

Arnold and Madaleine Penner  
**8<sup>th</sup> Annual Musculoskeletal Repair  
and Regeneration Symposium**

Thursday, October 3, 2019

*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**



**Lefrak Auditorium in Michael F. Price Center**  
Albert Einstein College of Medicine  
1301 Morris Park Avenue  
Bronx, NY 10461

Arnold and Madaleine Penner

# 8<sup>th</sup> Annual Musculoskeletal Repair and Regeneration Symposium

Thursday, October 3, 2019

LeFrak Auditorium (Room 151), Price Center  
Albert Einstein College of Medicine  
1301 Morris Park Ave. Bronx, NY 10461

## 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:

- Current concepts in musculoskeletal joint diseases and treatments
- Muscle pathology seen in the setting of tendon injury
- “Hot topics” in bone
- Tissue repair and regeneration and immune modulation

## GOALS AND FEATURES

This program attempts to address current issues in musculoskeletal repair and regeneration, and disease treatment. The presentations and discussions will focus on up-to-date scientific discoveries and the potential impact of these findings on patient treatment and management in the future. This meeting features:

- 16 outstanding speakers from the region and nationwide
- Poster session and Young Investigator Award session

## REGISTRATION

Deadline: **September 26, 2019**

Please register online at:

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

Registration includes continental breakfast, lunch, and reception.

Registration is free. Early registration is highly recommended.

## CALL FOR ABSTRACTS FOR POSTER SESSION AND YOUNG INVESTIGATOR AWARD

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.

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 16, 2019** via email to: [mia.thi@einstein.yu.edu](mailto:mia.thi@einstein.yu.edu).

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 2019) to this Symposium, including work that may have been submitted to other meetings.

### PROGRAM DIRECTOR

Hui (Herb) B. Sun, PhD

### STEERING COMMITTEE CHAIRS

- Chuanju Liu, PhD
- Scott Rodeo, MD
- J. Chris Fritton, PhD
- Helen Lu, PhD

### PROGRAM OVERSEERS

- Di Chen, MD, PhD
- Michael Detamore, PhD
- Susannah Fritton, PhD
- Mary Goldring, PhD
- Steven Goldring, MD
- Ed Guo, PhD
- John Hardin, MD
- David Hirsh, MD
- James Iatridis, PhD
- Lionel Ivashkiv, MD
- Thorsten Kirsch, PhD
- Catherine Kuo, PhD
- Chuanju Liu, PhD
- Helen Lu, PhD
- Jeremy Mao, DDS, PhD
- Steven Nicoll, PhD
- Maurizio Pacifici, PhD
- Nicola Patridge, PhD
- Clinton Rubin, PhD
- Yi-Xian Qin, PhD
- Mitchell Schaffler, PhD
- David Spray, PhD
- Stavros Thomopoulos, PhD

### POSTER SESSION AND YOUNG INVESTIGATOR AWARD COMMITTEE

Chair: Mia M. Thi, PhD

#### Co-Chairs

- Di Chan, MD, PhD
- David Corr, PhD
- X. Edward Guo, PhD
- Regina Hanstein, PhD
- David Hirsh, MD
- Bang Hoang, PhD
- Robert Majeska, PhD
- Jeremy Mao, DDS, PhD
- Yi-Xian Qin, PhD
- Sylvia 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 – Current Concepts in Musculoskeletal Joint Diseases and Treatment Steering Chair: Chuanju Liu, PhD

- 8:10 – 8:15 am **Introduction**  
Chuanju Liu, PhD  
New York University
- 8:15 – 8:35 am **Inflammatory regulation of bone injury and repair**  
Lionel Ivashkiv, MD.  
Hospital for Special Surgery
- 8:35 – 8:55 am **Purine nucleotides, nucleosides, Inflammaging and Osteoarthritis**  
Bruce Cronstein, MD.  
New York University
- 8:55 – 9:15 am **Substrate-identification for the ADAMTS17 protease and its role in Weill-Marchesani-like syndrome**  
Dirk Hubmacher, PhD.  
Icahn School of Medicine at Mount Sinai
- 9:15 – 9:35 am **Biomaterials strategies to modulate inflammation for tissue repair**  
Kam W. Leong, PhD.  
Columbia Univeristy
- 9:35 – 9:40 am **Discussion / Conclusions**

9:40 – 10:00 am COFFEE BREAK

### Session 2 – “Hot Topics” in Bone Steering Chair: J. Chris Fritton, PhD

- 10:00 – 10:05 am **Introduction**  
J. Chris Fritton, PhD  
The City College of New York
- 10:05 – 10:25 am **Of aging mice and humans: Osteocytes, connections and communication**  
Mitchell Schaffler, PhD.  
City College of New York

