

Curriculum Vitae

PETER SIMON, Ph.D.

Home: 13215 Sanctuary Cove Dr, #304
Temple Terrace, FL
33637 USA

Work: Foundation for Orthopaedic
Research and Education - FORE
13020 Telecom Pkwy. N.
Tampa, FL, 33637 USA

DOB: 25 November 1983
email: psimon@foreonline.org

tel: 312-509-5761

web: <http://www.foreonline.org/>

date: 3/1/2018

EDUCATION

2007 – 2012

Ph.D. in Biomechanics. Department of Bioengineering, UIC, Chicago, IL.

Doctoral studies with a concentration in Spinal Biomechanics and image-based evaluation of degenerative changes.

Relevant coursework: Computational Biomechanics (FEM), Implant Design, Mechanics of the Human Spine, Biomechanics, Bioinstrumentation, Biostatistics, Applied regression analysis.

Dissertation: *“The relationship between facet joint kinematic parameters and progression of degenerative changes in the human lumbar spine measured in-vivo”*.

2002 – 2007

M.Sc. Biomedical engineering (minor in mechanical engineering). Department of Mechanical Engineering, Technical University of Kosice, Slovakia.

Relevant coursework: Medical Imaging, Biomeasurements, Clinical Orthopaedics, Biophysics, Biomaterials, Kinematic, Multibody dynamic analysis.

Thesis: *“Services and technologies in home ambient intelligence”* under MonAMI – 6th framework program of European Commission.

Spring 2006

EU Student Mobility. Department of Biomedical engineering. Gent Universiteit, Gent, Belgium.

RELEVANT WORK EXPERIENCE

EDUCATION:

May 2016 – now

Assistant Professor (courtesy appointment)
Department of Chemical & Biomedical Engineering, USF, Tampa, FL

Research mentorship to students:

Tia Arvaneh: Ankle OA, morphometry and morphology of human ankle joint (M.S. thesis defended 7/26/2017, PS serves as a Research mentor/co-advisor)

Andrew Khourj: Shoulder arthroplasty explant analysis (Research Assistant B.S. level: 2016-fall 2017, PS serves as a Research mentor)

Sept 2014 – now

Affiliate Assistant Professor (courtesy appointment)
Department of Orthopaedic and Sport Medicine, Morsani School of Medicine, USF, Tampa, FL

Research mentorship to students:

Bradford Bindas: Osteophyte formation in shoulder – clinical and radiographic study (USF, Morsani College of Medicine, First Year Medical Student internship – PS serves as a Research Mentor)

Emilie Song: Humeral head flattening in Osteoarthritis of the shoulder – clinical and radiographic study (USF, Morsani College of Medicine, First Year Medical Student internship – PS serves as a Research Mentor)

Jazmine R. Aira: Image-Based 3D Morphometric Analysis of the Clavicle Intramedullary (IM) Canal (M.S. thesis defended 3/11/2016, PS served as a Principal Research mentor/co-advisor)

Evan Horowitz: CT-OAM Guided Analysis of the Ankle Joint to Assist with Component Placement in Total Ankle Arthroplasty (USF, Morsani College of Medicine, Summer Scholarly Concentrations Program 2016, PS served as a Research mentor)

Shea Taylor: Morphometry of the osteophyte formation on the Humeral Head (USF, Morsani College of Medicine, Summer Scholarly Concentrations Program 2015, PS served as a Research mentor)

Miguel A. Diaz: 6DOF shoulder testing apparatus design (Research Assistant 2013-2014, PS served as a Research mentor)

RESEARCH:

March 2018 – now

Senior Lead Scientist (full-time)

Biomechanics Laboratory & Clinical Research Department. Foundation for Orthopaedic Research and Education, Tampa, FL.

