

Arnold and Madaleine Penner
**4th Annual Musculoskeletal Repair
and Regeneration Symposium**

Thursday, October 22, 2015



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, Department of Orthopaedic Surgery:
Neil J. Cobelli, MD

Albert Einstein College of Medicine
Michael F. Price Center and Harold and Muriel Block
Research Pavilion
1300 Morris Park Avenue
Bronx, NY 10461

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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 year's meeting will emphasize recent advances in translational research in two areas:

- Mechanisms and development of novel therapeutics for musculoskeletal disorders and diseases
- Stem cell, tissue repair, degeneration, and regeneration

HIGHLIGHTS FOR 4th ANNUAL SYMPOSIUM

- Dynamic sessions based on the vision and primary contribution from the Steering Committee and Session Chairs: Maurizio Pacifici, PhD, Yi-Xian Qin, PhD, Nelly Andarawis-Puri, PhD, Jeremy J. Mao, DDS, PhD.
- World-class scientists, including keynote speakers, will share their viewpoints and their most exciting up-to-date translational research.
- Outstanding speakers from new participating institutions including: Rush University, Boston University, Rensselaer Polytechnic Institute, Georgia Tech/Emory University, and The University of Kansas.

SYMPOSIUM LOCATION AND DATE

October 22, 2015

LeFrak Auditorium (Room 151), Price Center

Albert Einstein College of Medicine

1301 Morris Park Ave. Bronx, NY 10461

SCIENTIFIC GAP

Damage to musculoskeletal tissues is a significant cause of morbidity and increased mortality, and is a magnifier of mortality in other clinical diseases such as diabetes and cardiovascular disorders. The innate repair capacities are limited for articular cartilage, tendon, and extensive bone defects. In addition, current treatments for the repair of injured musculoskeletal tissue 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 and regeneration strategies that can be translated to clinical use.

GOALS

This program will address current issues in musculoskeletal repair and regeneration, and disease 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.

REGISTRATION

Deadline: September 21, 2015

Registration includes continental breakfast, lunch, and reception.

Registration is free. Early registration is highly recommended.

Register online: <http://einstein.yu.edu/departments/orthopaedic-surgery/symposium>

AGENDA

7:15 – 8:00 am Check-in and continental breakfast

8:00 – 8:10 am Acknowledgements
Herb B. Sun, PhD
Opening remarks
Neil J. Cobelli, MD

Session 1 - Cartilage Biology and Repair

Chair: Maurizio Pacifici, PhD

8:10 – 8:35 am **Potential role of cartilage beta-catenin signaling in the development of spondyloarthritis**
Di Chen, MD, PhD, *Rush University*

8:35 – 9:00 am **Role of the iRhom2/ADAM17/TNFalpha signaling pathway in hemophilia arthropathy**
Carl P. Blobel, PhD, *Hospital for Special Surgery*

9:00 – 9:25 am **Cell lineage and molecular mechanisms underlying articular cartilage development and growth**
Maurizio Pacifici, PhD, *Children's Hospital of Philadelphia*

9:25 – 9:50 am **Strategies for functional tissue engineering of articular cartilage**
Clark T. Hung, PhD, *Columbia University*

9:50 – 10:10 am COFFEE BREAK

Session 2 – Regeneration and Degeneration

Chair: Yi-Xian Qin, PhD

10:10 – 10:35 am **Mechanical loading: bone degeneration and regeneration**
Mitchell B. Schaffler, PhD, *The City College of New York*

10:35 – 11:00 am **Diabetes alters bone response to exercise**
Mia M. Thi, PhD, *Albert Einstein College of Medicine*

11:00 – 11:25 am **Image-Guided Analysis of Failure Processes in the Elderly Spine**
Elise F. Morgan, PhD, *Boston University*

11:25 – 11:50 am **Trabecular Plate and Rod Abnormality in OA**
X. Edward Guo, PhD, *Columbia University*

12:00 – 1:45 pm LUNCH AND POSTER SESSION (Lubin Hall)
Lunch starts at 12:00 pm; Poster session starts at 12:45pm
12:00 pm – Faculty photo (Courtyard in front of Lubin Hall)
12:00 – 12:45 pm – Faculty meeting with lunch (Faculty Club in Lubin Hall)

