

**CURRICULUM VITAE
MARY KENT HASTINGS, PT, DPT, MSCI, ATC**

PRESENT POSITION: Associate Professor, Program in Physical Therapy and Orthopaedic Surgery, Washington University School of Medicine

EDUCATION:

<u>Degree</u>	<u>Institution</u>	<u>Field</u>	<u>Date(s)</u>
BS	University of Illinois Champaign/Urbana, IL	Kinesiology	1990
	Virginia Polytechnic Institute Blacksburg, VA	Exercise Physiology	1990-91
MS	Washington University St. Louis, MO	Physical Therapy	1993
DPT	Washington University St. Louis, MO	Physical Therapy	2002
MS	Washington University St. Louis, MO	Clinical Investigation	2011

ACADEMIC POSITIONS / EMPLOYMENT:

<u>Position</u>	<u>Institution/Facility</u>	<u>Date(s)</u>
Associate Professor	Washington University School of Medicine Program in Physical Therapy and Orthopaedic Surgery St. Louis, MO	2012-present
Assistant Professor	Washington University School of Medicine Program in Physical Therapy and Orthopaedic Surgery St. Louis, MO	2005-2012
Instructor	Washington University School of Medicine Program in Physical Therapy St. Louis, MO	1999-2004
Laboratory Teaching Assistant	Washington University Program in Physical Therapy St. Louis, MO	1994-1999
Staff Physical Therapist	Barnes-Jewish Hospital St. Louis, MO	1994-1999
High School Athletic Trainer	Health South Rehabilitation St. Louis, MO	1991-1993

Graduate Assistant-Athletic Trainer **Virginia Polytechnic Institute** 1990-1991
Blackburg, VA

UNIVERSITY AND HOSPITAL APPOINTMENTS AND COMMITTEES:

Program in Physical Therapy Committees

Clinical Practice Advisory Council
Member 2007-2010

Research Advisory Council 2004-present
Member

Faculty Recruitment Committee 2004-2005

Committee on Academic Evaluation of Student (CAES) Committee
Member 1999-2010

Admissions Committee
Professional Curriculum 2003-present
1997-1998

LICENSURE/REGISTRATION:

Missouri Board of Registration for the Healing Arts
Physical therapist license number: PT 104981 1994-present
Athletic training registration number: TR 101230 1991-present

HONORS AND AWARDS:

Roger A. Mann Award for the Outstanding Clinical Study presented at the 2013
American Orthopaedic Foot and Ankle Society annual meeting.
Kinetics and Kinematics after the Bridle Procedure for Treatment of Traumatic Foot Drop.
Hastings Mary K, Sinacore David R, Woodburn Jim, Paxton E Scott, Klein Sandra E,
McCormick Jeremy J, Bohnert Kathryn L, Beckert Krista S, Stein Michelle L, Strube Michael
J, Johnson Jeffrey E.

Hobson Abstract Award at the Diabetic Limb Salvage Conference 2012
1st Place: Progressive Foot Deformity Evident in Neuropathic (Charcot)
Arthropathy at One and Two Years. Hastings Mary K., Johnson Jeffrey E.,
Strube Michael J., Hildebolt Charles F., Bohnert Kathryn L., Prior Fred W.,
Sinacore David R.

2nd Place: “Volumetric Analysis of Intrinsic Muscle Atrophy in the Diabetic
Neuropathic Foot.” Cheuy Victor A., Commean Paul K., Hastings Mary K.,
Mueller Michael J.

ERRIS (Enhancing Rehabilitation Research in the South) Grant Writing Workshop 2011

Program in Physical Therapy Graduation Speaker 2007

Washington University School of Medicine
Title: "The Exams of Life"

- APTA-Best article on clinical research published in *Physical Therapy* in 2007
Chattanooga Research Award 2007
- Roger A. Mann Award for the Outstanding Clinical Study presented at the
American Orthopaedic Foot and Ankle Society annual meeting. 2002
Controlled Prospective Randomized Clinical Trial on the Effect of
Tendo-Achilles Lengthening on Patients With DM and a Neuropathic
Plantar Ulcer. Johnson Jeffrey E, Mueller Michael J,
Hastings Mary K, Sinacore David R, Engsborg Jack R
- Washington University Medical School, Program in Physical Therapy 1993
Director's Award
- University of Illinois, Champaign-Urbana, IL 1990
Bronze Tablet

EDITORIAL RESPONSIBILITIES:

- Physical Therapy*
Reviewer 2005-present
- Journal of Orthopaedic and Sports Physical Therapy*
Reviewer 2004-present
- Diabetic Medicine*
Reviewer 2009-present

