Discovery to Delivery in Tendon Research: Team Approaches
ORS Tendon Section 2018 Conference

November 15-17, 2018
Oregon Health and Science University, Portland, Oregon

Conference Chairs: Ronen Schweitzer, PhD; Kathleen Derwin, PhD; Peter Amadio, MD; and Catherine K. Kuo, PhD

Thursday, November 15, 2018

10:00 AM – 2:00 PM Registration

2:00 PM – 2:15 PM Welcome and Meeting Goals

2:15 PM – 3:15 PM Keynote Speaker: Lou Soslowsky, PhD, University of Pennsylvania
Perspectives on the Field of Tendon Research and the Roles of Decorin and Biglycan in Tendon Structure and Function

3:15 PM – 3:30 PM Break

3:30 PM – 7:00 PM

Session I: Tendon Biology
Chair: Hazel Screen, PhD, Queen Mary, University of London
Moderator: Catherine K. Kuo, PhD, University of Rochester

3:30 PM – 4:00 PM
Hazel Screen, PhD, Queen Mary, University of London
The Tendon Interfascicular Matrix Niche

4:00 PM – 4:30 PM
Catherine K. Kuo, PhD, University of Rochester
Embryonically Inspired Tendon Regeneration Approaches

4:30 PM – 4:45 PM Short Talk
Nathaniel Disser, BS, Hospital for Special Surgery
Insulin-like Growth Factor-1 Promotes Tenocyte Proliferation Through ERK1/2 Signal Transduction

4:45 PM – 5:00 PM Short Talk
Joohyun Lim, PhD, Baylor College of Medicine
Loss of Fkbp10 in Murine Tendons and Ligaments Recapitulates Key Features of Bruck Syndrome

5:00 PM – 5:30 PM Break
5:30 PM – 6:00 PM  Michael Kjaer, MD, DMSc, Copenhagen University  
*Physiological Adaptation of Tendon Collagen to Exercise*

6:00 PM – 6:30 PM  Alayna Loiselle, PhD, University of Rochester  
*Defining Cell Lineage, Fate and Function to Inform Tendon Therapeutics*

6:30 PM – 6:45 PM  Short Talk  
Anne E.C. Nichols, PhD, Virginia-Maryland Regional College of Veterinary Medicine  
*Scleraxis Regulates Cytoskeletal Dynamics in Adult Tenocytes*

6:45 PM – 7:00 PM  Short Talk  
Kenneth Weekes, BS, Oregon Health & Science University  
*Temporomandibular Joint Articular Disc: Development Guided Regeneration*

7:00 PM – 9:00 PM  Networking Dinner

**Friday, November 16, 2018**

7:00 AM – 8:00 AM  Networking Breakfast for Hyatt House Portland/Downtown Guests

8:30 AM – 12:00 PM  **Session II: Tendon Development**  
Chair: Jenna Galloway, PhD, Massachusetts General Hospital, Harvard Stem Cell Institute  
Moderator: Ronen Schweitzer, PhD, Shriners Hospital

8:30 AM – 9:00 AM  Jenna Galloway, PhD, Massachusetts General Hospital, Harvard Stem Cell Institute  
*Exploring Tendon Developmental Plasticity and Regeneration in the Zebrafish*

9:00 AM – 9:30 AM  Delphine Duprez, PhD, University Pierre et Marie Curie  
*Mechanical and Molecular Signals Involved in Tendon Formation*

9:30 AM – 9:45 AM  Short Talk  
Deepanwita Pal, PhD, Shriners Hospital for Children  
*Multiple Roles of Scleraxis in Cell Recruitment and Collagen Organization at Distinct Stages of Tendon Growth*

9:45 AM – 10:00 AM  Short Talk  
Dirk Hubmacher, PhD, Icahn School of Medicine at Mt. Sinai  
*Absence of the Extracellular Matrix Protein ADAMTS12, Mutated in Geleophysic Dysplasia, Results in Short Tendons and Reduced Bone Length*

10:00 AM – 10:30 AM  Break

10:30 AM – 11:00 AM  Thomas Schilling, PhD, University of California Irvine  
*Mechanotransduction Regulates Tenocyte-ECM Dynamics in Zebrafish*

11:00 AM – 11:30 AM  Rui Diogo, Howard University  
*Evolutionary Developmental Pathology, or Macroevolutionary Medicine: A New Field of Science Bringing Together Anatomy, Human Evolution, Development, Genetics, Birth Defects and Medicine*
11:30 AM – 11:45 AM   Short Talk
Rulang Jiang, PhD, Cincinnati Children's Hospital Medical Center
*Mkx-deficient Mice Exhibit Hedgehog Signaling Dependent Heterotopic Ossification in the Achilles Tendons*

11:45 AM – 12:00 PM   Short Talk
Hiroshi Asahara, MD, PhD, The Scripps Research Institute
*Mechano-signal Pathway Regulating Tendon and Ligament Via Mkx*

12:00 PM – 1:00 PM   Networking Lunch

1:00 PM – 3:00 PM   **Poster Session**

3:00 PM – 6:30 PM   **Session III: Tendon Injury and Repair**
Chair: Scott Rodeo, MD, Hospital of Special Surgery
Moderator: Kathleen Derwin, PhD, Cleveland Clinic

3:00 PM – 3:30 PM   Chen-Ming Fan, PhD, Carnegie Science
*Molecular and Cellular Complexity of the Patellar Tendon Sheath*

3:30 PM – 3:45 PM   Short Talk
Guak-Kim Tan, PhD, Shriners Hospitals for Children
*TGF-beta Signaling is Essential for Cell Recruitment into Pathological Tendons*

