



Thomas P. Andriacchi

Professor of Mechanical Engineering and of Orthopaedic Surgery, Emeritus

Bio

BIO

Professor Andriacchi's research focuses on the biomechanics of human locomotion and its biomedical applications to artificial joints, sports injury, osteoarthritis, and neuromuscular disorders. He is the author of more than 200 original papers, more than 500 abstracts and numerous book chapters and is an active member of several national and international societies. He is a past member of the Editorial Board for the Journal of Biomechanics and serves on the Board of Associate Editors for the Journal of Orthopedic Research. Among his honors, Dr. Andriacchi has received the Kappa Delta Award, the highest award of the Orthopedic Research Society and the Borelli Award, the highest award of the American Society of Biomechanics. He is Past President of the American Society of Biomechanics and past Secretary-Treasurer for the Orthopedic Research Society and a former member of its Board of Directors.

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Mechanical Engineering
- Member, Bio-X

HONORS AND AWARDS

- Lifetime Achievement Award, Osteoarthritis Research Society International (2020)
- Kappa Delta Elizabeth Winston Lanier Award, Orthopedic Research Society (2019)
- The O'Donohue Sports Injury Research Award, American Orthopedic Society for Sports Medicine (2016)
- Traveling Scholar Award, ACL Study Group (2014-2015)
- Life-time Achievement Award, International Society for Technology in Arthroplasty (2013)
- Contributions to Osteoarthritis Research, Arthritis Foundation (2012)
- H.R. Lissner Medal, American Society of Mechanical Engineers (2009)
- Lifetime Achievement Award, San Francisco Bay Area Knee Society (2008)
- Fellow of American Society of Mechanical Engineers, American Society of Mechanical Engineers (2007)
- Borelli Award, American Society of Biomechanics (2004)
- Kappa Delta Award, Orthopedic Research Society (2004)
- Mark Coventry Award, Knee Society (2002)
- Excellence in Research Award, American Orthopaedic Society for Sports Medicine (1984)
- Kappa Delta Award, Orthopedic Research Society (1983)

PROFESSIONAL EDUCATION

- Ph.D., University of Illinois Chicago , Mechanical Engineering (1974)

LINKS

- My Lab: <https://web.stanford.edu/group/biomotion/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

The main focus of the research conducted in Professor Andriacchi's Biomotion Laboratory is to apply the study of normal and pathological human movement to the evaluation and treatment of musculoskeletal disease and injury. The Laboratory provides unique information on the relationship between the in vivo pathomechanics of human movement and the mechanisms that influence the initiation and progression of musculoskeletal disease and injury. As such, the Laboratory integrates information from collaborative studies that conduct animal and/or in vitro testing by providing the in vivo perspective on the problem. Specifically, the Laboratory has identified unique ambulatory conditions that are associated with the development of premature osteoarthritis following joint trauma. The Laboratory is using this information as an objective tool to evaluate the efficacy of specific treatments for modifying ambulatory patterns that lead to post-trauma osteoarthritis. Similarly, the association between obesity and premature osteoarthritis is being studied to evaluate the interactions between ambulatory changes , biological changes (from serum biomarkers) and structural changes to cartilage (from MRI) that converge to make obesity the main risk factor for developing osteoarthritis.

This work has had direct translational results producing an inexpensive load modifying intervention in the form of a shoe that has been shown to reduce knee pain in patients with medial compartment osteoarthritis. There is also a major program to develop prevention strategies for reducing the risk for anterior cruciate ligament injury, a common sports injury to the knee. Improved methods for assessing morphological cartilage changes from MR images have been developed and applied to establishing a relationship between mechanical loading during walking and cartilage thickness. Finally, the Laboratory has been a leader in the development of improved methods for the measurement and analysis of human movement. One such improvement is the creation and development of a markerless motion capture system giving the researchers the capacity to analyze human movement without placing markers on the subject.

CLINICAL TRIALS

- Gait Modifications and Cutaneous Stimulation, Not Recruiting
- Obesity and the Initiation of Knee Osteoarthritis, Not Recruiting
- The Design and Evaluation of an Active Intervention for the Prevention of Non-contact ACL Injury, Not Recruiting

Publications

PUBLICATIONS

- **Cartilage Oligomeric Matrix Protein Responses to a Mechanical Stimulus Associate with Ambulatory Loading in Individuals with Anterior Cruciate Ligament Reconstruction.** *Journal of orthopaedic research : official publication of the Orthopaedic Research Society*
Erhart-Hledik, J. C., Titchenal, M. R., Migliore, E., Asay, J. L., Andriacchi, T. P., Chu, C. R.
2021
- **Bridging Disciplines as a pathway to Finding New Solutions for Osteoarthritis a collaborative program presented at the 2019 Orthopaedic Research Society and the Osteoarthritis Research Society International.** *Osteoarthritis and cartilage open*
Andriacchi, T. P., Griffin, T. M., Loeser, R. F., Chu, C. R., Roos, E. M., Hawker, G. A., Erhart-Hledik, J. C., Fischer, A. G.
2020; 2 (1): 100026
- **A Systems View of Risk Factors for Knee Osteoarthritis Reveals Insights into the Pathogenesis of the Disease** *ANNALS OF BIOMEDICAL ENGINEERING*

- Andriacchi, T. P., Favre, J., Erhart-Hledik, J. C., Chu, C. R.
2015; 43 (2): 376-387
- **The Nature of In Vivo Mechanical Signals That Influence Cartilage Health and Progression to Knee Osteoarthritis** *CURRENT RHEUMATOLOGY REPORTS*
Andriacchi, T. P., Favre, J.
2014; 16 (11)
 - **OSTEOARTHRITIS Probing knee OA as a system responding to a stimulus** *NATURE REVIEWS RHEUMATOLOGY*
Andriacchi, T. P.
2012; 8 (7): 371-372
 - **Differences in tibial rotation during walking in ACL reconstructed and healthy contralateral knees** *JOURNAL OF BIOMECHANICS*
Scanlan, S. F., Chaudhari, A. M., Dyrby, C. O., Andriacchi, T. P.
2010; 43 (9): 1817-1822
 - **Gait mechanics influence healthy cartilage morphology and osteoarthritis of the knee.** *journal of bone and joint surgery. American volume*
Andriacchi, T. P., Koo, S., Scanlan, S. F.
2009; 91: 95-101
 - **A framework for the in vivo pathomechanics of osteoarthritis at the knee** *ANNALS OF BIOMEDICAL ENGINEERING*
Andriacchi, T. P., Mundermann, A., Smith, R. L., Alexander, E. J., Dyrby, C. O., Koo, S.
2004; 32 (3): 447-457
 - **Elevated proinflammatory cytokines in response to mechanical stimulus are associated with reduced knee loading 2 years after anterior cruciate ligament reconstruction.** *Clinical biomechanics (Bristol, Avon)*
Fischer, A. G., Titchenal, M. R., Migliore, E., Asay, J. L., Erhart-Hledik, J. C., Andriacchi, T. P.
2024; 116: 106286
 - **CARTILAGE CHANGES POST-MENISCECTOMY ARE ASSOCIATED WITH 2-YEAR POST-OPERATIVE GAIT**
Asay, J. L., Gatti, A. A., Giori, N., Andriacchi, T. P., Gold, G. E.
ELSEVIER SCI LTD.2024: S156
 - **Diverse parameters of ambulatory knee moments differ with medial knee osteoarthritis severity and are combinable into a severity index.** *Frontiers in bioengineering and biotechnology*
Ulrich, B., Erhart-Hledik, J. C., Asay, J. L., Omoumi, P., Andriacchi, T. P., Jolles, B. M., Favre, J.
2023; 11: 1176471
 - **Femoral acetabular impingement labral pathology on MRI is correlated with greater hip flexion and decreased abduction in collegiate water polo players: A pilot study.** *Journal of ISAKOS : joint disorders & orthopaedic sports medicine*
Hall, K. E., Langner, J., Segovia, N., Schultz, B., Andriacchi, T., Gold, G., Safran, M. R.
2022; 7 (1): 7-12
 - **Visualizing PreOsteoarthritis: Integrating MRI UTE-T2* with Mechanics and Biology to Combat Osteoarthritis The 2019 Elizabeth Winston Lanier Kappa Delta Award.** *Journal of orthopaedic research : official publication of the Orthopaedic Research Society*
Chu, C. R., Williams, A. A., Erhart-Hledik, J. C., Titchenal, M. R., Qian, Y., Andriacchi, T. P.
2021
 - **Kinematic Comparison between Medially Congruent and Posterior-Stabilized Third-Generation TKA Designs.** *Journal of functional morphology and kinesiology*
Ghirardelli, S., Asay, J. L., Leonardi, E. A., Amoroso, T., Andriacchi, T. P., Indelli, P. F.
2021; 6 (1)
 - **Vertical Ground Reaction Force 2 Years After Anterior Cruciate Ligament Reconstruction Predicts 10-Year Patient-Reported Outcomes.** *Journal of orthopaedic research : official publication of the Orthopaedic Research Society*
Erhart-Hledik, J. C., Chu, C. R., Asay, J. L., Mahtani, G. B., Andriacchi, T. P.
2021
 - **Longitudinal changes in tibial and femoral cartilage thickness are associated with baseline ambulatory kinetics and cartilage oligomeric matrix protein (COMP) measures in an asymptomatic aging population.** *Osteoarthritis and cartilage*
Erhart-Hledik, J. C., Chehab, E. F., Asay, J. L., Favre, J., Chu, C. R., Andriacchi, T. P.

