Arnold and Madaleine Penner
8th 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
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, postdoctoral fellows, residents and clinical fellows will be considered for Young Investigator Awards. Four 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.

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
• Helen Lu, PhD

PROGRAM OVERSEEERS
• Chuanju Liu, PhD
• Scott Rodeo, MD

POSTER SESSION AND YOUNG INVESTIGATOR AWARD COMMITTEE
Chair: Mia M. Thi, PhD
Co-chairs:

• Di Chen, MD, PhD
• David M. Hirsh, MD
• David T. Corr, PhD
• Bang H. Hoang, MD
• X. Edward Guo, PhD
• Robert J. Majeska, PhD
• Regina Hanstein, PhD
• Jeremy J. Mao, DDS, PhD
• Maurizio Pacifici, PhD
• Yi-Xian Qin, PhD
• 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 – 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 B. Ivashkiv, MD  
Hospital for Special Surgery

8:35 – 8:55 am  Purine nucleotides, nucleosides, inflammaging and osteoarthritis  
Bruce N. 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  Engineering new biologic therapies for arthritis  
Farshid Guilak, PhD  
Washington University in St Louis

9:35 – 9:40 am  Discussion / Conclusions

9:40 – 10:00 am COFFEE BREAK

Session 2 – Muscle Pathology Seen in the Setting of Tendon Injury  
Steering Chair: Scott Rodeo, MD

10:00 – 10:05 am  Introduction  
Scott A. Rodeo, MD  
Hospital for Special Surgery

10:05 – 10:25 am  The clinical problem of muscle atrophy and fatty infiltration in rotator cuff injury  
Brian T. Feeley, MD  
University of California, San Francisco
10:25 – 10:45 am  
**Impaired muscle growth and regeneration in chronic rotator cuff tears**  
Samuel R. Ward, PhD  
University of California, San Diego

10:45 – 11:05 am  
**Targeted control of skeletal muscle contraction and tendon loading using optogenetics**  
Megan L. Killian, PhD  
University of Delaware

11:05 – 11:25 am  
**Mitochondrial dysfunction in tendon and muscle**  
Scott A. Rodeo, MD  
Hospital for Special Surgery

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)

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**Session 3 – “Hot Topics” in Bone**  
Steering Chair: J. Christopher Fritton, PhD

2:00 – 2:05 pm  
**Introduction**  
J. Christopher Fritton, PhD  
Rutgers, New Jersey Medical School

2:05 – 2:25 pm  
**Altered osteocyte communication in aging**  
Mitchell B. Schaffler, PhD  
City College of New York

2:25 – 2:45 pm  
**Effects of aging on the skeleton**  
Shoshana Yakar, PhD  
New York University

2:45 – 3:05 pm  
**Malignant osteogenesis: Leveraging tumor suppressor deficiency for proteosome-based therapy**  
Bang H. Hoang, MD  
Montefiore Medical Center

3:05 – 3:25 pm  
**How does mechanical loading build bone microstructure: Modeling vs. remodeling?**  
X. Edward Guo, PhD  
Columbia University

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 – 3:55 pm  Introduction
Helen Lu, PhD
Columbia University

3:55 – 4:15 pm  Pseudotime kinetic analysis of inflammation and immune modulatory treatment in soft tissue injuries
Edward A. Botchwey, PhD
Georgia Institute of Technology

4:15 – 4:35 pm  Biomaterials strategies to modulate inflammation for tissue repair
Kam W. Leong, PhD
Columbia University

4:35 – 4:55 pm  Engineering Materials for Immunomodulation in Osteoarthritis
Ankur Singh, PhD
Cornell University

4:55 – 5:15 pm  Immune regulation of tendon regeneration
Alice H. Huang, PhD
Icahn School of Medicine at Mount Sinai

5:15 – 5:20 pm  Discussion / Conclusions

5:20 – 5:30 pm BREAK

Young Investigator Awards and Closing Remarks

5:30 pm  Young Investigator Awards
Chair: Mia M. Thi, PhD

5:55 pm  Closing remarks
Neil J. Cobelli, MD

Reception (Lubin Hall)

6:00 – 7:00 pm  Reception and networking
Arnold and Madaleine Penner
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Thursday, October 3, 2018

Chairs, Co-Chairs, and Speakers

Edward A. 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
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David T. Corr, PhD
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Rensselaer Polytechnic Institute
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Bruce N. 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 T. Feeley, MD
Professor of Orthopaedic Surgery
School of Medicine
University of California, San Francisco, CA

J. Christopher Fritton, PhD
Assistant Professor of Orthopaedics
Rutgers, New Jersey Medical School
New Jersey, NJ

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

X. Edward Guo, PhD
Stanley Dicker Professor of Biomedical Engineering and
Chair of Biomedical Engineering
Columbia University
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Research Assistant Professor of Orthopaedic Surgery
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Pharmacological Sciences
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Lionel B. 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
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Megan L. Killian, PhD
Assistant Professor of Biomedical Engineering
University of Delaware
Newark, DE

Kam W. Leong, PhD
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(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  
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Stony Brook, NY

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Co-Chief Emeritus, Sports Medicine Service  
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Wallace H. Coulter and Presidential Professor of Biomedical Engineering  
Chair of Biomedical Engineering  
The City College of New York  
New York, NY

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

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