Duties include:

Biomechanics Laboratory:

- experimental design
- develop and execute biomechanical testing protocols
- maintain current knowledge and expertise in the science and techniques of orthopaedic research
- plan and conduct physical and/or computational experiments
- image-based morphological and morphometric analysis of human joints
- analyze and interpret study results
- supervise and manage laboratory personnel
- consult with students, residents, fellows and staff about their projects/designs
- statistical correlations with clinical outcomes
- maintain and update laboratory protocols, standard operating procedures, and quality control/assurance measures

Clinical Research Department:

- experimental design
- maintain accurate records of data
- manage contract research project (primary contact with sponsor, timeline management, deliverables and billing)
- reporting and abstract/manuscript preparation
- scientific literature review (including systematic review and meta-analysis)
- oversee prospective research projects (patient inclusion and consenting, IRB submission, study protocols & outcomes, statistical evaluation and final report drafting)
- budgeting for prospective clinical research studies
- lead, organize and contribute the multicenter study group with focus on Natural History of Osteoarthritis within Society of American Shoulder and Elbow Surgeons (ASES)
- design, oversee and manage research projects of orthopaedic fellows at FOI
- actively seek and obtain industry funding

June 2014 – 2017

Staff Scientist: Basic Science and Clinical Imaging (full-time)

Biomechanics Laboratory. Foundation for Orthopaedic Research and Education, Tampa, FL.

Duties included:

Image-based morphometric and morphologic basic science research:

- experimental design
- morphological and morphometric analysis of human joints
- statistical modeling of the disease progression
- statistical correlations with clinical outcomes

Clinical research projects: - shoulder and elbow fellowship program

- study design
- patient selection
- literature review and meta-analysis
- statistical analysis
- manuscript preparation

2012 – May 2014

Postdoctoral Research Fellow (full-time)

Biomechanics Laboratory. Foundation for Orthopaedic Research and Education, Tampa, FL.

Duties included:

Biomechanical testing of shoulder, ankle, hip joint, cervical and lumbar spine:

- experiment design
- sample preparation: dissection, potting, instrumentation
- load/displacement control of experiment using MTS bionix
- kinematic measurement – Optotrack system

3D image-based modeling of human joints:

- morphological and morphometric analysis of human joints
- spatial characteristics of the position and orientation of the human joint

2008 – 2012

Research Assistant (part-time)

Department of Orthopedic Surgery. Rush University Medical Center, Chicago, IL.

Duties included:

Biomechanical testing of cervical and lumbar spine:

- experiment design
- sample preparation: dissection, potting, instrumentation
- load/displacement control of experiment using servohydraulic system
- kinematic measurement – 3D passive optical motion capture
- intervertebral disc pressure measurement

3D image-based morphology of cervical and lumbar spine:

- spatial position and orientation of vertebral bodies
- facet joint surface curvature measurement
- facet joint subchondral bone density measurement
- vertebral endplate subchondral bone density measurement

Clinical research:

- dynamic/clinical CT and X-ray
- clinical MRI (sequence selection)
- 3D to 3D image registration – volume merge
- MRI based intervertebral disc degeneration *in-vivo/in-vitro* evaluation
- CT based facet joint OA *in-vivo/in-vitro* evaluation