Session 3 – Approaches to Development of Therapeutics for Tendon Injuries

Chair: Nelly Andarawis-Puri, PhD

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| 1:45 – 2:05 pm | Guiding regenerative strategies for tendon-to-bone repair: lessons from developmental biology
Stavros Thomopoulos, PhD, <i>Columbia University</i> |
| 2:05 – 2:25 pm | Enhancing tendon repair through stem cell reprogramming
Herb B. Sun, PhD, <i>Albert Einstein College of Medicine</i> |
| 2:25 – 2:45 pm | Guiding the Development of Immunomodulatory Therapeutics for Tendon Repair: 2D/3D Bioprinting to study Cell-Cell Signalling and Cross-Talk in Spatially-Precise Co-Cultures
David T. Corr, PhD, <i>Rensselaer Polytechnic Institute</i> |
| 2:45 – 3:05 pm | Effects of Autologous Tenocyte-Seeded Nanofibrous Scaffolds in Rotator Cuff Repair
Andrew F. Kuntz, MD, <i>University of Pennsylvania</i> |
| 3:05 – 3:25 pm | Discussion |

3:25 – 3:45 pm COFFEE BREAK

Session 4 – Musculoskeletal Repair and Regeneration

Chair: Jeremy J. Mao, DDS, PhD

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|----------------|---|
| 3:45 – 4:10 pm | Keynote: Biologic Augmentation for Rotator Cuff Repair – Is it Ready for Human Use Yet?
William N. Levine, MD, <i>Columbia University</i> |
| 4:10 – 4:35 pm | GAG-based Biomaterials for Protein Release and Cell Differentiation
Johnna S. Temenoff, PhD, <i>Georgia Tech/Emory University</i> |
| 4:35 – 5:00 pm | Injectable Cellulosic Hydrogels for Nucleus Pulposus Replacement
Steven B. Nicoll, PhD, <i>The City College of New York</i> |
| 5:00 – 5:25 pm | Will Chondroinductive Materials Revolutionize Cartilage Regeneration?
Michael Detamore, PhD, <i>The University of Kansas</i> |

Young Investigator Awards / Reception (Lubin Hall)

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|----------------|---|
| 5:30 pm | Young Investigator Awards
Chair: Mia M. Thi, PhD |
| 5:40 pm | Closing remarks
Neil J. Cobelli, MD |
| 5:40 – 6:15 pm | Reception and networking |

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PROGRAM DIRECTOR

Hui (Herb) B. Sun, PhD

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

STEERING COMMITTEE AND SESSION CHAIRS:

Nelly Andarawis-Puri, PhD

Assistant Professor of Orthopaedics
Icahn School of Medicine at Mount Sinai
New York, NY

Jeremy J. Mao, DDS, PhD

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

Maurizio Pacifici, PhD

Professor of Orthopaedic Surgery
University of Pennsylvania School of Medicine
Director of Orthopaedic Research
Children's Hospital of Philadelphia
Philadelphia, PA

Yi-Xian Qin, PhD

Professor of Biomedical Engineering,
Orthopaedics and Biophysics
State University of New York at Stony Brook
Director, Orthopaedic Bioengineering Research
Laboratory
Stony Brook University Medical Center
Stony Brook, NY

FACULTY LIST

Carl P. Blobel, MD, PhD

Professor of Medicine, Physiology & Biophysics
Weill Medical College of Cornell University
Virginia F. and William R. Salomon Chair in
Musculoskeletal Research
Senior Scientist
Program Director of the Arthritis and Tissue
Degeneration Program
Hospital for Special Surgery
New York, NY

Di Chen, MD, PhD

The John W. and Helen Watzek Professor of
Biochemistry
Chairman, Department of Biochemistry
Rush University
Chicago, IL

Neil J. Cobelli, MD

Professor and University Chairman
Department of Orthopaedic Surgery
Albert Einstein College of Medicine and
Montefiore Medical Center
Bronx, NY

David T. Corr, PhD

Associate Professor of Biomedical Engineering
Rensselaer Polytechnic Institute
Troy, NY

Michael Detamore, PhD

Professor of Chemical & Petroleum
Engineering
Courtesy Professor of Mechanical Engineering
Director of the Biomaterials and Tissue
Engineering Laboratory
The University of Kansas
Lawrence, KS

Robert C. Gensure, MD, PhD

Associate Professor, Department of Pediatrics
Albert Einstein College of Medicine and
Montefiore Medical Center
Bronx, NY

X. Edward Guo, PhD

Professor of Biomedical Engineering
Vice Chair of Department of Biomedical
Engineering
Columbia University
New York, NY