2021

- **Analyzing Femorotibial Cartilage Thickness Using Anatomically Standardized Maps: Reproducibility and Reference Data.** *Journal of clinical medicine*
Favre, J., Babel, H., Cavinato, A., Blazek, K., Jolles, B. M., Andriacchi, T. P.
2021; 10 (3)
- **Intermittent vibrational stimulation enhances mobility during stair navigation in patients with knee pain.** *Gait & posture*
Fischer, A. G., Erhart-Hledik, J. C., Asay, J. L., Andriacchi, T. P.
2021; 86: 125–31
- **Patient-Reported Outcomes and Knee Mechanics Correlate With Patellofemoral Deep Cartilage UTE-T2* 2 Years After Anterior Cruciate Ligament Reconstruction.** *The American journal of sports medicine*
Williams, A. A., Erhart-Hledik, J. C., Asay, J. L., Mahtani, G. B., Titchenal, M. R., Lutz, A. M., Andriacchi, T. P., Chu, C. R.
2021: 363546520982608
- **New insight on the subchondral bone and cartilage functional unit: Bone mineral density and cartilage thickness are spatially correlated in non-osteoarthritic femoral condyles.** *Osteoarthritis and cartilage open*
Babel, H., Omoumi, P., Andriacchi, T. P., Jolles, B. M., Favre, J.
2020; 2 (3): 100079
- **Utilizing the somatosensory system via vibratory stimulation to mitigate knee pain during walking: Randomized clinical trial.** *Gait & posture*
Fischer, A. G., Erhart-Hledik, J. C., Asay, J. L., Chu, C. R., Andriacchi, T. P.
2020; 80: 37–43
- **TRUNK MOVEMENT PATTERNS ARE ASSOCIATED WITH KNEE FLEXION MOMENT CHANGES WHILE UTILIZING THE SOMATOSENSORY SYSTEM DURING STAIR CLIMBING: CLINICAL TRIAL CROSSOVER STUDY**
Fischer, A. G., Erhart-Hledik, J. C., Asay, J. L., Chu, C. R., Andriacchi, T. P.
ELSEVIER SCI LTD.2020: S234–S235
- **SIDE-TO-SIDE DIFFERENCES IN VERTICAL GROUND REACTION FORCE TWO YEARS AFTER ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION PREDICT LONGITUDINAL CHANGES IN PATIENT-REPORTED OUTCOMES**
Erhart-Hledik, J., Chu, C., Asay, J., Mahtani, G., Andriacchi, T.
ELSEVIER SCI LTD.2020: S225–S226
- **VARIABLE RESPONSES IN PAIN AND FUNCTION 1 MONTH AFTER PLATELET-RICH PLASMA INJECTION ARE RELATED TO CHANGES IN JOINT LOADING DURING GAIT**
Erhart-Hledik, J., Mahtani, G., Asay, J., Burt, H., Nguyen, M., Do, B., Andriacchi, T., Chu, C.
ELSEVIER SCI LTD.2020: S246–S247
- **Changes in Knee Adduction Moment Wearing a Variable-Stiffness Shoe Correlate with Changes in Pain and Mechanically-Stimulated Cartilage Oligomeric Matrix Levels.** *Journal of orthopaedic research : official publication of the Orthopaedic Research Society*
Erhart-Hledik, J. C., Mahtani, G. B., Asay, J. L., Migliore, E. n., Nguyen, M. M., Andriacchi, T. P., Chu, C. R.
2020
- **Longitudinal Changes in the Total Knee Joint Moment After Anterior Cruciate Ligament Reconstruction Correlate With Cartilage Thickness Changes** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Erhart-Hledik, J., Chu, C., Asay, J., Favre, J., Andriacchi, T.
2019; 37 (7): 1546–54
- **Longitudinal changes in the total knee joint moment after anterior cruciate ligament reconstruction correlate with cartilage thickness changes.** *Journal of orthopaedic research : official publication of the Orthopaedic Research Society*
Erhart-Hledik, J. C., Chu, C. R., Asay, J. L., Favre, J., Andriacchi, T. P.
2019
- **ACTIVATING THE SOMATOSENSORY SYSTEM ENHANCES KNEE FLEXION AND QUADRICEPS ACTIVITY DURING GAIT AND STAIR CLIMBING**
Fischer, A. G., Erhart-Hledik, J. C., Asay, J. L., Chu, C. R., Andriacchi, T. P.
ELSEVIER SCI LTD.2019: S63–S64
- **CHANGES IN KNEE ADDUCTION MOMENT WITH A VARIABLE-STIFFNESS SHOE ARE RELATED TO CHANGES IN PAIN AND FUNCTION**
Erhart-Hledik, J., Mahtani, G., Asay, J., Andriacchi, T., Chu, C.

ELSEVIER SCI LTD.2019: S111–S112

- **Changes in stair ascent biomechanics two to eight years after ACL reconstruction are associated with patient-reported outcomes** *GAIT & POSTURE*
Fischer, A. G., Erhart-Hledik, J. C., Chu, C. R., Asay, J. L., Andriacchi, T. P.
2019; 69: 91–95
- **Changes in stair ascent biomechanics two to eight years after ACL reconstruction are associated with patient-reported outcomes.** *Gait & posture*
Fischer, A. G., Erhart-Hledik, J. C., Chu, C. R., Asay, J. L., Andriacchi, T. P.
2019; 69: 91–95
- **Establishing outcome measures in early knee osteoarthritis.** *Nature reviews. Rheumatology*
Emery, C. A., Whittaker, J. L., Mahmoudian, A. n., Lohmander, L. S., Roos, E. M., Bennell, K. L., Toomey, C. M., Reimer, R. A., Thompson, D. n., Ronsky, J. L., Kuntze, G. n., Lloyd, D. G., Andriacchi, et al
2019
- **Modeling knee osteoarthritis pathophysiology using an integrated joint system (IJS): a systematic review of relationships among cartilage thickness, gait mechanics, and subchondral bone mineral density** *OSTEOARTHRITIS AND CARTILAGE*
Edd, S. N., Omoumi, P., Andriacchi, T. P., Jolles, B. M., Favre, J.
2018; 26 (11): 1425–37
- **Activating the somatosensory system enhances net quadriceps moment during gait.** *Journal of biomechanics*
Fischer, A. G., Erhart-Hledik, J. C., Asay, J. L., Chu, C. R., Andriacchi, T. P.
2018
- **Changes in the total knee joint moment in patients with medial compartment knee osteoarthritis over 5 years** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Asay, J. L., Erhart-Hledik, J. C., Andriacchi, T. P.
2018; 36 (9): 2373–79
- **Sensitivity of serum concentration of cartilage biomarkers to 21-days of bed rest** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Liphardt, A., Mundermann, A., Andriacchi, T. P., Achtzehn, S., Heer, M., Mester, J.
2018; 36 (5): 1465–71
- **Longitudinal changes in knee gait mechanics between 2 and 8 years after anterior cruciate ligament reconstruction.** *Journal of orthopaedic research : official publication of the Orthopaedic Research Society*
Erhart-Hledik, J. C., Chu, C. R., Asay, J. L., Andriacchi, T. P.
2018; 36 (5): 1478–86
- **MRI UTE-T2*profile characteristics correlate to walking mechanics and patient reported outcomes 2 years after ACL reconstruction** *OSTEOARTHRITIS AND CARTILAGE*
Williams, A. A., Titchenal, M. R., Andriacchi, T. P., Chu, C. R.
2018; 26 (4): 569–79
- **ACTIVE FEEDBACK GAIT RETRAINING ALTERS FOOT PRESSURE PATTERNS AND REDUCES KNEE ADDUCTION MOMENT IN AN ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTED POPULATION**
Erhart-Hledik, J. C., Mahtani, G. B., Asay, J. L., Chu, C. R., Andriacchi, T. P.
ELSEVIER SCI LTD.2018: S364
- **MECHANICALLY STIMULATED CS846 CORRELATES WITH ULTRASHORT ECHO TIME ENHANCED T2*QUANTITATIVE MRI AND GAIT MECHANICS 2 YEARS AFTER ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION**
Titchenal, M. R., Williams, A. A., Asay, J. L., Migliore, E., Erhart-Hledik, J. C., Andriacchi, T. P., Chu, C. R.
ELSEVIER SCI LTD.2018: S176–S177
- **Cartilage Subsurface Changes to Magnetic Resonance Imaging UTE-T2*2 Years After Anterior Cruciate Ligament Reconstruction Correlate With Walking Mechanics Associated With Knee Osteoarthritis** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Titchenal, M. R., Williams, A. A., Chehab, E. F., Asay, J. L., Dragoo, J. L., Gold, G. E., McAdams, T. R., Andriacchi, T. P., Chu, C. R.
2018; 46 (3): 565–72
- **One year effectiveness of neuromuscular exercise compared with instruction in analgesic use on knee function in patients with early knee osteoarthritis: the EXERPHARMA randomized trial** *OSTEOARTHRITIS AND CARTILAGE*

- Holsgaard-Larsen, A., Christensen, R., Clausen, B., Sondergaard, J., Andriacchi, T. P., Roos, E. M.
2018; 26 (1): 28–33
- **Speed, age, sex, and body mass index provide a rigorous basis for comparing the kinematic and kinetic profiles of the lower extremity during walking.** *Journal of biomechanics*
Chehab, E. F., Andriacchi, T. P., Favre, J.
2017
 - **The effect of instruction in analgesic use compared with neuromuscular exercise on knee-joint load in patients with knee osteoarthritis: a randomized, single-blind, controlled trial** *OSTEOARTHRITIS AND CARTILAGE*
Holsgaard-Larsen, A., Clausen, B., Sondergaard, J., Christensen, R., Andriacchi, T. P., Roos, E. M.
2017; 25 (4): 470-480
 - **Gait mechanics 2 years after anterior cruciate ligament reconstruction are associated with longer-term changes in patient-reported outcomes** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Erhart-Hledik, J. C., Chu, C. R., Asay, J. L., Andriacchi, T. P.
2017; 35 (3): 634-640
 - **Early Changes in Knee Center of Rotation During Walking After Anterior Cruciate Ligament Reconstruction Correlate With Later Changes in Patient-Reported Outcomes** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Titchenal, M. R., Chu, C. R., Erhart-Hledik, J. C., Andriacchi, T. P.
2017; 45 (4): 915-921
 - **Anatomically-standardized maps reveal distinct patterns of cartilage thickness with increasing severity of medial compartment knee osteoarthritis.** *Journal of orthopaedic research*
Favre, J., Erhart-Hledik, J. C., Blazek, K., Fasel, B., Gold, G. E., Andriacchi, T. P.
2017
 - **Effects of active feedback gait retraining to produce a medial weight transfer at the foot in subjects with symptomatic medial knee osteoarthritis.** *Journal of orthopaedic research*
Erhart-Hledik, J. C., Asay, J. L., Clancy, C., Chu, C. R., Andriacchi, T. P.
2017
 - **Altered gait mechanics and elevated serum pro-inflammatory cytokines in asymptomatic patients with MRI evidence of knee cartilage loss.** *Osteoarthritis and cartilage*
Edd, S. N., Favre, J., Blazek, K., Omoumi, P., Asay, J. L., Andriacchi, T. P.
2017
 - **Mechanically stimulated biomarkers signal cartilage changes over 5 years consistent with disease progression in medial knee osteoarthritis patients.** *Journal of orthopaedic research : official publication of the Orthopaedic Research Society*
Chu, C. R., Sheth, S. n., Erhart-Hledik, J. C., Do, B. n., Titchenal, M. R., Andriacchi, T. P.
2017
 - **The Nature of Age-Related Differences in Knee Function during Walking: Implication for the Development of Knee Osteoarthritis** *PLOS ONE*
Boyer, K. A., Andriacchi, T. P.
2016; 11 (12)
 - **Early Changes in Knee Center of Rotation During Walking After Anterior Cruciate Ligament Reconstruction Correlate With Later Changes in Patient-Reported Outcomes.** *American journal of sports medicine*
Titchenal, M. R., Chu, C. R., Erhart-Hledik, J. C., Andriacchi, T. P.
2016
 - **The effect of instruction in analgesic use compared with neuromuscular exercise on knee-joint load in patients with knee osteoarthritis: a randomized, single-blind, controlled trial.** *Osteoarthritis and cartilage*
Holsgaard-Larsen, A., Clausen, B., Søndergaard, J., Christensen, R., Andriacchi, T. P., Roos, E. M.
2016
 - **General scheme to reduce the knee adduction moment by modifying a combination of gait variables.** *Journal of orthopaedic research*
Favre, J., Erhart-Hledik, J. C., Chehab, E. F., Andriacchi, T. P.
2016; 34 (9): 1547-1556

