

PROGRAM

- 7:30-8:00 am** **Registration and Check-In**
- 8:00-8:10 am** **Opening Ceremony, Welcome & Announcements**
Savio L-Y. Woo, PhD, DSc, Zong-Ming Li, PhD, Marc Safran, MD
- Podium Session 1**
Knee Ligaments: From Injury Mechanisms to Treatment Options
Moderators: Giuliano Cerulli, MD & David Butler, PhD
- 8:10 am** Double Bundle PCL Reconstruction: The Effect of Femoral Tunnel Displacement on Knee Kinematics and In Situ Forces
T Zantop, S Lenschow, A Weimann, W Petersen
- 8:25 am** Sequential Growth Factor Application in BMSC Ligament Engineering
JE Moreau, J Chen, RL Horan, DL Kaplan, GH Altman
- 8:40 am** Anterior Tibial Translation Is Not a Likely Mechanism of Anterior Cruciate Ligament Injury during Non-Contact Sports Situations
AM Chaudhari, CO Dyrby, TP Andriacchi
- 8:55 am** Biomechanical Properties of Bone-Patellar Tendon-Bone Allografts after Treatment with a New Sterilization Method Using Peracetic Acid-Ethanol
S Scheffler, J Scherler, A Pruss, R von Versen, A Weiler
- 9:10 am** The Effect on Remaining Intact Ligaments of Combined ACL/MCL Transection in an Ovine Stifle Joint Model of Osteoarthritis
Y Funakoshi, M Hariu, JE Tapper, LL Marchuk, LD Barclay, CA Sutherland, NG Shrive, CB Frank
- 9:25 am** Microstructure of Calcium Phosphate Hybridized Tendon-Bone Interface: Biological Graft Fixation in ACL Reconstruction
M Sakane, H Mutsuzaki, J Tanaka, Y Miyanaga, N Ochiai

Break and Poster Session 1

- 9:40 - 10:10 am** A Three-Dimensional Biphasic Poroelastic Finite Element Model for the Human Anterior Cruciate Ligament
AF Ali, CB Frank, NG Shrive
- Stretching-Induced Activation of p38 MAPK Regulates α -SMA Expression
G Wang, JH-C Wang
- Initial Cyclic Strain Governs Damage Accumulation in Ligaments In Vitro by a Tissue Hydration Mediated Mechanism
ML Zec, CB Frank, NG Shrive
- Mechanobiology Based Map of Fibrocartilage Metaplasia Reversal Using Correlations between In Vivo Experiments and Anisotropic Porohyperelastic Models
B Haridas, JA Weiss, DL Butler
- Effect of Humeral Rotation on Elbow Valgus Laxity: Cadaveric Study
T Mihata, MR Safran, MH McGarry, M Abe, TQ Lee

Podium Session 2

Special Symposium - Rotator Cuff Injury and Repair **Moderators: Richard Debski, PhD, Evan Flatow, MD**

- 10:10 am** Introduction
- 10:15 am** Rotator Cuff: Why Its Difficult Study - Review of Its Biomechanics
P McMahon, J Stehle
- 10:25 am** Understanding Tendon Damage
E Flatow, VM Wang, L Rajan, M Schaffler
- 10:35 am** Development of an Animal Model of a Chronic Rotator Cuff Tear
LJ Soslowsky, JA Gimbel, GR Williams
- 10:45 am** Biology of Rotator Cuff Tendon-to-Bone Healing
SA Rodeo
- 10:55 am** Biomechanics of Bone to Tendon Healing: Enhancement of Rotator Cuff to Tendon Bone Repair with Periosteum - Biomechanical and Histological Studies
C-H Chen, C-Y Yang, W-J Chen, C-H Shih
- 11:05 am** Biologic Enhancement of Tendon Repair
J Iannotti
- 11:15 am** Discussion
- 11:40 am - 12:30 pm** **Lunch and Poster Viewing**