Statistical evaluation

RELEVANT RESEARCH PROJECTS

Projects at Foundation for Orthopaedic Research and Education

Natural History of OA	Leader of the study group at the society of American Shoulder and Elbow Surgeons
OA in arthroplasty	identifying the Factors that Influence Clinical Outcomes in Shoulder Arthroplasty for Glenohumeral Arthritis
RSA diagnosis	Analysis of preoperative diagnosis on clinical outcomes of reverse shoulder arthroplasty – large cohort demographic, radiographic and outcome study
Failed TSA retrieval	Radiographic, intra-operative video and explant analysis of the failure mode in total shoulder arthroplasty
Failed HEMI retrieval	Radiographic, intra-operative video and explant analysis of the failure mode in HEMI shoulder arthroplasty
Tri-Fit brace system	Prospective Trial of the TriFit Web Knee brace: An evaluation of functional improvements and satisfaction in Conservatively-managed patients with knee OA over a 12-month period
EXOS brace system	Prospective, observational clinical investigation of the Exos reformable brace for Conservatively managed distal radius fractures. The evaluation of time to union, satisfaction and convenience
RSA monoblock	Mid-term clinical, functional and radiographic results with the RSA monoblock humeral stem
OA glenoid TSA fit	Analysis of half-step and full-step glenoid TSA component designs options
Implant Fit Analysis	Morphometric and Morphologic Analysis of Pathological Shoulders (~600 patients)-CT based analysis: Humeral Stem: defining fit with short stem total shoulder arthroplasty design (DJO Altivare) Humeral Head: defining fit of humeral head total shoulder arthroplasty design (DJO Altivare) Glenoid Component: defining fit of standard glenoid component (DJO Altivare design)
Total Ankle Arthropl.	Evaluation of bone geometry and morphology for the optimal placement of total ankle arthroplasty – CT based analysis
Glenoid Bone Loss	Analysis of severe glenoid bone loss: outcomes and 2D-3D evaluation of host bone contact
RSA vs. RCR	Decision making between RSA and rotator cuff repair in patients over 65 years old
Humeral fracture	Analysis of treatments for displaced proximal humerus fractures
Instability in RSA	Analysis and classification of instability in RSA
Cyst quantification	Quantification of the cystic formation in the human glenoid – osteoarthritic population
Spinal Kinematics	Defining thresholds for lumbar and cervical instability and mal-alignment using dynamic x-ray
Shoulder retrievals	Analysis of shoulder arthroplasty retrievals: wear, fretting, corrosion
Surgical error	Evaluation of surgical error in shoulder arthroplasty – intraoperative video analysis
Readmission rate	Statistical evaluation of the readmission rate after total hip and knee arthroplasty

RSA-allograft	Long-term analysis of RSA-allograft composite
Radius EXOS bracing	Radiographic Evaluation of Acute Distal Radius Fracture Stability: A Comparative Study Between a Moldable Cast Versus Traditional Fiberglass Casting – x-ray to CT transformation
Shoulder infections	Surgical management of periprosthetic shoulder infections
Revisions of RSA	Analysis of failed RSA: a 12-year review of a single surgeon
Patient/Surgeon factors	Analysis of patient and surgeon specific factors on the outcome of shoulder arthroplasty
Clavicle morphometry	Morphometrical and morphological features of the human clavicle, intramedullary canal and cortex – CT analysis
Humeral morphometry	Morphometrical features of the humeral head, methaphysis and diaphysis of the prox. humerus
Humeral morphology	Evaluation of the mineralization distribution within humeral head, methaphysis and diaphysis of the proximal humerus
Glenoid morphometry	Morphometrical features of the scapula: scapular neck, glenoid inclination, version and tilt
Glenoid morphology	Evaluation of the mineralization distribution within the glenoid fossa
Shoulder Testing Rig	Design and implementation of shoulder testing apparatus

Projects at Rush University

Ph.D. Dissertation	Degenerative changes in human lumbar spine and 3D facet joint kinematics evaluation measured on cohort of healthy and low-back pain subjects –in-vivo experiment validated in-vitro
TDR	Effect of total disc replacement (TDR) on kinematics, especially range of motion, helical axis of motion, and facet joint contact force
Facet Joint Cartilage	3D analysis of lumbar facet joint cartilage thickness distribution – <i>in-vitro</i> method development and validation
Hip Stability	Effect of surgical techniques on hip stability – <i>in-vitro</i> measurement
Cervical Laminoplasty	Biomechanical Evaluation of Basket-Shaped Titanium Implant for Cervical Laminoplasty – evaluation using sawbone
Cervical Fusion	Different cervical fixation techniques evaluation – <i>in-vitro</i> evaluation of Oc-C2, C2-C6 types of fusion

RELEVANT PUBLICATIONS

Allert JW, Sellers T, **Simon P**, Christmas KN, Patel S, Frankle MA. “Massive Rotator Cuff tears Without Arthritis in Patients Older than 65: Cuff Repair of Reverse?” J Int. Ortho. (in review)

Lorenzetti A, Streit JJ, Cabezas AF, Christmas KN, LaMartina II J, **Simon P**, Frankle MA. “Bone Graft Augmentation for Severe Glenoid Bone Loss in Primary Reverse Total Shoulder Arthroplasty: Outcomes and Evaluation of Host Bone Contact by 2D/3D Image Registration.” *J Bone and Joint Surg. OA* 2017. doi: 10.2106/JBJS.OA.17.00015