- **Baseline ambulatory knee kinematics are associated with changes in cartilage thickness in osteoarthritic patients over 5 years** *JOURNAL OF BIOMECHANICS*
Favre, J., Erhart-Hledik, J. C., Chehab, E. F., Andriacchi, T. P.
2016; 49 (9): 1859-1864
- **Modification of Knee Flexion Angle Has Patient-Specific Effects on Anterior Cruciate Ligament Injury Risk Factors During Jump Landing** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Favre, J., Clancy, C., Dowling, A. V., Andriacchi, T. P.
2016; 44 (6): 1540-1546
- **Gait mechanics 2 years after anterior cruciate ligament reconstruction are associated with longer-term changes in patient-reported outcomes.** *Journal of orthopaedic research*
Erhart-Hledik, J. C., Chu, C. R., Asay, J. L., Andriacchi, T. P.
2016
- **Cartilage Strain Distributions Are Different Under the Same Load in the Central and Peripheral Tibial Plateau Regions.** *Journal of biomechanical engineering*
Briant, P., Bevill, S., Andriacchi, T.
2015; 137 (12)
- **New insight in the relationship between regional patterns of knee cartilage thickness, osteoarthritis disease severity, and gait mechanics.** *Journal of biomechanics*
Erhart-Hledik, J. C., Favre, J., Andriacchi, T. P.
2015; 48 (14): 3868-3875
- **New insight in the relationship between regional patterns of knee cartilage thickness, osteoarthritis disease severity, and gait mechanics.** *Journal of biomechanics*
Erhart-Hledik, J. C., Favre, J., Andriacchi, T. P.
2015; 48 (14): 3868-75
- **Dance between biology, mechanics, and structure: A systems-based approach to developing osteoarthritis prevention strategies** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Chu, C. R., Andriacchi, T. P.
2015; 33 (7): 939-947
- **The role of inflammation in the initiation of osteoarthritis after meniscal damage** *JOURNAL OF BIOMECHANICS*
Edd, S. N., Giori, N. J., Andriacchi, T. P.
2015; 48 (8): 1420-1426
- **Alterations in Knee Kinematics After Partial Medial Meniscectomy Are Activity Dependent** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Edd, S. N., Netravali, N. A., Favre, J., Giori, N. J., Andriacchi, T. P.
2015; 43 (6): 1399-1407
- **Relationship Between Knee Mechanics and Time Since Injury in ACL-Deficient Knees Without Signs of Osteoarthritis** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Zabala, M. E., Favre, J., Andriacchi, T. P.
2015; 43 (5): 1189-1196
- **Effects of high heel wear and increased weight on the knee during walking.** *Journal of orthopaedic research*
Titchenal, M. R., Asay, J. L., Favre, J., Andriacchi, T. P., Chu, C. R.
2015; 33 (3): 405-411
- **The effect on knee-joint load of instruction in analgesic use compared with neuromuscular exercise in patients with knee osteoarthritis: study protocol for a randomized, single-blind, controlled trial (the EXERPHARMA trial)** *TRIALS*
Clausen, B., Holsgaard-Larsen, A., Sondergaard, J., Christensen, R., Andriacchi, T. P., Roos, E. M.
2014; 15
- **Baseline knee adduction and flexion moments during walking are both associated with 5 year cartilage changes in patients with medial knee osteoarthritis** *OSTEOARTHRITIS AND CARTILAGE*
Chehab, E. F., Favre, J., Erhart-Hledik, J. C., Andriacchi, T. P.
2014; 22 (11): 1833-1839

- **Baseline knee adduction and flexion moments during walking are both associated with 5 year cartilage changes in patients with medial knee osteoarthritis.** *Osteoarthritis and cartilage*
Chehab, E. F., Favre, J., Erhart-Hledik, J. C., Andriacchi, T. P.
2014; 22 (11): 1833-1839
- **Evidence for joint moment asymmetry in healthy populations during gait** *GAIT & POSTURE*
Lathrop-Lambach, R. L., Asay, J. L., Jamison, S. T., Pan, X., Schmitt, L. C., Blazek, K., Siston, R. A., Andriacchi, T. P., Chaudhari, A. M.
2014; 40 (4): 526-531
- **Evidence for joint moment asymmetry in healthy populations during gait.** *Gait & posture*
Lathrop-Lambach, R. L., Asay, J. L., Jamison, S. T., Pan, X., Schmitt, L. C., Blazek, K., Siston, R. A., Andriacchi, T. P., Chaudhari, A. M.
2014; 40 (4): 526-531
- **The Regional Sensitivity of Chondrocyte Gene Expression to Coactive Mechanical Load and Exogenous TNF-alpha Stimuli** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
Bevill, S. L., Boyer, K. A., Andriacchi, T. P.
2014; 136 (9)
- **Camera Networks for Healthcare, Teleimmersion, and Surveillance** *COMPUTER*
Chen, C., Favre, J., Kurillo, G., Andriacchi, T. P., Bajcsy, R., Chellappa, R.
2014; 47 (5): 26-36
- **Response to letter to the editor regarding "Application of principal component analysis in clinical gait research".** *Journal of biomechanics*
Federolf, P., Boyer, K., Andriacchi, T.
2014; 47 (6): 1555-1556
- **Age-related differences in sagittal-plane knee function at heel-strike of walking are increased in osteoarthritic patients.** *Osteoarthritis and cartilage*
Favre, J., Erhart-Hledik, J. C., Andriacchi, T. P.
2014; 22 (3): 464-471
- **Age and Obesity Alter the Relationship Between Femoral Articular Cartilage Thickness and Ambulatory Loads in Individuals Without Osteoarthritis** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Blazek, K., Favre, J., Asay, J., Erhart-Hledik, J., Andriacchi, T.
2014; 32 (3): 394-402
- **Biomechanical analysis of three tennis serve types using a markerless system.** *British journal of sports medicine*
Abrams, G. D., Harris, A. H., Andriacchi, T. P., Safran, M. R.
2014; 48 (4): 339-342
- **Biomechanical analysis of three tennis serve types using a markerless system** *BRITISH JOURNAL OF SPORTS MEDICINE*
Abrams, G. D., Harris, A. H., Andriacchi, T. P., Safran, M. R.
2014; 48 (4)
- **The in vivo relationship between anterior neutral tibial position and loss of knee extension after transtibial ACL reconstruction** *KNEE*
Scanlan, S. F., Donahue, J. P., Andriacchi, T. P.
2014; 21 (1): 74-79
- **The effect on knee-joint load of instruction in analgesic use compared with neuromuscular exercise in patients with knee osteoarthritis: study protocol for a randomized, single-blind, controlled trial (the EXERPHARMA trial).** *Trials*
Clausen, B., Holsgaard-Larsen, A., Søndergaard, J., Christensen, R., Andriacchi, T. P., Roos, E. M.
2014; 15: 444-?
- **Is increased joint loading detrimental to obese patients with knee osteoarthritis? A secondary data analysis from a randomized trial** *OSTEOARTHRITIS AND CARTILAGE*
Henriksen, M., Hunter, D. J., Dam, E. B., Messier, S. P., Andriacchi, T. P., Lohmander, L. S., Aaboe, J., Boesen, M., Gudbergesen, H., Bliddal, H., Christensen, R.
2013; 21 (12): 1865-1875
- **Patterns of Femoral Cartilage Thickness are Different in Asymptomatic and Osteoarthritic Knees and Can be Used to Detect Disease-Related Differences Between Samples** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*

- Favre, J., Scanlan, S. F., Erhart-Hledik, J. C., Blazek, K., Andriacchi, T. P.
2013; 135 (10)
- **Application of principal component analysis in clinical gait research: Identification of systematic differences between healthy and medial knee-osteoarthritic gait** *JOURNAL OF BIOMECHANICS*
Federolf, P. A., BOYER, K. A., Andriacchi, T. P.
2013; 46 (13): 2173-2178
 - **Functional testing provides unique insights into the pathomechanics of femoroacetabular impingement and an objective basis for evaluating treatment outcome** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Rylander, J., Shu, B., Favre, J., Safran, M., Andriacchi, T.
2013; 31 (9): 1461-1468
 - **Adduction moment increases with age in healthy obese individuals** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Blazek, K., Asay, J. L., Erhart-Hledik, J., Andriacchi, T.
2013; 31 (9): 1414-1422
 - **Repeatability of gait analysis for measuring knee osteoarthritis pain in patients with severe chronic pain.** *Journal of orthopaedic research*
Asay, J. L., Boyer, K. A., Andriacchi, T. P.
2013; 31 (7): 1007-1012
 - **The relationship between peak knee extension at heel-strike of walking and the location of thickest femoral cartilage in ACL reconstructed and healthy contralateral knees** *JOURNAL OF BIOMECHANICS*
Scanlan, S. F., Favre, J., Andriacchi, T. P.
2013; 46 (5): 849-854
 - **Valgus Alignment and Lateral Compartment Knee Osteoarthritis: A Biomechanical Paradox or New Insight Into Knee Osteoarthritis?** *ARTHRITIS AND RHEUMATISM*
Andriacchi, T. P.
2013; 65 (2): 310-313
 - **Three-dimensional knee moments of ACL reconstructed and control subjects during gait, stair ascent, and stair descent** *JOURNAL OF BIOMECHANICS*
Zabala, M. E., Favre, J., Scanlan, S. F., Donahue, J., Andriacchi, T. P.
2013; 46 (3): 515-520
 - **A relationship between mechanically-induced changes in serum cartilage oligomeric matrix protein (COMP) and changes in cartilage thickness after 5 years** *OSTEOARTHRITIS AND CARTILAGE*
Erhart-Hledik, J. C., Favre, J., Asay, J. L., Smith, R. L., Giori, N. J., Muendermann, A., Andriacchi, T. P.
2012; 20 (11): 1309-1315
 - **Response to 'Plasma proteins present in osteoarthritic synovial fluid can stimulate cytokine production via Toll-like receptor 4' - authors' reply.** *Arthritis research & therapy*
Sohn, D. H., Sokolove, J., Sharpe, O., Erhart, J. C., Chandra, P. E., Lahey, L. J., Lindstrom, T. M., Hwang, I., Boyer, K. A., Andriacchi, T. P., Robinson, W. H.
2012; 14 (5): 406
 - **Characterization of Thigh and Shank Segment Angular Velocity During Jump Landing Tasks Commonly Used to Evaluate Risk for ACL Injury** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
Dowling, A. V., Favre, J., Andriacchi, T. P.
2012; 134 (9)
 - **Sensitivity of gait parameters to the effects of anti-inflammatory and opioid treatments in knee osteoarthritis patients** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Boyer, K. A., Angst, M. S., Asay, J., Giori, N. J., Andriacchi, T. P.
2012; 30 (7): 1118-1124
 - **Variations in the three-dimensional location and orientation of the ACL in healthy subjects relative to patients after transtibial ACL reconstruction** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Scanlan, S. F., Lai, J., Donahue, J. P., Andriacchi, T. P.
2012; 30 (6): 910-918

- **Kinematic adaptations to a variable stiffness shoe: Mechanisms for reducing joint loading** *JOURNAL OF BIOMECHANICS*
Boyer, K. A., Federolf, P., Lin, C., Nigg, B. M., Andriacchi, T. P.
2012; 45 (9): 1619-1624
- **Inertial Sensor-Based Feedback Can Reduce Key Risk Metrics for Anterior Cruciate Ligament Injury During Jump Landings** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Dowling, A. V., Favre, J., Andriacchi, T. P.
2012; 40 (5): 1075-1083
- **The role of physical activity in changes in walking mechanics with age** *GAIT & POSTURE*
Boyer, K. A., Andriacchi, T. P., Beaupre, G. S.
2012; 36 (1): 149-153
- **Direct comparison of measured and calculated total knee replacement force envelopes during walking in the presence of normal and abnormal gait patterns** *JOURNAL OF BIOMECHANICS*
Lundberg, H. J., Foucher, K. C., Andriacchi, T. P., Wimmer, M. A.
2012; 45 (6): 990-996
- **Effect of variable-stiffness walking shoes on knee adduction moment, pain, and function in subjects with medial compartment knee osteoarthritis after 1 year** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Erhart-Hledik, J. C., Elspas, B., Giori, N. J., Andriacchi, T. P.
2012; 30 (4): 514-521
- **Computational modeling of bone density profiles in response to gait: a subject-specific approach** *BIOMECHANICS AND MODELING IN MECHANOBIOLOGY*
Pang, H., Shiwalkar, A. P., Madormo, C. M., Taylor, R. E., Andriacchi, T. P., Kuhl, E.
2012; 11 (3-4): 379-390
- **A neural network model to predict knee adduction moment during walking based on ground reaction force and anthropometric measurements** *JOURNAL OF BIOMECHANICS*
Favre, J., Hayoz, M., Erhart-Hledik, J. C., Andriacchi, T. P.
2012; 45 (4): 692-698
- **Amplitude and phasing of trunk motion is critical for the efficacy of gait training aimed at reducing ambulatory loads at the knee.** *Journal of biomechanical engineering*
Mündermann, A., Mündermann, L., Andriacchi, T. P.
2012; 134 (1): 011010-?
- **AGING RELATED CHANGES IN THE KINEMATICS OF WALKING: A POTENTIAL PATHWAY TO CHANGES IN CARTILAGE MORPHOLOGY** *ASME Summer Bioengineering Conference (SBC)*
Boyer, K. A., Andriacchi, T. P.
AMER SOC MECHANICAL ENGINEERS.2012: 1069-1070
- **EFFECT OF PARTIAL MEDIAL MENISCECTOMY ON THE INTERACTION BETWEEN PRIMARY AND SECONDARY KNEE MOTION DURING GAIT** *ASME Summer Bioengineering Conference (SBC)*
Edd, S. N., Netravali, N. A., Giori, N. J., Andriacchi, T. P.
AMER SOC MECHANICAL ENGINEERS.2012: 1061-1062
- **VALGUS KNEE ALIGNMENT, NOT STEP WIDTH OR TOE-OUT CAUSE REDUCED KNEE ADDUCTION MOMENT IN THE HEALTHY OBESE** *ASME Summer Bioengineering Conference (SBC)*
Blazek, K., Asay, J., Erhart-Hledik, J., Andriacchi, T.
AMER SOC MECHANICAL ENGINEERS.2012: 235-236
- **Amplitude and Phasing of Trunk Motion is Critical for the Efficacy of Gait Training Aimed at Reducing Ambulatory Loads at the Knee** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
Muendermann, A., Muendermann, L., Andriacchi, T. P.
2012; 134 (1)
- **Plasma proteins present in osteoarthritic synovial fluid can stimulate cytokine production via Toll-like receptor 4** *ARTHRITIS RESEARCH & THERAPY*