Richard G. Gorlick, MD

Vice Chairman, Department of Pediatrics
Professor, Departments of Pediatrics, and
Molecular Pharmacology
Chief, Division of Pediatric Hematology and
Oncology, Department of Pediatrics
Albert Einstein College of Medicine and
Montefiore Medical Center
Bronx, NY

John A. Hardin, MD

Professor of Medicine, Microbiology &
Immunology, and Orthopaedic Surgery
Albert Einstein College of Medicine and
Montefiore Medical Center
Bronx, NY

David M. Hirsh, MD

Professor of Orthopaedic Surgery
Albert Einstein College of Medicine
Director, Joint Replacement Service
Montefiore Medical Center
Bronx, NY

Bang H. Hoang, MD

Associate Professor of Department of
Orthopaedic Surgery
Albert Einstein College of Medicine and
Montefiore Medical Center
Bronx, NY

Clark T. Hung, PhD

Professor of Biomedical Engineering
Columbia University
New York, NY

Andrew F. Kuntz, MD

Assistant Professor of Orthopaedic Surgery
Director, Shoulder Study Group
University of Pennsylvania
Philadelphia, PA

William N. Levine, MD

Frank E. Stinchfield Professor and Chairman of
Clinical Orthopaedic Surgery
Head Team Physician - Columbia University
Athletics
Chief, Shoulder Service and Co-Director CSES
Columbia University
New York, NY

Robert J. Majeska, PhD

Adjunct Professor of Biomedical Engineering
Grove School of Engineering
The City College of New York
New York, NY

Elise F. Morgan, PhD

Associate Professor of Mechanical Engineering
and Biomedical Engineering
Boston University
Boston, MA

Steven B. Nicoll, PhD

Associate Professor of Biomedical Engineering
Grove School of Engineering
The City College of New York
New York, NY

Laura Santambrogio, MD, PhD

Professor of Pathology, Microbiology &
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
The City College of New York
New York, NY

David C. Spray, PhD

Professor, Dominick P. Purpura Department of
Neuroscience and Department of Medicine
(Cardiology)
Albert Einstein College of Medicine and
Montefiore Medical Center
Bronx, NY

Sylvia O. Suadicani, PhD

Associate Professor of Urology
Assistant Professor, Dominick P. Purpura
Department of Neuroscience
Albert Einstein College of Medicine and
Montefiore Medical Center
Bronx, NY

Johnna S. Temenoff, PhD

Associate Professor
Wallace H. Coulter Department of Biomedical
Engineering
Georgia Tech/ Emory University
Atlanta, GA

Mia M. Thi, PhD

Assistant Professor of Orthopaedic Surgery
Instructor, Dominick P. Purpura Department of
Neuroscience
Albert Einstein College of Medicine
Montefiore Medical Center
Bronx, NY

Stavros Thomopoulos, PhD

Professor of Orthopaedic Surgery and
Biomedical Engineering,
Vice Chair of Basic Research in Orthopaedic
Surgery
Director of the Orthopedic Research
Laboratories
Columbia University
New York, NY

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 poster session.

Young Investigator Award - Abstracts from graduate students and postdoctoral fellows will be considered for Young Investigator Awards. Three winners will be announced and each will be presented with prize and a plaque during the evening session. Winners will have the opportunity to give a brief highlight of their work (2 minutes) at the end of the award ceremony.

To qualify, you must register and submit an abstract to Dr. Mia M. Thi, the chair of the Poster Session and Young Investigator Award committee, by September 21, 2015 via email to: mia.thi@einstein.yu.edu.

ABSTRACT GUIDELINES

The abstract is limited to 1 page. Include in your abstract the study's objective, a brief statement of methods, a summary of the results obtained, conclusions, and significance. As the Symposium aims to promote communication within our region, we encourage you to submit your recent work (within 2015) to this Symposium, including work that may have been submitted to other meetings.