LaMartina II J, Christmas KN, **Simon P**, Streit JJ, Allert JW, Clark J, Otto RJ, Abdelfattah A, Mighell MA, Frankle MA. "Difficulty in decision-making in the treatment of displaced proximal humerus fractures: the effect of uncertainty on surgical outcomes." *J Shoulder Elbow Surg.* 2018 Mar;27(3):470-477. PubMed PMID: 29433645

Abdelfattah A, Otto RJ, **Simon P**, Christmas KN, Tanner G, LaMartina II J, Levy JC, Cuff DJ, Mighell MA, Frankle MA. "Classification of Instability after Reverse Shoulder Arthroplasty Guides Surgical Management and Outcomes." *J Shoulder Elbow Surg.* 2017 Nov 23; [Epub ahead of print]. PubMed PMID: 29175353

Tanner G, **Simon P**, Sellers T, Christmas KN, Otto RJ, Cuff DJ, Abdelfattah A, Mighell MA, Frankle MA. "Total Shoulder Arthroplasty after 5-years follow up: Does cystic disease of the glenoid increase risk of failure?" *J Shoulder Elbow Surg.* 2017 Dec 20; [Epub ahead of print]. PubMed PMID: 29273386

Simon P, Streit JJ, Santoni BG, Mighell MA, Frankle MA. "Quantitative Videographic Analysis of Intra-Operative TSA Surgeries Is Predictive of Radiographic Implant Loosening." *J Shoulder Elbow Surg.* - open access. doi: 10.1016/j.jses.2017.11.001

Simon P, Diaz M, Cusick MC, Santoni BG, Frankle MA. "3D Image-Based Morphometric Analysis of the Scapular Neck Length in Subjects Undergoing Reverse Shoulder Arthroplasty." *Clin. Anat.* 2018 Jan;31(1):43-55. PubMed PMID: 28514491

Santoni B, Aira J, Diaz M, Stoops K, **Simon P**. "Radiographic evaluation of acute distal radius fracture stability: A comparative cadaveric study between a thermo-formable bracing system and traditional fiberglass casting." *Clin Biomech.* 2017 May 19; (47)20-26. PubMed PMID: 28554053

Stone GP, Clark RE, O'Brien KC, Vaccaro L, **Simon P**, Lorenzetti AJ, Stephens BC, Frankle MA. "Surgical management of peroprosthetic shoulder infections." *J Shoulder Elbow Surg.* 2017 Jul;26(7):1222-1229. PubMed PMID: 28162880

Aira JR, **Simon P**, Gutiérrez S, Santoni BG, Frankle MA. "Morphometry of the human clavicle and intramedullary canal: A 3D, geometry-based quantification." *J Orthop Res.* 2017 Oct;35(10):2191-2202. PubMed PMID: 28150886

Clark JC, **Simon P**, Clark RE, Christmas KN, Allert JW, Streit JJ, Mighell MA, Hess A, Stone J, Frankle MA. "The influence of patient- and surgeon-specific factors on operative duration and early postoperative outcomes in shoulder arthroplasty." *J Shoulder Elbow Surg.* 2017 Jun;26(6):1011-1016. PubMed PMID: 28139387

Stephens BC, **Simon P**, Clark RE, Christmas KN, Stone GP, Lorenzetti AJ, Frankle MA. "Revision for a failed reverse: a 12-year review of a lateralized implant." *J Shoulder Elbow Surg.* 2016 May;25(5):e115-24]. PubMed PMID: 26704360

Tannenbaum RS, Navarro R, Virani N, Stephens B, King J, Lorenzetti A, **Simon P**, Clark R, Stone GP, Fischer M, Green A, Frankle MA. "Measurement of Resource Utilization for Total and Reverse Shoulder Arthroplasty." *Am J Orthop (Belle Mead NJ).* 2015 Oct;44(10):446-51. PubMed PMID: 26447404