- Sohn, D. H., Sokolove, J., Sharpe, O., Erhart, J. C., Chandra, P. E., Lahey, L. J., Lindstrom, T. M., Hwang, I., Boyer, K. A., Andriacchi, T. P., Robinson, W. H.
2012; 14 (1)
- **Kinematics Differences Between the Flat, Kick, and Slice Serves Measured Using a Markerless Motion Capture Method** *ANNALS OF BIOMEDICAL ENGINEERING*
Sheets, A. L., Abrams, G. D., Corazza, S., Safran, M. R., Andriacchi, T. P.
2011; 39 (12): 3011-3020
 - **Maintaining femoral bone density in adults: how many steps per day are enough?** *OSTEOPOROSIS INTERNATIONAL*
Boyer, K. A., Kiratli, B. J., Andriacchi, T. P., Beaupre, G. S.
2011; 22 (12): 2981-2988
 - **Valgus Plus Internal Rotation Moments Increase Anterior Cruciate Ligament Strain More Than Either Alone** *MEDICINE AND SCIENCE IN SPORTS AND EXERCISE*
Shin, C. S., Chaudhari, A. M., Andriacchi, T. P.
2011; 43 (8): 1484-1491
 - **A Wearable System to Assess Risk for Anterior Cruciate Ligament Injury During Jump Landing: Measurements of Temporal Events, Jump Height, and Sagittal Plane Kinematics** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
Dowling, A. V., Favre, J., Andriacchi, T. P.
2011; 133 (7)
 - **Preoperative and Postoperative Sagittal Plane Hip Kinematics in Patients With Femoroacetabular Impingement During Level Walking** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Rylander, J. H., Shu, B., Andriacchi, T. P., Safran, M. R.
2011; 39: 36S-42S
 - **Knee joint kinematics during walking influences the spatial cartilage thickness distribution in the knee** *JOURNAL OF BIOMECHANICS*
Koo, S., Rylander, J. H., Andriacchi, T. P.
2011; 44 (7): 1405-1409
 - **An analysis of the mechanisms for reducing the knee adduction moment during walking using a variable stiffness shoe in subjects with knee osteoarthritis** *JOURNAL OF BIOMECHANICS*
Jenkyn, T. R., Erhart, J. C., Andriacchi, T. P.
2011; 44 (7): 1271-1276
 - **The Effect of Kinematic and Kinetic Changes on Meniscal Strains During Gait** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
Netravali, N. A., Koo, S., Giori, N. J., Andriacchi, T. P.
2011; 133 (1)
 - **Review of tennis serve motion analysis and the biomechanics of three serve types with implications for injury** *SPORTS BIOMECHANICS*
Abrams, G. D., Sheets, A. L., Andriacchi, T. P., Safran, M. R.
2011; 10 (4): 378-390
 - **Changes in In Vivo Knee Loading with a Variable-Stiffness Intervention Shoe Correlate with Changes in the Knee Adduction Moment** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Erhart, J. C., Dyrby, C. O., D'Lima, D. D., Colwell, C. W., Andriacchi, T. P.
2010; 28 (12): 1548-1553
 - **Partial medial meniscectomy and rotational differences at the knee during walking** *JOURNAL OF BIOMECHANICS*
Netravali, N. A., Giori, N. J., Andriacchi, T. P.
2010; 43 (15): 2948-2953
 - **Changes in knee adduction moment, pain, and functionality with a variable-stiffness walking shoe after 6 months.** *Journal of orthopaedic research*
Erhart, J. C., Mündermann, A., Elspas, B., Giori, N. J., Andriacchi, T. P.
2010; 28 (7): 873-879
 - **Changes in Knee Adduction Moment, Pain, and Functionality with a Variable-Stiffness Walking Shoe after 6 Months** *JOURNAL OF ORTHOPAEDIC RESEARCH*

-
- Erhart, J. C., Muendemann, A., Elspas, B., Giori, N. J., Andriacchi, T. P.
2010; 28 (7): 873-879
- **Gait Modification via Verbal Instruction and an Active Feedback System to Reduce Peak Knee Adduction Moment** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
Dowling, A. V., Fisher, D. S., Andriacchi, T. P.
2010; 132 (7)
 - **Gait Changes in Patients With Knee Osteoarthritis Are Replicated by Experimental Knee Pain** *ARTHRITIS CARE & RESEARCH*
Henriksen, M., Graven-Nielsen, T., Aaboe, J., Andriacchi, T. P., Bliddal, H.
2010; 62 (4): 501-509
 - **Automatic Generation of a Subject-Specific Model for Accurate Markerless Motion Capture and Biomechanical Applications** *IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING*
Corazza, S., Gambaretto, E., Muendemann, L., Andriacchi, T. P.
2010; 57 (4): 806-812
 - **Markerless Motion Capture through Visual Hull, Articulated ICP and Subject Specific Model Generation** *INTERNATIONAL JOURNAL OF COMPUTER VISION*
Corazza, S., Muendemann, L., Gambaretto, E., Ferrigno, G., Andriacchi, T. P.
2010; 87 (1-2): 156-169
 - **Shoe-Surface Friction Influences Movement Strategies During a Sidestep Cutting Task Implications for Anterior Cruciate Ligament Injury Risk** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Dowling, A. V., Corazza, S., Chaudhari, A. M., Andriacchi, T. P.
2010; 38 (3): 478-485
 - **Muscle and Joint Function in Human Locomotion** *ANNUAL REVIEW OF BIOMEDICAL ENGINEERING, VOL 12*
Pandy, M. G., Andriacchi, T. P.
2010; 12: 401-433
 - **REDUCTION IN THE KNEE ADDUCTION MOMENT DURING WALKING USING LATERALLY-WEDGED SHOES WITH AND WITHOUT ANKLE SUPPORT** *12th ASME Summer Bioengineering Conference*
Erhart, J., Andriacchi, T.
AMER SOC MECHANICAL ENGINEERS.2010: 307-308
 - **RELATIONSHIP OF KNEE ARTICULAR CARTILAGE THICKNESS TO BODY MASS INDEX AND GAIT MECHANICS** *12th ASME Summer Bioengineering Conference*
Blazek, K., Erhart, J., Asay, J., Andriacchi, T.
AMER SOC MECHANICAL ENGINEERS.2010: 411-412
 - **An Automated Image-Based Method of 3D Subject-Specific Body Segment Parameter Estimation for Kinetic Analyses of Rapid Movements** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
Sheets, A. L., Corazza, S., Andriacchi, T. P.
2010; 132 (1)
 - **Changes in running kinematics and kinetics in response to a rockered shoe intervention** *CLINICAL BIOMECHANICS*
Boyer, K. A., Andriacchi, T. P.
2009; 24 (10): 872-876
 - **Accuracy of 3D Cartilage Models Generated From MR Images Is Dependent on Cartilage Thickness: Laser Scanner Based Validation of In Vivo Cartilage** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
Koo, S., Giori, N. J., Gold, G. E., Dyrby, C. O., Andriacchi, T. P.
2009; 131 (12)
 - **Vibration training intervention to maintain cartilage thickness and serum concentrations of cartilage oligomeric matrix protein (COMP) during immobilization** *OSTEOARTHRITIS AND CARTILAGE*
Liphardt, A., Muendemann, A., Koo, S., Baecker, N., Andriacchi, T. P., Zange, J., Mester, J., Heer, M.
2009; 17 (12): 1598-1603
 - **Change in Serum COMP Concentration Due to Ambulatory Load Is Not Related to Knee OA Status** *JOURNAL OF ORTHOPAEDIC RESEARCH*
-

- Muendermann, A., King, K. B., Smith, L., Andriacchi, T. P.
2009; 27 (11): 1408-1413
- **Graft Orientation Influences the Knee Flexion Moment During Walking in Patients With Anterior Cruciate Ligament Reconstruction** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Scanlan, S. F., Blazek, K., Chaudhari, A. M., Safran, M. R., Andriacchi, T. P.
2009; 37 (11): 2173-2178
 - **Central and peripheral region tibial plateau chondrocytes respond differently to in vitro dynamic compression** *OSTEOARTHRITIS AND CARTILAGE*
Bevill, S. L., Briant, P. L., Levenston, M. E., Andriacchi, T. P.
2009; 17 (8): 980-987
 - **Influence of Patellar Ligament Insertion Angle on Quadriceps Usage during Walking in Anterior Cruciate Ligament Reconstructed Subjects** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Shin, C. S., Chaudhari, A. A., Dyrby, C. O., Andriacchi, T. P.
2009; 27 (6): 730-735
 - **Adaptive Patterns of Movement during Stair Climbing in Patients with Knee Osteoarthritis** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Asay, J. L., Muendermann, A., Andriacchi, T. P.
2009; 27 (3): 325-329
 - **Posturographic analysis through markerless motion capture without ground reaction forces measurement** *JOURNAL OF BIOMECHANICS*
Corazza, S., Andriacchi, T. R.
2009; 42 (3): 370-374
 - **The effect of isolated valgus moments on ACL strain during single-leg landing: A simulation study** *JOURNAL OF BIOMECHANICS*
Shin, C. S., Chaudhari, A. M., Andriacchi, T. P.
2009; 42 (3): 280-285
 - **Gait Mechanics Influence Healthy Cartilage Morphology and Osteoarthritis of the Knee** *Annual Meeting of the American-Academy-of-Orthopaedic-Surgeons/Orthopaedic-Research-Society*
Andriacchi, T. P., Koo, S., Scanlan, S. F.
JOURNAL BONE JOINT SURGERY INC.2009: 95-101
 - **STEP-TO-STEP VARIABILITY IN TIBIOFEMORAL CONTACT FORCE DURING WALKING MEASURED BY AN INSTRUMENTED KNEE IMPLANT** *ASME Summer Bioengineering Conference*
Scanlan, S. F., D'Lima, D. D., Colwell, C. W., Andriacchi, T. P.
AMER SOC MECHANICAL ENGINEERS.2009: 907-908
 - **REDUCTION IN THE MEDIAL COMPARTMENT FORCE CORRELATES WITH THE REDUCTION IN KNEE ADDUCTION MOMENT USING A VARIABLE-STIFFNESS SHOE WITH AN INSTRUMENTED KNEE** *ASME Summer Bioengineering Conference*
Erhart, J. C., Dyrby, C., D'Lima, D. D., Colwell, C. W., Andriacchi, T. P.
AMER SOC MECHANICAL ENGINEERS.2009: 937-938
 - **COMPARISON OF NUMERICALLY MODELED KNEE JOINT CONTACT FORCES TO INSTRUMENTED TOTAL KNEE PROSTHESIS FORCES** *ASME Summer Bioengineering Conference*
Lundberg, H. J., Foucher, K. C., Andriacchi, T. P., Wimmer, M. A.
AMER SOC MECHANICAL ENGINEERS.2009: 379-380
 - **REGIONAL VARIATIONS IN CARTILAGE MECHANICS AND COMPOSITION SUGGEST A SENSITIVITY TO CHANGES IN CHRONIC JOINT LOADING PATTERNS** *ASME Summer Bioengineering Conference*
Bevill, S. L., Andriacchi, T. P.
AMER SOC MECHANICAL ENGINEERS.2009: 279-280
 - **CHANGES IN TIBIOFEMORAL KINEMATICS AND KINETICS DURING STAIR ASCENT AFTER PARTIAL MEDIAL MENISCECTOMY** *ASME Summer Bioengineering Conference*
Netravali, N. A., Andriacchi, T. P.
AMER SOC MECHANICAL ENGINEERS.2009: 813-814
 - **ASSESSING THE APPROPRIATE NUMBER OF DAYS NEEDED TO APPROXIMATE PHYSICAL ACTIVITY LEVEL IN THE ACTIVE ELDERLY** *ASME Summer Bioengineering Conference*