- 10:25 – 10:45 am      **Effects of Somatopause on the Aging Skeleton**  
Shoshana Yakar, PhD.  
New York University
- 10:45 – 11:05 am      **Malignant Osteogenesis and Tumor Heterogeneity: An Evolutionary Paradigm**  
Bang Hoang, MD.  
Montefiore Medical Center
- 11:05 – 11:25 am      **How Does Mechanical Loading Build Bone Microstructure: Modeling vs. Remodeling**  
Ed Guo, PhD.  
Columbia University
- 11:25 – 11:30 am      **Discussion / Conclusions**

11:35 pm – 11:45am: Group photos (Courtyard in front of Lubin Hall)  
11:45 – 12:30 pm: Faculty meeting with lunch (Faculty Club in Lubin Hall)  
11:45 – 1:55 pm: LUNCH AND POSTER SESSION (Lubin Hall)

**Session 3 – Muscle Pathology Seen in the Setting of Tendon Injury**  
Steering Chair: Scott Rodeo, MD

- 2:00 – 2:05 pm      **Introduction**  
Scott Rodeo, MD  
Hospital for Special Surgery
- 2:05 – 2:25 pm      **The clinical problem of muscle atrophy and fatty infiltration in rotator cuff injury**  
Brian Feeley, MD.  
University of California, San Francisco
- 2:25 – 2:45 pm      **Impaired Muscle Growth and Regeneration in Chronic Rotator Cuff Tears**  
Samuel Ward, PhD.  
University of California, San Diego
- 2:4 – 3:05 pm      **Targeted control of skeletal muscle contraction and tendon loading using optogenetics**  
Megan Killian, PhD.  
University of Delaware
- 3:05 – 3:25 pm      **Mitochondrial dysfunction in tendon and muscle**  
Scott Rodeo, MD.  
Hospital for Special Surgery
- 3:25 – 3:30 pm      **Discussion / Conclusions**

3:30 – 3:50 pm COFFEE BREAK

**Session 4 – Tissue Repair and Regeneration and Immune Modulation**  
Steering Chair: Helen Lu, PhD

3:50 – 3:55pm	<b>Introduction</b> Helen Lu, PhD Columbia University
3:55 – 4:15 pm	<b>Pseudotime kinetic analysis of inflammation and immune modulatory treatment in soft tissue injuries</b> Edward Botchwey, PhD Georgia Institute of Technology
4:15 – 4:35 pm	<b>Engineering new biologic therapies for arthritis</b> Farshid Guilak, PhD Washington University in St Louis
4:35 – 4:55 pm	<b>Engineering Materials for Immunomodulation in Osteoarthritis</b> Ankur Singh, PhD. Cornell University
4:55 – 5:15pm	<b>Immune regulation of tendon regeneration</b> Alice Huang, PhD. Icahn School of Medicine at Mount Sinai
5:15 – 5:20 pm	<b>Discussion / Conclusions</b>

5:20 – 5:25 pm COFFEE BREAK

**Young Investigator Awards / Reception (Lubin Hall)**

5:25 – 5:45 pm	Young Investigator Awards Hosted by: <i>Young Investigator Award Committee</i> Chair: Mia M. Thi, PhD
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**Closing Remarks and Reception (Lubin Hall)**

5:50 pm	Closing remarks Neil J. Cobelli, MD
6:00 pm	Reception and networking

**Arnold and Madaleine Penner**  
**8<sup>th</sup> Annual Musculoskeletal Repair and Regeneration Symposium**  
Thursday, October 3, 2018

**Chairs, Co-Chairs, and Speakers**

**Edward Botchwey, PhD**

Associate Professor of Biomedical Engineering  
Georgia Institute of Technology  
Atlanta, GA

**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 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

**Bruce Cronstein, MD.**

Director of Clinical and Translational Science Institute  
Chief, Division of Translational Medicine  
Dr. Paul R Esserman Professor of Medicine,  
Professor of Pathology and Pharmacology  
New York University  
New York, NY

**Brian Feeley, MD.**

Professor of Orthopaedic Surgery  
School of Medicine  
University of California, San Francisco, CA

**J. Chris Fritton, PhD**

Assistant Professor  
The City College of New York  
New York, NY

**Farshid Guilak, PhD.**

Professor of Orthopaedic Surgery  
School of Medicine, Washington University in St Louis  
St. Louis, MO

**X. Edward Guo, PhD**

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

**Regina Hanstein, PhD**

Research Assistant Professor of Orthopaedic Surgery  
Albert Einstein College of Medicine and Montefiore  
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**David M. Hirsh, MD**

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**Bang H. Hoang, MD**

Professor of Orthopaedic Surgery  
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Icahn School of Medicine at Mount Sinai  
New York, NY

**Dirk Hubmacher, PhD.**

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

**Lionel Ivashkiv, MD.**

Chief Scientific Officer, Director of HSS Genomics Center  
Richard L. Menschel Research Chair  
David H. Koch Chair in Arthritis and Tissue Degeneration  
Professor of Medicine and Immunology  
Weill Cornell Medicine, Hospital for Special Surgery  
New York, NY

**Megan Killian, PhD**

Assistant Professor of Biomedical Engineering  
University of Delaware  
Newark, DE