Simon P, Gupta A, Hussey M, Pappou I, Santoni BG, Inoue N, Frankle MA. "The Relationship Between the Subchondral Bone Density Distribution and Glenoid Depth: An In Vivo Study of Male Total Shoulder Arthroplasty Patients." *J. of Shoulder & Elbow Surg.* 2015 Mar; 24(3):416-24. PubMed PMID: 25240512

Hussey MM, Steen BM, Cusick MC, Cox JL, Marberry ST, **Simon P**, Cottrell BJ, Santoni BG, Frankle MA. "The Effects Of Glenoid Wear Patterns On Patients With Osteoarthritis in Total Shoulder Arthroplasty: An Assessment Of Outcomes And Value" *J Shoulder Elbow Surg.* 2015 May; 24(5):682-90. PubMed PMID: 25487904

Bayne CO, Stanley R, **Simon P**, Espinoza-Orias A, Salata MJ, Bush-Joseph CA, Inoue N, Nho SJ. "Effect of capsulotomy on hip stability-a consideration during hip arthroscopy." *American Journal of orthopaedics.* 2014 Apr; 43(4):160-5. PubMed PMID:24730000

Simon P, Espinoza Orías AA, Andersson GBJ, An HS, Inoue N. In vivo topographic analysis of lumbar facet joint space width distribution in healthy and symptomatic subjects. *Spine*, 2012 May; 37(12):1058-64 (**Invited article**). PubMed PMID: 22433501

Takigawa T, **Simon P**, Espinoza Orías AA, Hong JT, Inoue N, An HS. Biomechanical Comparison of Occiput-C1-C2 Fixation Techniques: Occiput C1 transarticular screw and Direct Occiput Condyle screw. *Spine*, 2012 May; 37(12):E696-701. PubMed PMID: 22158063

Hong JT, Takigawa T, Udayakumar R, Shin HK, **Simon P**, Espinoza Orías AA, Inoue N, An HS. Biomechanical effect of the C2 laminar decortication on the stability of C2 intralaminar screw construct and biomechanical comparison of C2 23 intralaminar screw and C2 pars screw. *Neurosurgery*. 2011 Sep; 69 Suppl Operative: ons1-7. PubMed PMID: 21415794.

CONFERENCES

Presentations and posters during the tenure at Foundation for Orthopaedic Research and Education:

American Academy of Orthopaedic Surgeons, Annual Meeting, New Orleans, LA, March 06-10, 2018.

Cox J, Dermarkarian P, Christmas K, **Simon P**, Abdelfattah A, Mighel M, Frankle MA. "Clinical outcomes following reverse shoulder arthroplasty-allograft composite for the revision of failed arthroplasty associated with proximal humeral bone deficiency: two- to 15-year follow up." *Accepted as Podium Presentation*.

American Society for Shoulder and Elbow Surgeon: Closed Meeting, New Orleans, LA, October 10-14, 2017

Abdelfattah A, **Simon P**, Christmas KN, Tanner G, LaMartina II J, Otto RJ, Levy JC, Cuff DJ, Mighell MA, Frankle MA. "Classification of Instability after Reverse Shoulder Arthroplasty Guides Surgical Management and Outcomes." *Accepted as a Poster Presentation*.

LaMartina II J, Christmas KN, **Simon P**, Streit JJ, Allert J, Clark J, Otto RJ, Mighell MA, Frankle MA. "Difficulty in decision-making in the treatment of displaced proximal humerus fractures: the effect of uncertainty on surgical outcomes." *Accepted as a Poster Presentation*.

Cox J, Dermarkarian P, Christmas K, **Simon P**, Abdelfattah A, Mighel M, Frankle MA. "Clinical outcomes following reverse shoulder arthroplasty-allograft composite for the revision of failed arthroplasty associated with proximal humeral bone deficiency: two- to 15-year follow up." *Accepted as a Poster Presentation*.

Summer Biomechanics, Bioengineering and Biotransport Conf., Tucson, AZ, June 21-24, 2017.

Arvaneh T, Lee W, Sanders R, **Simon P**. "Morphometric analysis of the human ankle joint." *Accepted as Podium and Poster Presentation (Selected as the Finalist in MS. Level competition)*.

International Society for the Advancement of Spine Surgery, Annual Meeting, Boca Raton, FL, April 12-14, 2017.