- Rylander, J. H., Boyer, K. A., Andriacchi, T. P., Beaupre, G. S.
AMER SOC MECHANICAL ENGINEERS.2009: 1101–1102
- **A RIGID BODY AND SPRING MODEL OF THE LUMBAR SPINE WHICH CONSIDERS THE MECHANICAL LOADS AT THE BONE-SCREW INTERFACE** *ASME Summer Bioengineering Conference*
Kiryama, Y., Matsumoto, M., Toyama, Y., Andriacchi, T. P., Nagura, T.
AMER SOC MECHANICAL ENGINEERS.2009: 1241–1242
 - **AN AUTOMATED IMAGE-BASED METHOD OF 3D SUBJECT SPECIFIC BODY SEGMENT PARAMETER ESTIMATION** *ASME Summer Bioengineering Conference*
Sheets, A. L., Corazza, S., Andriacchi, T.
AMER SOC MECHANICAL ENGINEERS.2009: 857–858
 - **INTER-SUBJECT VARIABILITY IN GROUND REACTION FORCE - WALKING SPEED RELATIONSHIP IS RELATED TO DIFFERENT MOTION OF THE CENTER OF MASS** *ASME Summer Bioengineering Conference*
Boyer, K., Rylander, J., Andriacchi, T., Beaupre, G.
AMER SOC MECHANICAL ENGINEERS.2009: 31–32
 - **DYNAMIC COMPRESSION IN THE PRESENCE OF TNF-ALPHA DIFFERENTIALLY EFFECTS GENE EXPRESSION IN TIBIAL PLATEAU CARTILAGE COVERED AND UNCOVERED BY THE MENISCUS** *ASME Summer Bioengineering Conference*
Bevill, S. L., Andriacchi, T. P.
AMER SOC MECHANICAL ENGINEERS.2009: 815–816
 - **KINEMATIC DIFFERENCES BETWEEN THE FLAT, KICK AND SLICE SERVES MEASURED USING A MARKERLESS MOTION CAPTURE METHOD** *ASME Summer Bioengineering Conference*
Sheets, A. L., Corazza, S., Abrams, G., Safran, M., Andriacchi, T.
AMER SOC MECHANICAL ENGINEERS.2009: 195–196
 - **INTER-SUBJECT VARIABILITY IN GROUND REACTION FORCE - WALKING SPEED RELATIONSHIP IS RELATED TO DIFFERENT MOTION OF THE CENTER OF MASS** *ASME Summer Bioengineering Conference*
Boyer, K., Rylander, J., Andriacchi, T., Beaupre, G.
AMER SOC MECHANICAL ENGINEERS.2009: 31–32
 - **DYNAMIC COMPRESSION IN THE PRESENCE OF TNF-ALPHA DIFFERENTIALLY EFFECTS GENE EXPRESSION IN TIBIAL PLATEAU CARTILAGE COVERED AND UNCOVERED BY THE MENISCUS** *ASME Summer Bioengineering Conference*
Bevill, S. L., Andriacchi, T. P.
AMER SOC MECHANICAL ENGINEERS.2009: 815–816
 - **KINEMATIC DIFFERENCES BETWEEN THE FLAT, KICK AND SLICE SERVES MEASURED USING A MARKERLESS MOTION CAPTURE METHOD** *ASME Summer Bioengineering Conference*
Sheets, A. L., Corazza, S., Abrams, G., Safran, M., Andriacchi, T.
AMER SOC MECHANICAL ENGINEERS.2009: 195–196
 - **Gender differences exist in the hip joint moments of healthy older walkers** *JOURNAL OF BIOMECHANICS*
Boyer, K. A., Beaupre, G. S., Andriacchi, T. P.
2008; 41 (16): 3360-3365
 - **A comparison of measuring mechanical axis alignment using three-dimensional position capture with skin markers and radiographic measurements in patients with bilateral medial compartment knee osteoarthritis** *KNEE*
Muendemann, A., Dyrby, C. O., Andriacchi, T. P.
2008; 15 (6): 480-485
 - **Predicting changes in knee adduction moment due to load-altering interventions from pressure distribution at the foot in healthy subjects** *JOURNAL OF BIOMECHANICS*
Ehart, J. C., Muendemann, A., Muendemann, L., Andriacchi, T. P.
2008; 41 (14): 2989-2994
 - **In vivo knee loading characteristics during activities of daily living as measured by an instrumented total knee replacement** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Muendemann, A., Dyrby, C. O., D'Lima, D. D., Colwell, C. W., Andriacchi, T. P.
2008; 26 (9): 1167-1172

- **A variable-stiffness shoe lowers the knee adduction moment in subjects with symptoms of medial compartment knee osteoarthritis.** *Journal of biomechanics*
Erhart, J. C., Mündermann, A., Elspas, B., Giori, N. J., Andriacchi, T. P.
2008; 41 (12): 2720-2725
- **Variable-stiffness shoe lowers the knee adduction moment in subjects with symptoms of medial compartment knee osteoarthritis** *JOURNAL OF BIOMECHANICS*
Erhart, J. C., Muendermann, A., Elspas, B., Giori, N. J., Andriacchi, T. P.
2008; 41 (12): 2720-2725
- **Knee kinematics, cartilage morphology, and osteoarthritis after ACL injury** *MEDICINE AND SCIENCE IN SPORTS AND EXERCISE*
Chaudhari, A. M., Briant, P. L., Bevill, S. L., Koo, S., Andriacchi, T. P.
2008; 40 (2): 215-222
- **The knee joint center of rotation is predominantly on the lateral side during normal walking** *JOURNAL OF BIOMECHANICS*
Koo, S., Andriacchi, T. P.
2008; 41 (6): 1269-1273
- **Implications of increased medio-lateral trunk sway for ambulatory mechanics** *JOURNAL OF BIOMECHANICS*
Muendermann, A., Asay, J. L., Muendermann, L., Andriacchi, T. P.
2008; 41 (1): 165-170
- **The patella ligament insertion angle influences quadriceps usage during walking of anterior cruciate ligament deficient patients** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Shin, C. S., Chaudhari, A. M., Dyrby, C. O., Andriacchi, T. P.
2007; 25 (12): 1643-1650
- **Knee and hip loading patterns at different phases in the menstrual cycle - Implications for the gender difference in anterior cruciate ligament injury rates** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Chaudhari, A. M., Lindenfeld, T. N., Andriacchi, T. P., Hewett, T. E., Riccobene, J., Myer, G. D., Noyes, F. R.
2007; 35 (5): 793-800
- **In healthy subjects without knee osteoarthritis, the peak knee adduction moment influences the acute effect of shoe interventions designed to reduce medial compartment knee load** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Fisher, D. S., Dyrby, C. O., Mundermann, A., Morag, E., Andriacchi, T. P.
2007; 25 (4): 540-546
- **Clinical disability in posterior cruciate ligament deficient patients does not relate to knee laxity, but relates to dynamic knee function during stair descending** *KNEE SURGERY SPORTS TRAUMATOLOGY ARTHROSCOPY*
Iwata, S., Suda, Y., Nagura, T., Matsumoto, H., Otani, T., Andriacchi, T. P., Toyama, Y.
2007; 15 (4): 335-342
- **Clinical disability in posterior cruciate ligament deficient patients does not relate to knee laxity, but relates to dynamic knee function during stair descending** *KNEE SURGERY SPORTS TRAUMATOLOGY ARTHROSCOPY*
Iwata, S., Suda, Y., Nagura, T., Matsumoto, H., Otani, T., Andriacchi, T. P., Toyama, Y.
2007; 15 (3): 258-265
- **A comparison of the influence of global functional loads vs. local contact anatomy on articular cartilage thickness at the knee** *JOURNAL OF BIOMECHANICS*
Koo, S., Andriacchi, T. P.
2007; 40 (13): 2961-2966
- **Numerical and experimental analysis of articular chondrocyte deformation: Calibration of a multiscale finite element model** *ASME Summer Bioengineering Conference*
Bevill, S. L., Briant, P. L., Andriacchi, T. P.
AMER SOC MECHANICAL ENGINEERS.2007: 321-322
- **Quantifying variations in collagen matrix deformation in loaded articular cartilage** *ASME Summer Bioengineering Conference*
Briant, P., Bevill, S., Andriacchi, T. P.
AMER SOC MECHANICAL ENGINEERS.2007: 931-932

