

Arnold and Madaleine Penner
**6th Annual Musculoskeletal Repair
and Regeneration Symposium**

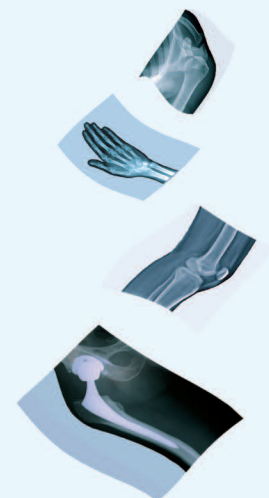
Thursday, October 19, 2017

Presented by: Musculoskeletal and Orthopaedic Research Laboratories
and Department of Orthopaedic Surgery



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



Arnold and Madaleine Penner

6th Annual Musculoskeletal Repair and Regeneration Symposium

Thursday, October 19, 2017

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 creativity, collaboration and networking between researchers throughout the region. This year's meeting will emphasize recent advances in translational research in four areas:

- Imaging and loading of the skeleton: From mouse to human
- Cartilage: Development, pathologies, and repair
- Tendon regeneration: From development to translation
- Stem Cells in regenerative medicine

HIGHLIGHTS FOR 6th ANNUAL SYMPOSIUM

- Dynamic sessions based on the vision and primary contribution from the Steering Committee and Session Chairs: X. Edward Guo, PhD, Maurizio Pacifici, PhD, Alice Huang, PhD, Jeremy Mao, DDS, PhD, Catherine Kuo, PhD.
- World-class scientists, including keynote speakers, will share their viewpoints and their most exciting up-to-date translational research.
- Outstanding speakers from the region and nationwide.

SYMPOSIUM LOCATION AND DATE

October 19, 2017

LeFrak Auditorium (Room 151), Price Center

Albert Einstein College of Medicine

1301 Morris Park Ave. Bronx, NY 10461

STATEMENT OF NEED

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: October 16, 2017

Registration includes continental breakfast, lunch, and reception.

Registration is free. Early registration is highly recommended.

[Click here to register](#)

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 25, 2017 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. Please see abstract template on the website. As the Symposium aims to promote communication within our region, we encourage you to submit your recent work (within 2017) to this Symposium, including work that may have been submitted to other meetings.

PROGRAM COMMITTEE

PROGRAM DIRECTOR

Hui (Herb) B. Sun, PhD

STEERING COMMITTEE CHAIRS

- X. Edward Guo, PhD
- Alice Huang, MD
- Catherine Kuo, PhD
- Jeremy J. Mao, DDS, PhD
- Maurizio Pacifici, PhD

PROGRAM OVERSEERS

- Di Chen, MD, PhD
- Mary B. Goldring, PhD
- X. Edward Guo, PhD
- James Iatridis, PhD
- Lionel Ivashkiv, MD
- Thorsten Kirsch, PhD
- Chuanju Liu, PhD
- Helen Lu, PhD
- Jeremy J. Mao, DDS, PhD
- Maurizio Pacifici, PhD
- Nicola Partridge, PhD
- Clint Rubin, PhD
- Yi-Xian Qin, PhD
- Mitchell B. Schaffler, PhD

POSTER SESSION AND YOUNG INVESTIGATOR AWARD COMMITTEE

- Chair: Mia M. Thi, PhD
- Co-chair: Di Chen, MD, PhD
- Co-chair: David M. Hirsh, MD
- Co-chair: Bang H. Hoang, PhD
- Co-chair: Robert J. Majeska, PhD
- Co-chair: Sylvia O. Suadicani, PhD

AGENDA

- 7:15 – 8:00 am Check-in and continental breakfast
- 8:00 – 8:10 am Introduction and acknowledgements
Hui (Herb) B. Sun, PhD
- Opening remarks
Neil J. Cobelli, MD

Session 1 – Imaging and loading of the skeleton: from mouse to human Steering Chair: X. Edward Guo, PhD

- 8:10 – 8:35 am **Bone Mechanobiology: In Vivo Studies on the Role of Age, Wnt Signaling, and Cell Proliferation**
Matthew Silva, PhD
Washington University in St. Louis
- 8:35 – 9:00 am **Integration of Ultrasound Imaging and Therapeutics of Tissue Regeneration and Cellular Ca⁺⁺ Excitation**
Yi-Xian Qin, PhD
Stony Brook University
- 9:00 – 9:25 am **In Vivo Mechanical Loading and Imaging in Mouse**
Mitchell B. Schaffler, PhD
The City College of New York
- 9:25 – 9:50 am **Perspectives of In Vivo Skeletal Imaging and Mechanical Loading in Humans**
X. Edward Guo, PhD
Columbia University