Chang S, Kelly B, Santoni B, **Simon P**, Wade C. "Measurement Performance of a Vertebral Motion Analysis System in Evaluating Segmental Cervical Motion." *Accepted as Podium Presentation*.

American Academy of Orthopaedic Surgeons, Annual Meeting, San Diego, CA, March 14-18, 2017.

Cabezas A, **Simon P**, Clark R, Lorenzetti A, Frankle M, Streit J. "Bone Graft Augmentation for Severe Glenoid Bone Loss in Primary Reverse Total Shoulder Arthroplasty: Outcomes and Evaluation of Host Bone Contact by 2-Dimensional/3-Dimensional Image Registration." *Accepted as Podium Presentation*.

American Society for Shoulder and Elbow Surgeon: Closed Meeting, Boston, MA, October 7-9, 2015

Streit J, Cabezas A, **Simon P**, Clark R, Lorenzetti A, Mighell M, Frankle M. "Bone Graft Augmentation for Severe Glenoid Bone Loss in Primary Reverse Total Shoulder Arthroplasty: Outcomes and Evaluation of Host Bone Contact by 2-Dimensional/3-Dimensional Image Registration." *Accepted as Podium Presentation*.

American Academy of Orthopaedic Surgeons, Annual Meeting, Orlando, FL, March 1-5, 2016.

Stephens B, **Simon P**, Clark R, Vaccaro L, Lorenzetti A, Stone G, Frankle M. "Revision Reverse Arthroplasty (RSA): A 12 year Review of a Lateralized Implant" *Accepted as Podium Presentation*.

American Society for Shoulder and Elbow Surgeon: Specialty Day, Orlando, FL, March 5, 2016

Cabezas A, **Simon P**, Lorenzetti A, Krebs K, Santoni B, Frankle M. "2D/3D image registration to determine host bone coverage of glenoid side RSA implant." *Accepted as Podium Presentation* (Charles S. Neer Award nominee).

Stone G, Clark R, O'Brien K, Vaccaro L, Tannenbaum R, Cottrell B, Stephens B, Lorenzetti A, **Simon P**, Frankle M. "Periprosthetic shoulder infection: one-stage better than two-stage?" *Accepted as Podium Presentation* (Charles S. Neer Award nominee).

Simon P, Aira J, Gutierrez S, Santoni B, Frankle M, "Image-Based 3D Morphometric Analysis of the Clavicle Intramedullary Canal." *Accepted as Podium Presentation*.

Summer Biomechanics, Bioengineering and Biotransport Conf., Snowbird, Utah, June 17-20, 2015.

Keimel j, Krebs K, Cabezas A, Lorenzetti A, Santoni B, Frankle M, **Simon P**. "2D/3D registration to find host bone coverage of RSA implants." *Accepted as a Poster Presentation*.

Taylor S, Santoni B, Frankle M, **Simon P**. "3D quantification of osteophyte distribution on the humeral head." *Accepted as a Podium Presentation*.

Aira J, Gutierrez S, Santoni B, Frankle M, **Simon P**. "Image-based 3D morphometric analysis of the clavicle intramedullary canal in male population." *Accepted as a Poster Presentation*. (2nd Place in Master competition).

American Academy of Orthopaedic Surgeons, Annual Meeting, New Orleans, LA, March 11-15, 2014.

Simon P, Diaz M, Schwartz D, Santoni BG, Frankle MA. "Scapular Neck Length Measurement and Distribution in the Reverse Shoulder Arthroplasty (RSA) Patient Population." *Accepted as a Podium Presentation*.

American Society for Shoulder and Elbow Surgeon: Specialty Day, New Orleans, LA, March 11-15, 2014 [Neer Award Nominee]

Simon P, Gupta A, Pappau I, Hussey M, Santoni BG, Inoue N, Frankle MA. "The relationships between the Subchondral Bone Density Distribution and glenoid depth: An in-vivo pilot study of male Total Shoulder Arthroplasty Subjects." *Accepted as a Podium Presentation*.