- **Accurately measuring human movement using articulated ICP with soft-joint constraints and a repository of articulated models** *IEEE Conference on Computer Vision and Pattern Recognition*
Mundermann, L., Corazza, S., Andriacchi, T. P.
IEEE.2007: 2550–2555
- **The influence of deceleration forces on ACL strain during single-leg landing: A simulation study** *JOURNAL OF BIOMECHANICS*
Shin, C. S., Chaudhari, A. M., Andriacchi, T. P.
2007; 40 (5): 1145-1152
- **A framework for the functional identification of joint centers using markerless motion capture, validation for the hip joint** *JOURNAL OF BIOMECHANICS*
Corazza, S., Muendermann, L., Andriacchi, T.
2007; 40 (15): 3510-3515
- **Tibiofemoral joint contact force in deep knee flexion and its consideration in knee osteoarthritis and joint replacement** *JOURNAL OF APPLIED BIOMECHANICS*
Nagura, T., Matsumoto, H., Kiriama, Y., Chaudhari, A., Andriacchi, T. P.
2006; 22 (4): 305-313
- **The role of ambulatory mechanics in the initiation and progression of knee osteoarthritis** *CURRENT OPINION IN RHEUMATOLOGY*
Andriacchi, T. P., Muendermann, A.
2006; 18 (5): 514-518
- **A markerless motion capture system to study musculoskeletal biomechanics: Visual hull and simulated annealing approach** *ANNALS OF BIOMEDICAL ENGINEERING*
Corazza, S., Mundermann, L., Chaudhari, A. M., Demattio, T., Cobelli, C., Andriacchi, T. P.
2006; 34 (6): 1019-1029
- **Comparison of quantitative cartilage measurements acquired on two 3.0T MRI systems from different manufacturers** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
Kornaat, P. R., Koo, S., Andriacchi, T. P., Bloem, J. L., Gold, G. E.
2006; 23 (5): 770-773
- **The evolution of methods for the capture of human movement leading to markerless motion capture for biomechanical applications** *JOURNAL OF NEUROENGINEERING AND REHABILITATION*
Mundermann, L., Corazza, S., Andriacchi, T. P.
2006; 3
- **Comment: effect of fatigue on knee kinetics and kinematics in stop-jump tasks.** *American journal of sports medicine*
Chaudhari, A. M., Andriacchi, T. P.
2006; 34 (2): 312-?
- **The mechanical consequences of dynamic frontal plane limb alignment for non-contact ACL injury** *JOURNAL OF BIOMECHANICS*
Chaudhari, A. M., Andriacchi, T. P.
2006; 39 (2): 330-338
- **Measuring human movement for biomechanical applications using markerless motion capture** *Conference on Three-Dimensional Image Capture and Application VII*
Mundermann, L., Corazza, S., Chaudhari, A. M., Andriacchi, T. P., Sundaresan, A., Chellappa, R.
SPIE-INT SOC OPTICAL ENGINEERING.2006
- **Rotational changes at the knee after ACL injury cause cartilage thinning** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*
Andriacchi, T. P., Briant, P. L., Bevill, S. L., Koo, S.
2006: 39-44
- **Considerations in measuring cartilage thickness using MRI: factors influencing reproducibility and accuracy** *OSTEOARTHRITIS AND CARTILAGE*
Koo, S., Gold, G. E., Andriacchi, T. P.
2005; 13 (9): 782-789

- **Secondary gait changes in patients with medial compartment knee osteoarthritis - Increased load at the ankle, knee, and hip during walking** *ARTHRITIS AND RHEUMATISM*
Mundermann, A., Dyrby, C. O., Andriacchi, T. P.
2005; 52 (9): 2835-2844
- **The influence of slip velocity on wear of total knee arthroplasty** *WEAR*
Schwenke, T., Borgstede, L. L., Schneider, E., Andriacchi, T. P., Wimmer, M. A.
2005; 259: 926-932
- **Sport-dependent variations in arm position during single-limb landing influence knee loading - Implications for anterior cruciate ligament injury** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Chaudhari, A. M., Hearn, B. K., Andriacchi, T. P.
2005; 33 (6): 824-830
- **MR imaging of articular cartilage at 1.5T and 3.0T: Comparison of SPGR and SSFP sequences** *9th World Congress of the OsteoArthritis-Research-Society-International*
Kornaat, P. R., Reeder, S. B., Koo, S., Brittain, J. H., Yu, H., Andriacchi, T. P., Gold, G. E.
ELSEVIER SCI LTD.2005: 338-44
- **Interactions between kinematics and loading during walking for the normal and ACL deficient knee** *JOURNAL OF BIOMECHANICS*
Andriacchi, T. P., Dyrby, C. O.
2005; 38 (2): 293-298
- **Serum concentration of cartilage oligomeric matrix protein (COMP) is sensitive to physiological cyclic loading in healthy adults** *OSTEOARTHRITIS AND CARTILAGE*
Mundermann, A., Dyrby, C. O., Andriacchi, T. P., King, K. B.
2005; 13 (1): 34-38
- **Most favorable camera configuration for a shape-from-silhouette markerless motion capture system for biomechanical analysis** *Conference Videometrics VIII*
Mundermann, L., Corazza, S., Chaudhari, A. M., Alexander, E. J., Andriacchi, T. P.
SPIE-INT SOC OPTICAL ENGINEERING.2005: 278-287
- **Conditions that influence the accuracy of anthropometric parameter estimation for human body segments using shape-from-silhouette** *Conference Videometrics VIII*
Mundermann, L., Mundermann, A., Chaudhari, A. M., Andriacchi, T. P.
SPIE-INT SOC OPTICAL ENGINEERING.2005: 268-277
- **The mechanobiology of articular cartilage development and degeneration** *Carl T Brighton Annual Workshop*
Carter, D. R., Beaupre, G. S., Wong, M., Smith, R. L., Andriacchi, T. P., Schurman, D. J.
SPRINGER.2004: S69-S77
- **Secondary motions of the knee during weight bearing and non-weight bearing activities** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Dyrby, C. O., Andriacchi, T. P.
2004; 22 (4): 794-800
- **Functional evaluation of the Scandinavian Total Ankle Replacement** *FOOT & ANKLE INTERNATIONAL*
Dyrby, C., Chou, L. B., Andriacchi, T. P., Mann, R. A.
2004; 25 (6): 377-381
- **Potential strategies to reduce medial compartment loading in patients with knee osteoarthritis of varying severity - Reduced walking speed** *ARTHRITIS AND RHEUMATISM*
Mundermann, A., Dyrby, C. O., Hurwitz, D. E., Sharma, L., Andriacchi, T. P.
2004; 50 (4): 1172-1178
- **Sensitivity of finite helical axis parameters to temporally varying realistic motion utilizing an idealized knee model** *PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART H-JOURNAL OF ENGINEERING IN MEDICINE*
Johnson, T. S., Andriacchi, T. P., Erdman, A. G.
2004; 218 (H2): 89-100

- **Non-rigid modeling of body segments for improved skeletal motion estimation** *CMES-COMPUTER MODELING IN ENGINEERING & SCIENCES*
Alexander, E. J., Bregler, C., Andriacchi, T. P.
2003; 4 (3-4): 351-364
- **Self-reported giving-way episode during a stepping-down task: Case report of a subject with an ACL-deficient knee - Invited commentary** *JOURNAL OF ORTHOPAEDIC & SPORTS PHYSICAL THERAPY*
Andriacchi, T., Chaudhari, A.
2003; 33 (5): 283-284
- **The use of functional analysis in evaluating knee kinematics** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*
Andriacchi, T. P., Dyrby, C. O., Johnson, T. S.
2003: 44-53
- **A new parametric approach for modeling hip forces during gait** *JOURNAL OF BIOMECHANICS*
Hurwitz, D. E., Foucher, K. C., Andriacchi, T. P.
2003; 36 (1): 113-119
- **Comparison of clinical and dynamic knee function in patients with anterior cruciate ligament deficiency** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Patel, R. R., Hurwitz, D. E., Bush-Joseph, C. A., Bach, B. R., Andriacchi, T. P.
2003; 31 (1): 68-74
- **Risk factors for progressive cartilage loss in the knee: a longitudinal magnetic resonance imaging study in forty-three patients.** *Arthritis and rheumatism*
Biswal, S., Hastie, T., Andriacchi, T. P., Bergman, G. A., Dillingham, M. F., Lang, P.
2002; 46 (11): 2884-2892
- **Backsurface wear and deformation in polyethylene tibial inserts retrieved postmortem** *Annual Meeting of the Knee-Society/Association of Hip-and-Knee-Surgeons*
Surace, M. F., Berzins, A., Urban, R. M., Jacobs, J. J., Berger, R. A., Natarajan, R. N., Andriacchi, T. P., Galante, J. O.
SPRINGER.2002: 14-23
- **Risk factors for progressive cartilage loss in the knee** *ARTHRITIS AND RHEUMATISM*
Biswal, S., Hastie, T., Andriacchi, T. P., Bergman, G. A., Dillingham, M. F., Lang, P.
2002; 46 (11): 2884-2892
- **Coventry Award paper. Backsurface wear and deformation in polyethylene tibial inserts retrieved postmortem.** *Clinical orthopaedics and related research*
Surace, M. F., Berzins, A., Urban, R. M., Jacobs, J. J., Berger, R. A., Natarajan, R. N., Andriacchi, T. P., Galante, J. O.
2002: 14-23
- **Surface damage in machined ram-extruded and net-shape molded retrieved polyethylene tibial inserts of total knee replacements** *JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME*
Berzins, A., Jacobs, J. J., Berger, R., Ed, C., Natarajan, R., Andriacchi, T., Galante, J. O.
2002; 84A (9): 1534-1540
- **Surface damage in machined ram-extruded and net-shape molded retrieved polyethylene tibial inserts of total knee replacements.** *journal of bone and joint surgery. American volume*
Berzins, A., Jacobs, J. J., Berger, R., Ed, C., Natarajan, R., Andriacchi, T., Galante, J. O.
2002; 84-A (9): 1534-1540
- **Mechanical loads at the knee joint during deep flexion** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Nagura, T., Dyrby, C. O., Alexander, E. J., Andriacchi, T. P.
2002; 20 (4): 881-886
- **Increased knee joint loads during walking are present in subjects with knee osteoarthritis** *OSTEOARTHRITIS AND CARTILAGE*
Baliunas, A. J., Hurwitz, D. E., Ryals, A. B., Karrar, A., CASE, J. P., Block, J. A., Andriacchi, T. P.
2002; 10 (7): 573-579
- **Quantitative analysis of the relative effectiveness of 3 iliotibial band stretches** *ARCHIVES OF PHYSICAL MEDICINE AND REHABILITATION*

- Fredericson, M., White, J. J., MacMahon, J. M., Andriacchi, T. P.
2002; 83 (5): 589-592
- **Failure and fatigue characteristics of adhesive athletic tape** *MEDICINE AND SCIENCE IN SPORTS AND EXERCISE*
Bragg, R. W., MacMahon, J. M., Overom, E. K., Yerby, S. A., Matheson, G. O., Carter, D. R., Andriacchi, T. P.
2002; 34 (3): 403-410
 - **The knee adduction moment during gait in subjects with knee osteoarthritis is more closely correlated with static alignment than radiographic disease severity, toe out angle and pain** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Hurwitz, D. E., Ryals, A. B., CASE, J. P., Block, J. A., Andriacchi, T. P.
2002; 20 (1): 101-107
 - **Dynamic function and imaging in the analysis of osteoarthritis at the knee** *Conference on the Many Faces of Osteoarthritis*
Andriacchi, T. P.
BIRKHAUSER VERLAG AG.2002: 443-452
 - **Linking the biology of osteoarthritis to locomotion mechanics** *Conference on the Many Faces of Osteoarthritis*
Thonar, E. J., Hurwitz, D. E., Andriacchi, T. P., Lenz, M. E., Sharma, L.
BIRKHAUSER VERLAG AG.2002: 453-460
 - **Correcting for deformation in skin-based marker systems** *JOURNAL OF BIOMECHANICS*
Alexander, E. J., Andriacchi, T. P.
2001; 34 (3): 355-361
 - **Dynamic function after anterior cruciate ligament reconstruction with autologous patellar tendon** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Bush-Joseph, C. A., Hurwitz, D. E., Patel, R. R., Bahrani, Y., Garretson, R., Bach, B. R., Andriacchi, T. P.
2001; 29 (1): 36-41
 - **Functional gait adaptations in patients with painful hip** *REVUE DE CHIRURGIE ORTHOPEDIQUE ET REPARATRICE DE L APPAREIL MOTEUR*
Hulet, C., Hurwitz, D. E., Andriacchi, T. P., Galante, J. O., Vielpeau, C.
2000; 86 (6): 581-589
 - **Studies of human locomotion: past, present and future** *XVII Congress of the International-Society-of-Biomechanics*
Andriacchi, T. P., Alexander, E. J.
ELSEVIER SCI LTD.2000: 1217-24
 - **Knee pain and joint loading in subjects with osteoarthritis of the knee** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Hurwitz, D. E., Ryals, A. R., Block, J. A., Sharma, L., Schnitzer, T. J., Andriacchi, T. P.
2000; 18 (4): 572-579
 - **Abnormalities in muscle function during gait in relation to the level of lumbar disc herniation** *SPINE*
Morag, E., Hurwitz, D. E., Andriacchi, T. P., Hickey, M., Andersson, G. B.
2000; 25 (7): 829-833
 - **Methodology for long-term wear testing of total knee replacements** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*
Walker, P. S., Blunn, G. W., Perry, J. P., Bell, C. J., Sathasivam, S., Andriacchi, T. P., Paul, J. P., Haider, H., Campbell, P. A.
2000: 290-301
 - **Methods for evaluating the progression of osteoarthritis** *JOURNAL OF REHABILITATION RESEARCH AND DEVELOPMENT*
Andriacchi, T. P., Lang, P. L., Alexander, E. J., Hurwitz, D. E.
2000; 37 (2): 163-170
 - **Characterization of gait parameters in patients with Charcot-Marie-Tooth disease** *NEUROLOGY INDIA*
Kuruvilla, A., Costa, J. L., WRIGHT, R. B., Yoder, D. M., Andriacchi, T. P.
2000; 48 (1): 49-55
 - **Functional adaptations in patients with ACL-deficient knees** *Workshop on the Role of Proprioception and Neuromuscular Control in the Management and Rehabilitation of Joint Pathology*
Andriacchi, T. P., Hurwitz, D. E., Bush-Joseph, C. A., Bach, B. R.

