

5th Annual Philadelphia Spine Research Symposium

Wednesday, December 9, 2009 - 8:00 am-6:00 pm

BRB II/III Auditorium and Lobby, 421 Curie Blvd., Philadelphia, PA University of Pennsylvania

- 7:45 - 8:30 am Registration with Continental Breakfast
- 8:30 - 8:40 am Keynote Lecture Session: (Moderator Dawn Elliott, University of Pennsylvania)
- 8:40 - 9:40 am *Stuart McGill, University of Waterloo*: “There is No Such Thing as Non-specific Low Back Pain”
- 9:40 - 9:55 am Break

Session 1: Clinical and Translational (Moderators: Edward Vresilovic, Penn State University and Nader Hebel, University of Pennsylvania)

- 9:55 - 10:20 am *Sorin Siegler, Drexel University*: “The Forgotten Danger - Risk of Injury and Protection of the Cervical Spine in American Football and Other High Impact Activities”
- 10:20 - 10:40 am *Neil Malhotra, University of Pennsylvania*: “Instrumentation Biomechanics to Improve Quality and Quantity of Life”
- 10:40 - 10:50 am *Kevin Ong, Exponent*: “Evaluating Off-label Use of BMP in the U.S. Using Administrative Data”
- 10:50 - 11:05 am Break

Session 2: Degeneration (Moderators: Thomas Schaer, University of Pennsylvania and Allyson Ianuzzi, Exponent)

- 11:05 - 11:25 am *Philip Maurer, University of Pennsylvania*: “Diagnosing Degeneration via T1rho MRI and Quantitative Discography Pressure”
- 11:25 - 11:35 am *Renata Skubutyte, Thomas Jefferson University*: “HIF Regulation of ANK (progressive ankylosis) Expression in the Nucleus Pulposus Cells”
- 11:35 - 11:45 am *Christopher Massey, Drexel University*: “Effect of Aging and Degeneration on the Human Intervertebral Disc during the Diurnal Cycle: A Finite Element Study”
- 11:45 - 1:15 pm **Structured Breakout Discussions with Lunch**

Session 3: Regeneration (Moderators: Makarand Risbud, Thomas Jefferson University and Marco Cannella, Drexel University)

- 1:15 - 1:40 pm *Noshir Langrana, Rutgers University*: “Design of DNA Hydrogel to Promote Spinal Cord Regeneration”

- 1:40 - 1:50 pm *Cassie Tran, Thomas Jefferson University: "Regulation and Expression of CCN2/CTGF in the Nucleus Pulposus Cells of the Intervertebral Disc"*
- 1:50 - 2:00 pm *Wei-en Tung, Thomas Jefferson University: "Nucleus Pulposus-derived Sonic Hedgehog Regulates Cell Proliferation and Proteoglycan Synthesis in IVD"*
- 2:00 - 2:20 pm Break

Session 4: Injury (Moderators: Irving Shapiro, Thomas Jefferson University and Garland Fussell, Synthes Spine)

- 2:00 - 2:25 pm *Beth Winkelstein, University of Pennsylvania: "What is Spinal Injury? Considerations for Injury and Pain"*
- 2:25 - 2:35 pm *David Jamison, Drexel University: "Analysis of Mechanical Behavior of the Lumbar Spine under High Impact Loading"*
- 2:35 - 2:45 pm *John Martin, University of Pennsylvania: "Direct Effects of Intervertebral Disc Needle Puncture Injury on Mouse Lumbar and Caudal Motion Segment Mechanical Function"*
- 2:45 - 3:05 pm Break

Session 5: Novel Technology (Moderators: Michele Marcolongo, Drexel University and Ravi Ponnappan, Thomas Jefferson University)

- 3:05 - 3:25 pm *Jennifer Vernengo, Rowan University: "Injectable Bioadhesive Hydrogels for Nucleus Pulposus Replacement and Repair of the Damaged Intervertebral Disc"*
- 3:25 - 3:45 pm *Ari Borathakur, University of Pennsylvania: "Sodium Imaging, Magnetic Transfer, and Other Novel Disc Imaging Technologies"*
- 3:45 - 3:55 pm *Priyanka Shah, Drexel University: "Validation of a Physical Intervertebral Disc Model with Surrogate Endplate Material for Multidirectional Wear and Fatigue Testing of Nucleus Pulposus Replacements"*
- 3:55 - 4:05 pm *Rena Nasser, Thomas Jefferson University: "Reversine Promotes Generation of Skeletal Progenitor Cells from Annulus Fibrosus Cells of the Intervertebral Disc"*
- 4:05 - 4:10 pm *Dawn Elliott* Wrap up
- 4:10 - 6:00 pm **Poster Session with Beer & Wine Reception**

Poster Presentations

1	Joel A. Bauman University of Pennsylvania	An Integrated System to Measure Pressure in the Cervical Facet Joint in Human Cadaver
2	Ryan M. Baxter Drexel University	Potential Predictive Biomarkers for Pain in Revision Total Intervertebral Disc Replacement
3	Ling Dong University of Pennsylvania	Spinal DREAM, a Transcriptional Repressor, is Downregulated after Painful Facet Joint Injury
4	Nandan Nerurkar University of Pennsylvania	Functional Maturation of Engineered Composites that Mimic the Hierarchical Organization of the Intervertebral Disc
5	Kyle P. Quinn University of Pennsylvania	Localizing Mechanical Damage in the Facet Capsule through Vector Correlation of Fiber Alignment
6	Matthew R. Sanborn University of Pennsylvania	Safety and Efficacy of a Novel Ultrasonic Osteotome in an Ovine Model
7	Sumona Sarkar Drexel University	Identification of Biomolecular Changes in Intervertebral Disc Tissue Using Fourier Transform Infrared Spectroscopy
8	Alexander Wright University of Pennsylvania	Three-Dimensional Imaging of Collagen Structures in the Intervertebral Disc by Micro-CT using Radiopaque Contrast Agents
9	Sanjay Yadla Thomas Jefferson University	Cytokine Profile of the Intervertebral Disc from Patients with Degenerative Disc Disease
10	Jonathon H. Yoder University of Pennsylvania	Intervertebral Disc Axial Compression Does Not Alter the T1rho Relaxation Time