Podium Session 3

Biology & Biomechanics of Tendons

Moderators: Kai-Nan An, PhD, Per Renström, MD, PhD

- 12:30 pm** Effect of Gap Size on Gliding Resistance after Flexor Profundus Tendon Repair: A Biomechanical Evaluation in Human In Vitro Study
C Zhao, T Tanaka, K Kutsumi, T Tsubone, ME Zobitz, PC Amadio, KN An
- 12:45 pm** The Adaptation of Mouse Tendons to Exercise Are Genotype Specific
VM Wang, CW Tsai, T Banack, HT Wolde-Semait, KJ Jepsen, EL Flatow
- 1:00 pm** A Role of Interleukin-1Beta and Tumor Necrosis Factor-Alpha in Remodeling of the Patellar Tendon after Fibroblast Necrosis
H Tohyama, H Uchida, H Matsumoto, K Yasuda
- 1:15 pm** Orthotropic Hyperelasticity with Two Fiber Families: A Study on the Effect of Fiber Organization on Continuum Mechanical Properties in Soft Tissues
B Haridas, JA Weiss, ES Grood, DL Butler
- 1:30 pm** Collagen Fibril Diameter Distribution does not Reflect Changes in the Mechanical Properties of Stress-Deprived Tendon
M Lavagnino, SP Arnoczky, K Frank, T Tian
- 1:45 pm** Wild Type Titin and a Truncated Isoform are Expressed in Human Tendon Cells: Does Titin Regulate Cell Stiffness?
AJ Banes, J Qi, C Otey, D Bynum, L Almekinders, F Guilak, L Alexopoulos, M Chua, L Chi, X Yang, H Granzier, S Labeit

Break and Poster Session 2

- 2:00** Characterization of mRNA Levels for Matrix Molecules and Proteases in
2:30 pm Ruptured Human Anterior Cruciate Ligaments Utilizing Quantitative Real-Time RT-PCR
DS Bramono, JC Richmond, PP Weitzel, H Chernoff, I Martin, V Volloch, JS Gandhi, DL Kaplan, GH Altman
- Meniscal Changes after Ligament Transection in Ovine Stifle Joints
Y Funakoshi, M Hariu, JE Tapper, LL Marchuk, C Sutherland, NG Shrive, CB Frank
- A New Tibial Coordinate System Improves the Precision of Anterior-Posterior Knee Laxity Measurements: A Cadaveric Study Using Roentgen Stereophotogrammetric Analysis
PJ Roos, CP Neu, ML Hull, SM Howell
- Estimation of Traction Parameters in Mesenchymal Stem Cell-Seeded Type-I Collagen Gels Using an Initial Stress Based Hyperelasticity Approach
B Haridas, V Nirmalanandhan, M Dressler, DL Butler

Podium Session 4 - Part I

Pathophysiology, Tissue Engineering and Other Hot Topics

Moderators: Roland Jakob, MD & Steven Arnoczky, DVM

- 2:30 pm** Apyrase Diminishes the $[CA^{2+}]_{IC}$ Response of Ligament Cells Stretched on a Microgrooved Substrate
BF Jones, ME Wall, L Carroll, S Washburn, AJ Banes
- 2:35 pm** The Effect of Cyclic Tensile Strain on Collagen Synthesis by ACL Fibroblasts In Vitro
E Attia, M Bhargava, JA Hannafin
- 2:40 pm** Advanced Studies in MMP-2 Function and Signal Pathways of ACL Injury
XF Zhou, HS Lee, C Qin, KLP Sung
- 2:45 pm** Discussion
- 2:55 pm** Altered Schwann Cell Function with a Model for Carpal Tunnel Syndrome
K Rowshan, T Chao, P Bui, T Mozaffar, O Steward, R Gupta
- 3:00 pm** Tendon and Nerve Displacement at the Carpal Tunnel during Finger Movements
UC Ugbolue, W-H Hsu, RJ Goitz, Z-M Li
- 3:05 pm** Expression of Matrix Molecules in Joint Capsules from Human Elbow Contractures
KA Hildebrand, M Zhang
- 3:10 pm** Discussion
- 3:20 pm** Analysis of the Anatomy and Function of the Hamstring Muscles: Implications for ACL Reconstruction
Y Makihara, A Nishino, T Fukubayashi, A Kanamori, SL-Y Woo
- 3:25 pm** Measurement of Loads in the Ovine Stifle Joint during In-Vitro Robotic Reproduction of In-Vivo Kinematics
RA Howard, JM Rosvold, JE Tapper, LL Marchuk, JL Ronsky, CB Frank, NG Shrive
- 3:30 pm** In-Vivo Kinematics of the ACL during Weightbearing Knee Flexion
G Li, LE DeFrate
- 3:35 pm** Quantitative Assessment of Glenohumeral Translation in Baseball Players: A Comparison of Pitchers Versus Non Pitching Athletes
JE Tibone, P Sethi, TQ Lee
- 3:40 pm** Discussion