**Kam W. Leong, PhD.**

Samuel Y. Sheng Professor of Biomedical Engineering  
(Systems Biology), Columbia University  
New York, NY

**Chuanju Liu, PhD**

Professor of Orthopaedic Surgery and Cell Biology  
New York University  
New York, NY

**Helen Lu, PhD**

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

**Robert J. Majeska, PhD**

Professor of Biomedical Engineering  
The City College of New York  
New York, NY

**Jeremy J. Mao, DDS, PhD**

Edwin S. Robinson Professor of Dentistry (in  
Orthopaedic Surgery, Pathology and Cell biology)  
College of Dental Medicine, Columbia University  
New York, NY

**Maurizio Pacifici, PhD**

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

**Yi-Xian Qin, PhD**

Professor of Biomedical Engineering  
Director, Orthopaedic Bioengineering Research  
Laboratory  
Associate Dean for Academic Affairs and Int'l Programs,  
College of Engineering and Applied Sciences  
State University of New York at Stony Brook  
Stony Brook, NY

**Scott Rodeo, MD**

Attending Orthopedic Surgeon  
Co-Chief Emeritus, Sports Medicine Service  
Professor of Orthopedic Surgery, Weill Cornell Medical  
College  
Hospital for Special Surgery  
New York, NY

**Mitchell B. Schaffler, PhD**

Wallace H. Coulter and Presidential Professor of  
Biomedical Engineering  
Chair of Biomedical Engineering  
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New York, NY

**Ankur Singh, PhD.**

Associate Professor of Mechanical and Aerospace  
Engineering and Biomedical Engineering  
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Professor, Departments of Orthopaedic Surgery  
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**Mia M. Thi, PhD**

Associate Professor of Orthopaedic Surgery  
Instructor of Neuroscience  
Albert Einstein College of Medicine  
Montefiore Medical Center  
Bronx, NY

**Samuel Ward, PhD.**

Professor of Orthopaedic Surgery and Radiology  
Vice Chair of Research  
University of California San Diego  
San Diego, CA

**Shoshana Yakar, PhD.**

Associate Professor of Basic Science and Craniofacial  
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New York University  
New York, NY



## CONTACT INFORMATION

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Program Director

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### Mia M. Thi, PhD

Chair, Poster Session and Young Investigator

Award Committee

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### Rhomina Carrasco

Symposium Coordinator

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## 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](http://www.marriott.com/nycbx)

P: 718-239-3939

## PARKING INFORMATION

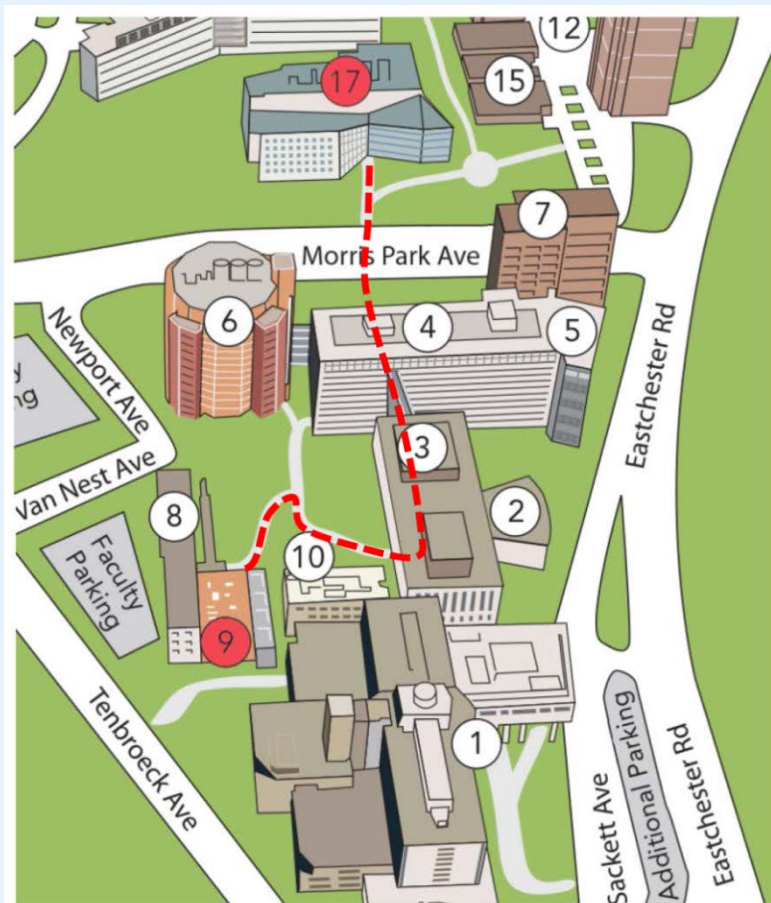
The Kwik Park Parking Lot

1975 Eastchester Road

Bronx, NY 10461

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

## Campus Map



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