International Society for Technology in Arthroplasty 26th Annual Meeting, Palm Beach, FL October 16-19, 2013

Simon P, Diaz M, Schwartz D, Cabezas A, Santoni BG, Frankle MA. "Scapular Neck Length Measurement and Distribution in the Reverse Shoulder Arthroplasty (RSA) Patient Population." *Accepted as a Podium Presentation*.

Simon P, Virani N, Diaz M, Tuesink M, Santoni BG, Frankle MA. "Glenoid Subchondral Bone Density Distribution in Male Total Shoulder Arthroplasty (TSA) Subjects." *Accepted as a Poster Presentation*.

Presentations and posters during the tenure at Rush University:

ORS 2013 Annual Meeting, San Antonio, TX January 26-29, 2013

Simon P, Espinoza Orias, A, An HS, Andersson GBJ, Inoue N. A Kinematic Model to Describe Segmental Lumbar Facet Joint Motion. *Accepted as a Podium Presentation*.

Pan, C, **Simon P**, Espinoza Orias, A, Ryota T, An HS, Andersson GBJ, Inoue N. Low-back Pain Patients Exhibit Higher Subchondral Bone Density Distributions in Lumbar Facet Joint. *Accepted as a Podium Presentation*.

American Society of Mechanical Engineers, 2012 Summer Bioengineering Conference, Fajardo, Puerto Rico, June 20-23, 2012

Kim L, **Simon P**, Andersson GBJ, An HS, Inoue N., Espinoza Orías AA. Non-contact experimental Assessment of Spinal Facet Joint Cartilage Dehydration. *Accepted as a Poster Presentation.*

International Society for the Study of the Lumbar Spine 38th Annual Meeting, SpineWeek Amsterdam May 28-June 1st, 2012

Ishihara Y, **Simon P**, Espinoza Orías AA, Andersson GBJ, An HS, Inoue N. Lumbar Facet Joint Centroids as a Function of Spinal Level and Age. *Accepted as a Poster Presentation.*

Ishihara Y, Espinoza Orías AA, **Simon P**, An HS, Andersson GBJ, Sugisaki K, Inoue N. In Vivo Measurement of Morphological Changes in the Human Lumbar Spine Pedicle. *Accepted as a Poster Presentation.*

ORS 2012 Annual Meeting, San Francisco February 4-7, 2012

Simon P, Espinoza Orías AA, An HS, Andersson GBJ, Inoue N. 3D Facet Joint Space Width Distribution: Comparison with Age, Level and Lower Back Pain Symptoms. *Accepted as a Poster Presentation.*

Ishihara Y, Espinoza Orías AA, An HS, Andersson GBJ, Sugisaki K, **Simon P**, Inoue N. Age-related Changes in Pedicle Morphology: Correlation with Lumbar Canal Diameter. *Accepted as a Poster Presentation.*

Intl. Society for Hip Arthroscopy Annual Scientific Meeting, Paris, France, October 14-15, 2011

Bayne C, Stanley RA, **Simon P**, Espinoza Orías AA, Inoue N, Nho SJ. The Effect of Capsulotomy and Capsulectomy On Hip Stability. *Accepted as a Podium Presentation.*

North American Spine Society Annual Meeting, Chicago, IL November 2-5, 2011

Simon P, Espinoza Orías AA, An HS, Andersson GBJ, Inoue N. 3D Facet Joint Gap Decrease in Distribution Patterns is Age-Dependent. *Accepted as an Electronic Poster (ePoster) with Best Poster Presentation time.*

American Society of Mechanical Engineers, 2011 Summer Bioengineering Conference, Nemaquin Woodlands Resort, Farmington, Pennsylvania, USA, June 22-25, 2011

Ishihara Y, Espinoza Orías AA, **Simon P**, An HS, Andersson GBJ, Inoue N. In- Vivo Three-Dimensional Analysis of the Facet Joint Surface Center SBC2011- 53659. *Trans. ASME Summer Bioengineering Conference.*

Simon P, Espinoza Orías AA, Kotwal N, Parrish T, An HS, Andersson GBJ, Sumner DR, Inoue N. 3D Analysis of Lumbar Spine Facet Joint Cartilage Thickness Distribution SBC2011-53894. *Trans. ASME Summer Bioengineering Conference.*