POSTER SESSION AND YOUNG INVESTIGATOR AWARD COMMITTEE

Chair: Mia M. Thi, PhD

Co-chairs: David M. Hirsh, MD, Robert J. Majeska, PhD, Jeremy J. Mao, DDS, PhD, Maurizio Pacifici, PhD, Sylvia O. Suadicaní, PhD

CONTACT INFORMATION

Herb B. Sun, PhD

Program Director

Email: herb.sun@einstein.yu.edu

P: 718-430-4291

F: 718-430-3259

Mia M. Thi, PhD

Chair, Poster Session and Young Investigator Award Committee

Email: mia.thi@einstein.yu.edu

P: 718-430-3460

Rhomina Carrasco

Symposium Coordinator

Email: rhomina.carrasco@einstein.yu.edu

P: 718-430-2911



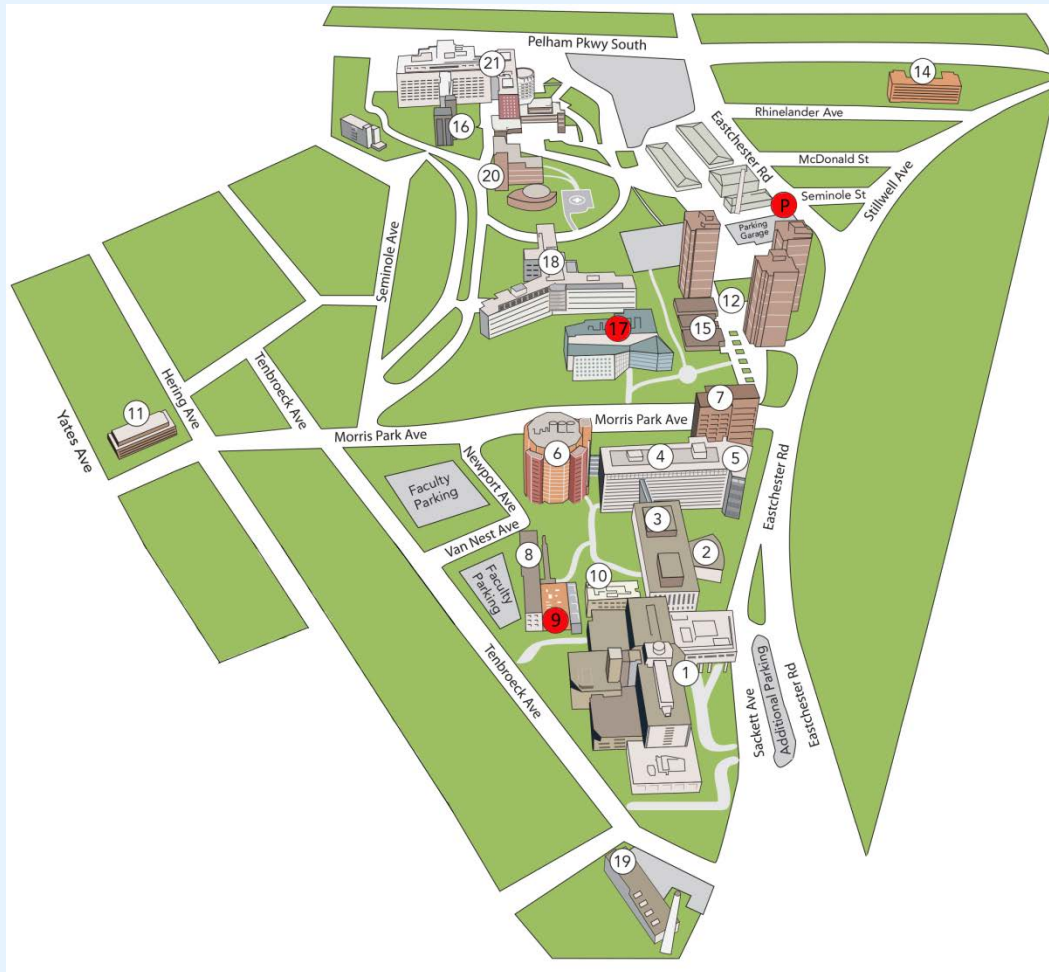
Symposium Location

Albert Einstein College of Medicine

Michael F. Price Center and Harold and Muriel Block Research Pavilion

1301 Morris Park Avenue, Bronx, NY 10461

Direction: <http://www.einstein.yu.edu/visitors/>



Site Map

- 17 Price Center
- 9 Lubin Hall
- P Parking

HOTEL INFORMATION

Residence Inn by Marriot

The Bronx at Metro Center Atrium

1776 Eastchester Road, Bronx, NY 10461

Launched in May 2015, the hotel is a 10 minute walk from the Symposium, and offers a free shuttle to Albert Einstein

www.marriot.com/nycbx

P: 718-239-3939

PARKING INFORMATION

The PF Parking lot

1975 Eastchester Road

Bronx, NY 10461

<http://einstein.pfparking.org/location.php>