3:45 PM – 4:15 PM   Hani Awad, PhD, University of Rochester
*Differential Transcriptional Regulation in Models of Accelerated Tendon Repair*

4:15 PM – 4:30 PM   Short Talk
Franciele Dietrich-Zagonel, PhD, Linköping University
*Corticosteroid Treatment to Improve Achilles Tendon Healing is Dose and Time Dependent*

4:30 PM – 5:00 PM   Break

5:00 PM – 5:30 PM   Scott Rodeo, MD, Hospital for Special Surgery
*Current Status of Cell-Based Therapies for Augmentation of Tendon Repair*

5:30 PM – 5:45 PM   Short Talk
Hua Shen, PhD, Washington University
*Anti-Inflammatory Effects of Stem Cell-Derived Extracellular Vesicles in the Early Phase of Tendon Healing*

5:45 PM – 6:00 PM   Short Talk
Jessica Ackerman, BS, University of Rochester Medical Center
*S100a4-lineage Cells Lose S100a4 Expression to Become Alpha-SMA+ Myofibroblasts During Scar-mediated Tendon Healing*

6:00 PM – 6:30 PM   Brian Feeley, MD, University California San Francisco
*Stem Cells, Fat, and Muscle Changes after Rotator Cuff Injury and Repair*
6:30 PM – 8:30 PM  Networking Dinner

Saturday, November 17, 2018

7:00 AM – 8:00 AM  Networking Breakfast for Hyatt House Portland/Downtown Guests

8:30 AM – 12:00 PM  **Session IV: Biology and Pathology of the Enthesis**  
Chair: Leesa Galatz, MD, Mount Sinai Health System  
Moderator: Kathleen Derwin, PhD, Cleveland Clinic

8:30 AM – 9:00 AM  Elazar Zelzer, Weizmann Institute of Science  
*Enthesis Progenitors Combine the Tenogenic and Chondrogenic Genetic Programs*

8:30 AM – 12:00 PM  **Session IV: Biology and Pathology of the Enthesis**  
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*Enthesis Progenitors Combine the Tenogenic and Chondrogenic Genetic Programs*

9:00 AM – 9:15 AM  Short Talk  
Amy Merrill, PhD, University of Southern California  
*Patterning Cell Fate at the Interface between Tendon and Bone*

9:15 AM – 9:45 AM  Steve Thomopoulos, PhD, Columbia University  
*Tendon Enthesis Development and Regeneration*

9:45 AM – 10:00 AM  Short Talk  
Marie-Therese Noedl, PhD, Massachusetts General Hospital  
*Zebrafish as a Model of Tendon-Bone Attachment Injury and Regeneration*

10:00 AM – 10:30 AM  Break

10:30 AM – 11:00 AM  Xu Ca, PhD, Johns Hopkins University  
*TGF-β in Skeletal Tissue Homeostasis and Enthesopathy*

11:00 AM – 11:15 AM  Short Talk  
Keshia Mora, BS, University of Rochester  
*Location-dependent Changes in Nuclear Morphology in the Achilles Tendon Due to Ankle Rotation*

11:15 AM – 11:30 AM  Short Talk  
Eva Liu, MD, Brigham and Women's Hospital  
*Impaired 1,25 Dihydroxyvitamin D Action Underlies Enthesopathy Development in Murine Hypophosphatemic Rickets*

11:30 AM – 12:00 PM  Leesa Galatz, MD, Mount Sinai Health System  
*Applying Translational Research to Rotator Cuff Repair: How Science Influences Practice*

12:00 PM – 1:00 PM  Networking Lunch

1:00 PM – 3:00 PM  **Poster Session**

3:00 PM – 6:30 PM  **Session V: Tendinopathy**  
Chair: James Wang, PhD, University of Pittsburgh  
Moderator: Peter Amadio, MD, Mayo Clinic

3:00 PM – 3:30 PM  James Wang, PhD, University of Pittsburgh
The Role of HMGB1 in the Development of Tendinopathy

3:30 PM – 4:00 PM  
Ashlee Watts, DVM, PhD, Texas A&M University  
Matrix Dysregulation in Tendinopathy

4:00 PM – 4:15 PM  
Short Talk  
Adam Abraham, PhD, Columbia University  
IKKβ/NF-κB Activation Drives Rotator Cuff Tendinopathy

4:15 PM – 4:30 PM  
Short Talk  
Zijun Zhang, PhD, MS, Colorado State University  
Expression of Estrogen Receptor and Accumulation of Advanced Glycation End-products in Tendinopathy

4:30 PM – 5:00 PM  
Break

5:00 PM – 5:30 PM  
Vincent Wang, PhD, Virginia Tech  
Assessment of Recombinant Human Hyaluronidase (rHuPH20) as a Novel Therapeutic for Tendinopathy

5:30 PM – 6:00 PM  
Andrew Carr, MDOS, University of Oxford  
Improving Evidence for Tendinopathy Therapies; the role of Randomized Clinical Trials

6:00 PM – 6:15 PM  
Short Talk  
Mary Frances Barbe, PhD, Temple University  
Blocking CTGF/CCN2 Prevents Development of Fibrotic Tendon Changes and Motor Declines in a Rat Model of Repetitive Overuse Injury

6:15 PM – 6:30 PM  
Short Talk  
Karin Gravare Silbernagel, PT, ATC, PhD  
Comparison of Tendon Structure, Symptoms, and Function in Patients with Either Midportion or Insertional Achilles Tendinopathy

6:30 PM – 6:45 PM  
Awards and Closing Remarks

7:00 PM – 9:00 PM  
Networking Dinner

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