9:50 – 10:10 am COFFEE BREAK

Session 2 – Cartilage: development, pathologies and repair Steering Chair: Maurizio Pacifici, PhD

- 10:10 – 10:35 am **The Role of BMP Signaling in Joint Homeostasis**
Vicki Rosen, PhD
Harvard University
- 10:35 – 11:00 am **Novel Imaging Modalities for Assessment of Cartilage Pathology and Repair**
Nancy Pleshko, PhD
Temple University

- 11:00 – 11:25 am **Contribution of IKK α to Chondrocyte Hypertrophy and Cartilage Degradation in Osteoarthritis**
Miguel Otero, PhD
The Hospital for Special Surgery
- 11:25 – 11:50 am **Cartilage Regeneration by Bone Marrow Stimulating Factor**
Jeremy J. Mao, DDS, 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 – Group and Faculty photo (Courtyard in front of Lubin Hall)

12:00 – 12:45 pm – Faculty meeting with lunch (Faculty Club in Lubin Hall)

Session 3 – Tendon Regeneration: From Development to Translation

Steering Chair: Alice Huang, PhD

- 1:45 – 2:10 pm **Regulation of Tendon Growth and Maturation**
Ronen Schweitzer, PhD
Oregon Health & Science University
- 2:10 – 2:35 pm **FGF Signaling in Enthesis Maturation**
Megan Killian, PhD
University of Delaware
- 2:35 – 3:00 pm **Postnatal Tendon Growth and Remodeling Requires Platelet-Derived Growth Factor Receptor Signaling**
Christopher Mendias, PhD
University of Michigan
- 3:00 – 3:25 pm **Tendon Regeneration by Harnessing Endogenous Stem Cells: From Small Molecules to Scaffolds**
Chang Lee, PhD
Columbia University

3:25 – 3:45 pm COFFEE BREAK

Session 4 – Stem Cells in Regenerative Medicine

Steering Chair: Jeremy J. Mao, DDS, PhD and Catherine Kuo, PhD

- 3:45 – 4:05 pm **Embryonically Inspired Tendon Regeneration Approaches**
Catherine Kuo, PhD
University of Rochester
- 4:05 – 4:25 pm **Novel TNFR2 Bone Regeneration Signaling**
Chuanju Liu, PhD
New York University

- 4:25 – 4:45 pm **Designing Tissue-Mimetic Niches for Stem Cell Mediated Cartilage and Bone Regeneration**
Stephanie Bryant, PhD
University of Colorado
- 4:45 – 5:05 pm **Delivery Strategies for Increasing Endogenous Progenitor Cells for Bone Defect Healing**
Liisa Kuhn, PhD
University of Connecticut
- 5:05-5:25pm **Annulus Fibrosus Repair in a Large Animal Model**
James C. Iatridis, PhD
Icahn School of Medicine at Mount Sinai

Young Investigator Awards / Reception (Lubin Hall)

- 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

Arnold and Madaleine Penner
6th Annual Musculoskeletal Repair and Regeneration Symposium
Thursday, October 19, 2017

FACULTY MEMBERS

Stephanie J. Bryant, PhD

Associate Professor
Department of Chemical
and Biological Engineering
University of Colorado
Boulder, CO

Di Chen, MD, PhD

The John W. and Helen Watzek Professor and
Chairman 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

Mary B. Goldring, PhD

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

X. Edward Guo, PhD

Professor and Vice Chair of Biomedical
Engineering
Columbia University
New York, 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

Alice Huang, PhD

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

James C. Iatridis, PhD

Professor of Orthopaedics and Neurosurgery
Vice-Chair for Research
Director of Spine Research
Icahn School of Medicine at Mount Sinai
New York, NY

Megan Killian, PhD

Assistant Professor
Department of Biomedical Engineering
University of Delaware
Newark, DE

Liisa T. Kuhn, PhD

Associate Professor
Department of Reconstructive Sciences, Center
for Regenerative Medicine and Skeletal
Development
University of Connecticut
Farmington, CT

Catherine K. Kuo, PhD

Associate Professor
Department of Biomedical Engineering
and Department of Orthopaedics
University of Rochester
Rochester, NY

Chang Hun Lee, PhD

Assistant Professor
Department of Craniofacial Engineering
Columbia University
New York, NY

Chuanju Liu, PhD

Professor
Department of Orthopaedic Surgery
And Department of Cell Biology
New York 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

Jeremy J. Mao, DDS, PhD

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

Christopher Mendias, PhD, A.T.C.