HUMAN KINETICS PUBL.2000: 181-188

- **Dynamic functional joint imaging** *14th International Congress and Exhibition on Computer Assisted Radiology and Surgery (CARS 2000)*
Alexander, E. J., Lang, P. K., Andriacchi, T. P., Steines, D.
ELSEVIER SCIENCE BV.2000: 303-308
- **A functionally based 3-D coordinate system of the knee for diagnostic use and preoperative planning** *14th International Congress and Exhibition on Computer Assisted Radiology and Surgery (CARS 2000)*
MacMahon, J. M., Alexander, E. J., MacMahon, E. B., Andriacchi, T. P.
ELSEVIER SCIENCE BV.2000: 208-213
- **Effect of knee pain on joint loading in patients with osteoarthritis.** *Current opinion in rheumatology*
Hurwitz, D. E., Sharma, L., Andriacchi, T. P.
1999; 11 (5): 422-426
- **Study on effect of graded facetectomy on change in lumbar motion segment torsional flexibility using three-dimensional continuum contact representation for facet joints** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
Natarajan, R. N., Andersson, G. B., Patwardhan, A. G., Andriacchi, T. P.
1999; 121 (2): 215-221
- **A point cluster method for in vivo motion analysis: applied to a study of knee kinematics.** *Journal of biomechanical engineering*
Andriacchi, T. P., Alexander, E. J., Toney, M. K., Dyrby, C., Sum, J.
1998; 120 (6): 743-749
- **Vivo motion analysis: Applied to a study of knee kinematics** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
Andriacchi, T. P., Alexander, E. J., Toney, M. K., Dyrby, C.
1998; 120 (6): 743-749
- **Hip motion and moments during gait relate directly to proximal femoral bone mineral density in patients with hip osteoarthritis** *JOURNAL OF BIOMECHANICS*
Hurwitz, D. E., Foucher, K. C., Sumner, D. R., Andriacchi, T. P., Rosenberg, A. G., Galante, J. O.
1998; 31 (10): 919-925
- **Knee adduction moment, serum hyaluronan level, and disease severity in medial tibiofemoral osteoarthritis** *ARTHRITIS AND RHEUMATISM*
Sharma, L., Hurwitz, D. E., Thonar, E. J., Sum, J. A., Lenz, M. E., Dunlop, D. D., Schnitzer, T. J., Kirwan-Mellis, G., Andriacchi, T. P.
1998; 41 (7): 1233-1240
- **Dynamic knee loads during gait predict proximal tibial bone distribution** *JOURNAL OF BIOMECHANICS*
Hurwitz, D. E., Sumner, D. R., Andriacchi, T. P., Sugar, D. A.
1998; 31 (5): 423-430
- **Functional gait adaptations in patients with anterior cruciate ligament deficiency over time** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*
Wexler, G., Hurwitz, D. E., Bush-Joseph, C. A., Andriacchi, T. P., Bach, B. R.
1998: 166-175
- **Practical and theoretical considerations in the application in the development of clinical gait analysis** *BIO-MEDICAL MATERIALS AND ENGINEERING*
Andriacchi, T. P.
1998; 8 (3-4): 137-143
- **A striated pattern of wear in ultrahigh-molecular-weight polyethylene components of Miller-Galante total knee arthroplasty** *JOURNAL OF ARTHROPLASTY*
Wimmer, M. A., Andriacchi, T. P., Natarajan, R. N., Loos, J., Karlhuber, M., Petermann, J., Schneider, E., Rosenberg, A. G.
1998; 13 (1): 8-16
- **The influence of walking speed on mechanical joint power during gait** *GAIT & POSTURE*
Chen, I. H., Kuo, K. N., Andriacchi, T. P.
1997; 6 (3): 171-176

- **Joint loading with valgus bracing in patients with varus gonarthrosis** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*
Lindenfeld, T. N., Hewett, T. E., Andriacchi, T. P.
1997; 290-297
- **Gait biomechanics and total knee arthroplasty.** *The American journal of knee surgery*
Andriacchi, T. P., Hurwitz, D. E.
1997; 10 (4): 255-260
- **Gait compensations in patients with osteoarthritis of the hip and their relationship to pain and passive hip motion** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Hurwitz, D. E., Hulet, C. H., Andriacchi, T. P., Rosenberg, A. G.
1997; 15 (4): 629-635
- **Gait biomechanics and the evolution of total joint replacement** *GAIT & POSTURE*
Andriacchi, T. P., Hurwitz, D. E.
1997; 5 (3): 256-264
- **Patellofemoral design influences function following total knee arthroplasty** *JOURNAL OF ARTHROPLASTY*
Andriacchi, T. P., Yoder, D., Conley, A., Rosenberg, A., Sum, J., Galante, J. O.
1997; 12 (3): 243-249
- **Tractive forces during rolling motion of the knee: Implications for wear in total knee replacement** *JOURNAL OF BIOMECHANICS*
Wimmer, M. A., Andriacchi, T. P.
1997; 30 (2): 131-137
- **Functional adaptations in patients with ACL-deficient knees.** *Exercise and sport sciences reviews*
Hurwitz, D. E., Andriacchi, T. P., Bush-Joseph, C. A., Bach, B. R.
1997; 25: 1-20
- **Altered load history affects periprosthetic bone loss following cementless total hip arthroplasty** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Bryan, J. M., Sumner, D. R., Hurwitz, D. E., TOMPKINS, G. S., Andriacchi, T. P., Galante, J. O.
1996; 14 (5): 762-768
- **Adaptation to differential loading: Comparison of growth-related changes in cross-sectional properties of the human femur and humerus** *BONE*
Sumner, D. R., Andriacchi, T. P.
1996; 19 (2): 121-126
- **Functional analysis of cemented medial unicompartmental knee arthroplasty** *JOURNAL OF ARTHROPLASTY*
Chassin, E. P., MIKOSZ, R. P., Andriacchi, T. P., Rosenberg, A. G.
1996; 11 (5): 553-559
- **Lower limb alignment and foot angle are related to stance phase knee adduction in normal subjects: A critical analysis of the reliability of gait analysis data** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Andrews, M., Noyes, F. R., Hewett, T. E., Andriacchi, T. P.
1996; 14 (2): 289-295
- **Knee hyperextension gait abnormalities in unstable knees - Recognition and preoperative gait retraining** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Noyes, F. R., Dunworth, L. A., Andriacchi, T. P., Andrews, M., Hewett, T. E.
1996; 24 (1): 35-45
- **CHARACTERIZATION OF GAIT PARAMETERS IN ADULT-ONSET MYOTONIC-DYSTROPHY - ABNORMAL HIP MOTION** *ARCHIVES OF PHYSICAL MEDICINE AND REHABILITATION*
WRIGHT, R. B., Yoder, D. M., Costa, J. L., Andriacchi, T. P.
1995; 76 (1): 33-38
- **DYNAMICS OF KNEE MALALIGNMENT** *ORTHOPEDIC CLINICS OF NORTH AMERICA*
Andriacchi, T. P.
1994; 25 (3): 395-403

- **CHONDROCYTE CELLS RESPOND MECHANICALLY TO COMPRESSIVE LOADS** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Freeman, P. M., Natarajan, R. N., Kimura, J. H., Andriacchi, T. P.
1994; 12 (3): 311-320
- **THE INFLUENCE OF LOAD KNOWLEDGE ON LIFTING TECHNIQUE** *ERGONOMICS*
Butler, D., Andersson, B. J., TRAFIMOW, J., Schipplein, O. D., Andriacchi, T. P.
1993; 36 (12): 1489-1493
- **Functional analysis of pre and post-knee surgery: total knee arthroplasty and ACL reconstruction.** *Journal of biomechanical engineering*
Andriacchi, T. P.
1993; 115 (4B): 575-581
- **STEM CURVATURE AND LOAD ANGLE INFLUENCE THE INITIAL RELATIVE BONE-IMPLANT MOTION OF CEMENTLESS FEMORAL STEMS** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Berzins, A., Sumner, D. R., Andriacchi, T. P., Galante, J. O.
1993; 11 (5): 758-769
- **EFFECT OF PIROXICAM ON GAIT IN PATIENTS WITH OSTEOARTHRITIS OF THE KNEE** *ARTHRITIS AND RHEUMATISM*
Schnitzer, T. J., Popovich, J. M., Andersson, G. B., Andriacchi, T. P.
1993; 36 (9): 1207-1213
- **FUNCTIONAL TESTING IN THE ANTERIOR CRUCIATE LIGAMENT-DEFICIENT KNEE** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*
Andriacchi, T. P., BIRAC, D.
1993: 40-47
- **THE ANTERIOR CRUCIATE LIGAMENT-DEFICIENT KNEE WITH VARUS ALIGNMENT - AN ANALYSIS OF GAIT ADAPTATIONS AND DYNAMIC JOINT LOADINGS** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Noyes, F. R., Schipplein, O. D., Andriacchi, T. P., Saddemi, S. R., Weise, M.
1992; 20 (6): 707-716
- **FORCE DISPLACEMENT CHARACTERISTICS OF THE POSTERIOR CRUCIATE LIGAMENT** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Bach, B. R., DALUGA, D. J., MIKOSZ, R., Andriacchi, T. P., Seidl, R.
1992; 20 (1): 67-72
- **A relationship between stem orientation and function following total hip arthroplasty.** *journal of arthroplasty*
Hodge, W. A., Andriacchi, T. P., Galante, J. O.
1991; 6 (3): 229-235
- **INTERACTION BETWEEN ACTIVE AND PASSIVE KNEE STABILIZERS DURING LEVELWALKING** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Schipplein, O. D., Andriacchi, T. P.
1991; 9 (1): 113-119
- **Gait adaptations by patients who have a deficient anterior cruciate ligament.** *journal of bone and joint surgery. American volume*
BERCHUCK, M., Andriacchi, T. P., Bach, B. R., Reider, B.
1990; 72 (6): 871-877
- **GAIT ADAPTATIONS BY PATIENTS WHO HAVE A DEFICIENT ANTERIOR CRUCIATE LIGAMENT** *JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME*
BERCHUCK, M., Andriacchi, T. P., Bach, B. R., Reider, B.
1990; 72A (6): 871-877
- **THE INFLUENCE OF WALKING MECHANICS AND TIME ON THE RESULTS OF PROXIMAL TIBIAL OSTEOTOMY** *JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME*
Wang, J. W., Kuo, K. N., Andriacchi, T. P., Galante, J. O.
1990; 72A (6): 905-909
- **A functional and radiographic analysis of the total condylar knee arthroplasty.** *journal of arthroplasty*
BRUGIONI, D. J., Andriacchi, T. P., Galante, J. O.
1990; 5 (2): 173-180