International Society for the Study of the Lumbar Spine 37th Annual Meeting, Gothenburg, Sweden. June 14-18, 2011

Simon P, Espinoza Orías AA, An HS, Andersson GBJ, Inoue N. In Vivo Topographic Analysis of Lumbar Facet Joint Space Width Distribution in Healthy and Symptomatic Subjects. *Proceedings from the ISSLS 2011 Annual Meeting.*

Orthopaedic Research Society 57th Annual Meeting, Long Beach, CA, Jan 13-16, 2011

Takigawa T, **Simon P**, Espinoza Orías AA, Hong JT, Ito Y, Inoue N, An HS. Biomechanical Analysis of Novel Occiput-C1-C2 Fixation Techniques. *Transactions Vol. 36, Long Beach, CA, 2011:745*

2010 Cervical Spine Society Annual Meeting. Charlotte, NC, December 2-4, 2010.

Takigawa T, **Simon P**, Espinoza Orías AA, Hong JT, Ito Y, Inoue N, An HS. Biomechanical Comparison of Occiput-C1-C2 Fixation Techniques: C0-C1 Transarticular Screw and Direct Occipital Condyle Screw. Winner of the 2nd place in the Resident/Fellow Award Competition. *Proceedings of the 38th Annual Meeting of the CSRS.*

American Society of Mechanical Engineers, 2010 Summer Bioengineering Conference, Grande Beach Resort, Naples, FL, June 16-19, 2010

Takigawa T, Espinoza Orias AA, An HS, **Simon P**, Sugisaki K, Natarajan RN, Wimmer MA, Andersson GBJ, Inoue N. Lumbar Spine Capsule Strain After Total Disc Replacement. SBC2010-19023. *Trans ASME Summer Bioengineering Conference*.

BOOK CHAPTERS

Lorenzetti A, Stone G, **Simon P**, Frankle M: "Instructional Course Lectures, Volume 65, Shoulder and Elbow, Biomechanics of Reverse Shoulder Arthroplasty: Current Concepts." *American Academy of Orthopaedic Surgeons*, 2016

Gutiérrez S, Pappou I, Aira J, **Simon P**, Frankle M: "Biomechanics of the Clavicle." *Clavicle Injuries*, Jan 2018

PEER-REVIEW JOURNAL REVIEWER

Journal of Orthopaedic Trauma

Journal of Shoulder and Elbow Surgery

AWARDS AND HONORS

October 2016 **Member** of American Shoulder and Elbow Surgeons (ASES) specialty society
- Natural History of Arthritis Study Group Leader

March 2016 **Charles S. Neer Award Nomination:** ASES Closed Meeting, Orlando, FL

March 2016 **Charles S. Neer Award Nomination:** ASES Closed Meeting, Orlando, FL

March 2014 **Charles S. Neer Award Nomination:** ASES Closed Meeting, New Orleans, LA

June 2011 **Outstanding paper.** International Society for the Study of the Lumbar Spine (ISSLS), Gothenburg, Sweden. Accepted abstract invited to the manuscript submission and further publication in June, 2012 ISSLS special societal issue.

REFERENCES

Brandon G. Santoni, Ph.D.

Director of Research
Foundation for Ortho. Research & Education
Tampa, FL
Telephone: 813-910-3662
Email: bsantoni@foreonline.org

Mark A. Frankle, MD.

Director of the Biomechanical Shoulder and
Elbow Research Lab
USF/Florida Orthopaedic Institute, Tampa, FL
Telephone: 813-558-6840
Email: mfrankle@floridaortho.com

Dr. Nozomu Inoue, MD, Ph.D.

Ph.D. advisor, Professor and Director
Spine Biomechanics Lab
Rush University Medical Center, Chicago, IL
Telephone: +1-312-942-8151
Email: Nozomu_Inoue@rush.edu

Dr. Richard L. Magin, Ph.D.

Academic advisor, Professor of Bioengineering
Department of Bioengineering
University of Illinois at Chicago, Chicago, IL
Telephone: 312-413-5528
Email: rmagin@uic.edu