Associate Professor
Department of Orthopaedic Surgery
and Department of Molecular and
Integrative Physiology
University of Michigan
Ann Arbor, MI

Miguel Otero, PhD

Assistant Scientist
Tissue Engineering Regeneration
and Repair Program
Hospital for Special Surgery
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

Nancy Pleshko, PhD

Professor
Department of Bioengineering
Temple University
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

Vicki Rosen, PhD

Professor
Developmental Biology and
Chair of Department Biology
Harvard University
Boston, MA

Laura Santambrogio, MD, PhD

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

Ronen Schweitzer, PhD

Associate Professor
Department of Developmental
and Cancer Biology
Oregon Health and Science University
Portland, OR

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

Matthew Silva, PhD

Julia and Walter R. Peterson
Orthopaedic Research Professor
Department of Orthopaedics
Washington University in St. Louis
St. Louis, MO

Sylvia O. Suadicani, PhD

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



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

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

CONTACT INFORMATION

Hui (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

Directions:

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

HOTEL INFORMATION

Residence Inn by Marriott

The Bronx at Metro Center Atrium

1776 Eastchester Road, Bronx, NY 10461

The hotel is a 10-minute walk from the Symposium.

www.marriott.com/nycbx

P: 718-239-3939

PARKING INFORMATION

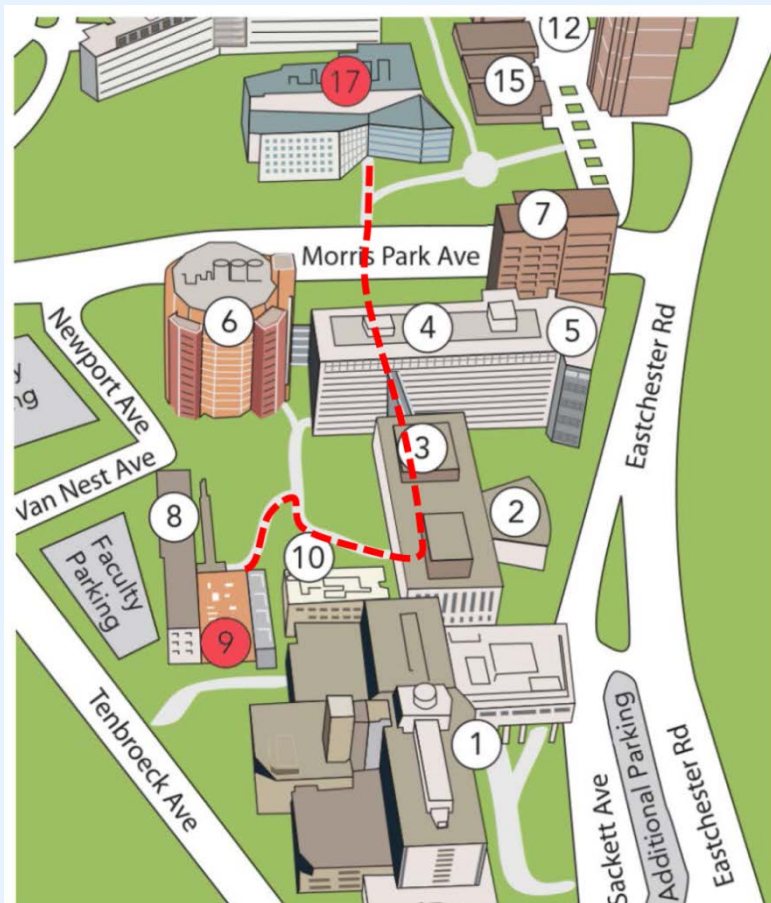
The PF Parking lot

1975 Eastchester Road

Bronx, NY 10461

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

Campus Map



- 17 - Price Center
- 9 - Lubin Hall
- Red line - Path from Price Center to Lubin Hall