Break & Poster Session 3

- 3:50 pm-** Effects of Contraction Kinetics on Cell Dispersion in Type 1 Collagen Gels
4:20 pm *VS Nirmalanandhan, C Gooch, DL Butler*
- Effect of Foot Position on Knee Muscle Activity While Landing from a Jump
A Kanamori, F Goto, F Kaneko, T Fukubayashi
- Novel Histological Processing Techniques for Morphological Assessment of Normal and Damaged Tendons
VM Wang, D Laudier, CW Tsai, KJ Jepsen, MB Schaffler, EL Flatow
- Effects of Knocking Down Titin Message Level on Cytoskeletal Proteins in Human Tenocytes
J Qi, L Chi, D Bynum, AJ Banes

Podium Session 4 - Part II

Pathophysiology, Tissue Engineering and Other Hot Topics

Moderators: Lars Engebretsen, MD, PhD, & Jennifer Wayne, PhD

- 4:20 pm** Mechanical Load Upregulates ATP Hydrolysis by Human Tendon Cells
M Tsuzaki, D Bynum, L Almekinders, J Faber, AJ Banes
- 4:25 pm** Increased Deposition of Sulphated Glycosaminoglycans in Human Patellar Tendinosis
SC Fu, KM Chan, CG Rolf
- 4:30 pm** The Hypothesis of the “Angiogenetic Tissue Degradation”
W Petersen, T Zantop, R Mentlein, T Pufe
- 4:35 pm** Discussion
- 4:45 pm** In Vivo Mechanical Performance of Cell-Collagen Repairs to be Used for Rabbit Patellar Tendon Repair
N Juncosa, GP Boivin, MT Galloway, C Gooch, JR West, DL Butler
- 4:50 pm** Effect of Prostaglandin E2 on Tendon Repair
P Aspenberg, K Hultman
- 4:55 pm** Oxygen Diffusivity through Natural Extracellular Matrices for Tendon Tissue Engineering
C Androjna, JM Belovich, KA Derwin
- 5:00 pm** Discussion

- 5:10 pm** Is Patient with Anterior Cruciate Ligament Deficient Controlling Toe Out Angle and Knee Rotation during Side-Step Cutting Maneuvers?
K Udagawa, Y Kitsuta, T Nagura, H Matsumoto, Y Toyama
- 5:15 pm** The Effect of Walking Speed on the Stability of the ACL Deficient Knee
T Moraiti, N Stergiou, S Ristanis, AD Georgoulis
- 5:20 pm** In Vivo Analysis of Meniscal and Tibiofemoral Kinematics in Cruciate Ligament-Deficient Knees Using Kinematic Magnetic Resonance Imaging
K-Y Lee, CB Ma, M Safran, JP Slavinsky, E Ozhinsky, CR Allen, S Majumdar
- 5:25 pm** There is an Early Tension Loss in a Tendon ACL Graft that Increases the Anterior Limit of Motion: A Cadaveric Study of Four Tibial Fixation Devices
DM Grover, SM Howell, ML Hull
- 5:30 pm** Discussion
- 5:40-
5:50 pm** **Closing Remarks**
Ejnar Eriksson, MD, & Savio L-Y. Woo, PhD, DSc

Dinner and Award Ceremony
Gold Mountain Restaurant, 644 Broadway St., 415-296-7733

- 6:00-
6:15 pm** Bus transportation provided to restaurant
- 6:30-
7:00 pm** Cash Bar
- 7:00-
9:00 pm** Dinner and award ceremony