- **RELATIONSHIP BETWEEN MOMENTS AT THE L5-S1 LEVEL, HIP AND KNEE-JOINT WHEN LIFTING** *JOURNAL OF BIOMECHANICS*
Schipplein, O. D., TRAFIMOW, J. H., Andersson, G. B., Andriacchi, T. P.
1990; 23 (9): 907-912
- **DYNAMICS OF PATHOLOGICAL MOTION - APPLIED TO THE ANTERIOR CRUCIATE DEFICIENT KNEE** *JOURNAL OF BIOMECHANICS*
Andriacchi, T. P.
1990; 23: 99-105
- **Evaluation of surgical procedures and/or joint implants with gait analysis.** *Instructional course lectures*
Andriacchi, T. P.
1990; 39: 343-350
- **THE INFLUENCE OF CHAIR HEIGHT ON LOWER-LIMB MECHANICS DURING RISING** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Rodosky, M. W., Andriacchi, T. P., Andersson, G. B.
1989; 7 (2): 266-271
- **COMPUTED TOMOGRAPHIC MEASUREMENT OF CORTICAL BONE GEOMETRY** *JOURNAL OF BIOMECHANICS*
Sumner, D. R., Olson, C. L., Freeman, P. M., LOBICK, J. J., Andriacchi, T. P.
1989; 22 (6-7): 649-653
- **RELATIONSHIP BETWEEN DYNAMIC DEFORMITIES AND JOINT MOMENTS IN CHILDREN WITH CEREBRAL-PALSY** *JOURNAL OF PEDIATRIC ORTHOPAEDICS*
Lai, K. A., Kuo, K. N., Andriacchi, T. P.
1988; 8 (6): 690-695
- **PATELLAR COMPONENT FAILURE IN CEMENTLESS TOTAL KNEE ARTHROPLASTY** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*
Rosenberg, A. G., Andriacchi, T. P., Barden, R., Galante, J. O.
1988: 106-114
- **INFLUENCE OF DYNAMIC FACTORS AND EXTERNAL LOADS ON THE MOMENT AT THE LUMBAR SPINE IN LIFTING** *SPINE*
BUSECK, M., Schipplein, O. D., Andersson, G. B., Andriacchi, T. P.
1988; 13 (8): 918-921
- **Biomechanics and gait analysis in total knee replacement.** *Orthopaedic review*
Andriacchi, T. P.
1988; 17 (5): 470-473
- **MODEL ANALYSIS OF FACTORS INFLUENCING THE PREDICTION OF MUSCLE FORCES AT THE KNEE** *JOURNAL OF ORTHOPAEDIC RESEARCH*
MIKOSZ, R. P., Andriacchi, T. P., Andersson, G. B.
1988; 6 (2): 205-214
- **INFLUENCE OF DYNAMIC FACTORS ON THE LUMBAR SPINE MOMENT IN LIFTING** *ERGONOMICS*
BUSHJOSEPH, C., SCHIPPLEIN, O., Andersson, G. B., Andriacchi, T. P.
1988; 31 (2): 211-216
- **DYNAMIC ANALYSES OF LIFTING** *7TH CONGRESS OF THE INTERNATIONAL SOC OF ELECTROPHYSICAL KINESIOLOGY*
Andersson, G. B., Schipplein, O. D., TRAFIMOW, J. H., Andriacchi, T. P.
ELSEVIER SCIENCE PUBL B V.1988: 437-440
- **Retention of the posterior cruciate in total knee arthroplasty.** *journal of arthroplasty*
Andriacchi, T. P., Galante, J. O.
1988; 3: S13-9
- **INTERACTION BETWEEN INTRINSIC KNEE MECHANICS AND THE KNEE EXTENSOR MECHANISM** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Draganich, L. F., Andriacchi, T. P., Andersson, G. B.
1987; 5 (4): 539-547

- **ANALYSIS OF THE MULLER ANTEROLATERAL FEMOROTIBIAL LIGAMENT RECONSTRUCTION USING A COMPUTERIZED KNEE MODEL** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Gibson, M., MIKOSZ, R., Reider, B., Andriacchi, T.
1986; 14 (5): 371-375
- **Knee biomechanics and total knee replacement.** *journal of arthroplasty*
Andriacchi, T. P., STANWYCK, T. S., Galante, J. O.
1986; 1 (3): 211-219
- **Factors influencing walking and stairclimbing following unicompartmental knee arthroplasty.** *journal of arthroplasty*
Weinstein, J. N., Andriacchi, T. P., Galante, J.
1986; 1 (2): 109-115
- **A relationship between gait and clinical changes following high tibial osteotomy.** *journal of bone and joint surgery. American volume*
PRODRAMOS, C. C., Andriacchi, T. P., Galante, J. O.
1985; 67 (8): 1188-1194
- **A RELATIONSHIP BETWEEN GAIT AND CLINICAL CHANGES FOLLOWING HIGH TIBIAL OSTEOTOMY** *JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME*
PRODRAMOS, C. C., Andriacchi, T. P., Galante, J. O.
1985; 67A (8): 1188-1194
- **A study of factors influencing muscle activity about the knee joint.** *Journal of orthopaedic research*
Andriacchi, T. P., Andersson, G. B., Ortengren, R., MIKOSZ, R. P.
1984; 1 (3): 266-275
- **MODEL STUDIES OF THE STIFFNESS CHARACTERISTICS OF THE HUMAN KNEE-JOINT** *JOURNAL OF BIOMECHANICS*
Andriacchi, T. P., MIKOSZ, R. P., HAMPTON, S. J., Galante, J. O.
1983; 16 (1): 23-29
- **THE INFLUENCE OF FEMORAL STEM THICKNESS AND IMPLANTATION TECHNIQUE ON THE STRENGTH OF THE BONE-CEMENT BOND** *ACTA ORTHOPAEDICA SCANDINAVICA*
SAVINO, A. W., Andersson, G. B., Andriacchi, T. P., Hampton, S., Galante, J. O.
1982; 53 (1): 23-27
- **A TECHNIQUE FOR EMBEDDING STRAIN-GAUGES WITHIN CURING BONE-CEMENT** *JOURNAL OF BIOMECHANICS*
Draganich, L. F., Andriacchi, T. P., Galante, J. O.
1982; 15 (10): 789-790
- **THE INFLUENCE OF TOTAL KNEE-REPLACEMENT DESIGN ON WALKING AND STAIR-CLIMBING** *JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME*
Andriacchi, T. P., Galante, J. O., FERMIER, R. W.
1982; 64 (9): 1328-1335
- **THE INFLUENCE OF EARLY WEIGHT-BEARING ON EXPERIMENTAL TOTAL HIP ARTHROPLASTIES IN DOGS** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*
Gitelis, S., Chen, P. Q., Andersson, G. B., Galante, J. O., ROSTOKER, W., Andriacchi, T. P.
1982: 291-302
- **CORRELATIONS BETWEEN CHANGES IN GAIT AND IN CLINICAL STATUS AFTER KNEE ARTHROPLASTY** *ACTA ORTHOPAEDICA SCANDINAVICA*
Andersson, G. B., Andriacchi, T. P., Galante, J. O.
1981; 52 (5): 569-573
- **CHANGES IN THE GAIT PATTERNS OF GROWING CHILDREN** *JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME*
Beck, R. J., Andriacchi, T. P., Kuo, K. N., FERMIER, R. W., Galante, J. O.
1981; 63 (9): 1452-1457
- **3-DIMENSIONAL STRESS-ANALYSIS OF THE FEMORAL STEM OF A TOTAL HIP-PROSTHESIS** *JOURNAL OF BIOMECHANICS*
HAMPTON, S. J., Andriacchi, T. P., Galante, J. O.

1980; 13 (5): 443-448

- **INFLUENCE OF HIP RECONSTRUCTION ON GAIT** *SURGICAL FORUM*
Hodge, W. A., Andriacchi, T. P., Galante, J. O.
1980; 31: 517-519
- **ELECTRONIC MEASUREMENT OF INSTANTANEOUS FOOT-FLOOR CONTACT PATTERNS DURING GAIT** *JOURNAL OF BIOMECHANICS*
Draganich, L. F., Andriacchi, T. P., Strongwater, A. M., Galante, J. O.
1980; 13 (10): 875-880
- **A STUDY OF LOWER-LIMB MECHANICS DURING STAIR-CLIMBING** *JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME*
Andriacchi, T. P., Andersson, G. B., FERMIER, R. W., Stern, D., Galante, J. O.
1980; 62 (5): 749-757
- **3-DIMENSIONAL COORDINATE DATA-PROCESSING IN HUMAN MOTION ANALYSIS** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
Andriacchi, T. P., HAMPTON, S. J., Schultz, A. B., Galante, J. O.
1979; 101 (4): 279-283
- **PROTHESIS CEMENT ENVELOPE IN FEMORAL COMPONENT TOTAL HIPS** *SURGICAL FORUM*
SAVINO, A. W., Andersson, G. B., Andriacchi, T. P., Galante, J. O.
1978; 29: 556-557
- **WALKING SPEED AS A BASIS FOR NORMAL AND ABNORMAL GAIT MEASUREMENTS** *JOURNAL OF BIOMECHANICS*
Andriacchi, T. P., OGLE, J. A., Galante, J. O.
1977; 10 (4): 261-268
- **MILWAUKEE BRACE CORRECTION OF IDIOPATHIC SCOLIOSIS - BIOMECHANICAL ANALYSIS AND A RESTROSPECTIVE STUDY** *JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME*
Andriacchi, T. P., Schultz, A. B., Belytschko, T. B., DeWald, R. L.
1976; 58 (6): 806-815
- **STRESS ANALYSIS OF FEMORAL STEM IN TOTAL HIP PROSTHESES** *JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME*
Andriacchi, T. P., Galante, J. O., Belytschko, T. B., Hampton, S.
1976; 58 (5): 618-624
- **MODEL FOR STUDIES OF MECHANICAL INTERACTIONS BETWEEN HUMAN SPINE AND RIB CAGE** *JOURNAL OF BIOMECHANICS*
Andriacchi, T., Schultz, A., Belytschko, T., Galante, J.
1974; 7 (6): 497-507
- **ANALOG STUDIES OF FORCES IN HUMAN SPINE - COMPUTATIONAL TECHNIQUES** *JOURNAL OF BIOMECHANICS*
Belytschko, T. B., Andriacchi, T. P., Schultz, A. B., Galante, J. O.
1973; 6 (4): 361-371
- **ANALOG STUDIES OF FORCES IN HUMAN SPINE - MECHANICAL PROPERTIES AND MOTION SEGMENT BEHAVIOR** *JOURNAL OF BIOMECHANICS*
Schultz, A. B., Belytschko, T. B., Andriacchi, T. P., Galante, J. O.
1973; 6 (4): 373-383
- **A study of geometrical relationships in scoliotic spines.** *Journal of biomechanics*
Schultz, A. B., LAROCCA, H., Galante, J. O., Andriacchi, T. P.
1972; 5 (4): 409-420
- **STUDY OF GEOMETRICAL RELATIONSHIPS IN SCOLIOTIC SPINES** *JOURNAL OF BIOMECHANICS*
Schultz, A. B., Galante, J. O., Andriacchi, T. P., LAROCCA, H.
1972; 5 (4): 409-?