Clinic Director of Orthopaedic Research  
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Philadelphia, PA

**Yi-Xian Qin, PhD**

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Director, Orthopaedic Bioengineering Research Laboratory  
Stony Brook University Medical Center  
Stony Brook, NY

**Laura Santambrogio, MD, PhD**

Professor, Department of Pathology, and Microbiology and Immunology  
and Orthopaedic Surgery  
Albert Einstein College of Medicine  
Bronx, NY

**Mitchell B. Schaffler, PhD**

CUNY and Wallace H. Coulter Distinguished Professor of Biomedical Engineering  
Chairman, Department of Biomedical Engineering  
City College of the City University of New York  
New York, NY

**Karen E. Sperling, MD**

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Albert Einstein College of Medicine  
Attending Radiologist, Division of Musculoskeletal Radiology  
Montefiore Medical Center  
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**David C. Spray, PhD**

Professor, Dominick P. Purpura Department of Neuroscience and Department  
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Albert Einstein College of Medicine  
Bronx, NY

**Mia M. Thi, MD**

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**Steven M. Tommasini, PhD**

Assistant Professor of Orthopaedics and Rehabilitation  
Yale University School of Medicine  
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**Liyun Wang, PhD**

Associate Professor, Department of Mechanical Engineering  
University of Delaware College of Engineering  
Newark, DE

**Sheldon Weinbaum, PhD**

CUNY Distinguished Professor of Biomedical and Mechanical Engineering Emeritus  
City College of the City University of New York  
New York, NY



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and Regeneration Symposium**

**THURSDAY, OCTOBER 2, 2014**



**REGISTRATION FORM**

*(Please print)*

Name \_\_\_\_\_  
First MI Last Degree

Mailing Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Daytime Phone ( \_\_\_\_\_ ) \_\_\_\_\_

E-mail \_\_\_\_\_

Specialty \_\_\_\_\_

**REGISTRATION FEES**

**Before September 17th, \$50.00 After September 17th, \$75.00**

**DINNER RECEPTION**  I will attend  I will not attend

**CANCELLATION POLICY**

Refund, less \$25.00 processing fee, will be given when requested in writing and submitted prior to September 17, 2014. **NO REFUNDS AFTER THIS DATE.**

**PAYMENT METHOD**

Check payable to: MONTEFIORE MEDICAL CENTER

VISA  MasterCard  AMEX

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Exp. Date

Signature \_\_\_\_\_

Card Holder Name \_\_\_\_\_

**FIVE EASY WAYS TO REGISTER**

- ON LINE: [www.mecme.org](http://www.mecme.org)
- PHONE: 718-920-6674
- FAX: 718-798-2336
- EMAIL: [npiacent@montefiore.org](mailto:npiacent@montefiore.org)
- MAIL: Completed registration form  
with your payment to:  
Center for Continuing  
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Directions:

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**Site Map**

**18** – Price Center    **9** – Lubin Hall

**P** – Parking