PROFESSIONAL SOCIETIES AND ORGANIZATIONS:

- Missouri Physical Therapy Association, Member 1999-present
Co-Chair of the Research Section 2005-2010
- American Physical Therapy Association, Member 1999-present
1991-1995
Committee member of Foot and Ankle Task Force 2012
- National Athletic Trainers' Association, Member 1990-present

MAJOR INVITED PROFESSORSHIPS AND LECTURESHIPS:

- Topic: Diabetes Related Foot Complications**
"Leg muscle and fat volumes are associated with muscle performance in individuals with
diabetes mellitus and peripheral neuropathy" APTA Combined Sections Meeting, Las
Vegas, NV 2014

“Heel Rise Kinetics and Kinematics in Individuals with Diabetes Related Foot Deformity”
APTA Combined Sections Meeting, San Diego, CA 2013

“Unloading Plantar Ulcerations in Diabetes: Review of Research and Interactive Session”
Undersea & Hyperbaric Medical Society, St. Louis, MO 2012

“Progressive Foot Deformity in Neuropathic Charcot Arthropathy at One and Two Years”
APTA Combined Sections Meeting, Chicago, IL 2012

“Botulinum Toxin Effect on Plantarflexor Muscle Strength and Plantar Pressure”
APTA Combined Sections Meeting, New Orleans, LA 2011
Washington University Research Symposium, October 27, 2010
Physical Therapy Seminar Series, April 20, 2010

Topic: Diabetes Related Foot Complications cont.

“Radiographic Correlates of Charcot Neuroarthropathic Deformity Reflect Midfoot Function and Calcaneal Bone Mineral Density”
NIH Workshop: Charcot Neuroarthropathy: Recent Progress and Future Directions
Washington D.C., September 2008 and
APTA Combined Sections Meeting
Las Vegas, NV, February 2009

“Unloading Plantar Ulcerations-Review of Research and Demonstration”
American Orthotic & Prosthetic Associations National Assembly
Chicago, IL, September 2008

“Research in Footwear and Orthoses in Individuals with Diabetes Mellitus”
Podiatric Footwear Association
Atlanta, Georgia, November 2006

“Effect of Metatarsal Pad Location on Plantar Pressure in People with Diabetes and Peripheral Neuropathy”
APTA Combined Sections Meeting
San Diego, CA, February 2006

“Tarsal and metatarsal bone density assessment using volumetric quantitative computed tomography in subjects with and without charcot changes”
APTA Combined Sections Meeting
New Orleans, LA, February 2005

“Bone density measures in patients with diabetes mellitus, peripheral neuropathy, and characteristic patterns of mid tarsal joint deformities”

APTA Combined Sections Meeting
Nashville, TN, February 2004

“Hammer toe deformity, soft tissue density, and peak plantar pressure in subjects with and without diabetes”

Marilyn Gossman Graduate Student Seminar, APTA Combined Sections Meeting
Boston, MA, February 2002

“Healing rates by location of diabetic neuropathic (charcot) fractures using total contact casting”
Missouri Physical Therapy Association Spring Meeting
Osage Beach, MO, March 1997

Topic: Movement Impairments of the Foot and Ankle

“Movement system impairment syndromes of the foot/ankle with applications of the physical stress theory”

Annual Conference & Exposition of the APTA
Orlando, FL, June 2006

“Foot and ankle movement impairment syndromes”

Alumni Day, Washington University Program in Physical Therapy
St. Louis, MO, September 2005

“Foot and ankle movement impairment syndromes”

Diagnosis and Treatment of Movement System Impairment Syndromes: Lower Quarter
Advanced Application

Washington University Program in Physical Therapy
St. Louis, MO, 2002, 2004-Present

Topic: Physical Therapy Diagnoses

“Knee”

Diagnosis Rounds

Washington University Program in Physical Therapy
St. Louis, MO, November 2005

Topic: Gait Biomechanics

“Kinetics and Kinematics after the Bridle Procedure for Treatment of Traumatic Foot Drop”

American Orthopaedic Foot and Ankle Society annual meeting
Hollywood, FL, July 2013

“Biomechanics of the lower extremity during gait”

Pedorthic Footwear Association
Indianapolis, IN, October 2005

“Gait Analysis: Implications for the evaluation and treatment of chronic foot and ankle pain”
NATA National Convention
St. Louis, MO, June 2003

Topic: Evidence Analysis

“Tips for Finding, Analyzing, and Applying Evidence to Practice”
APTA Combined Sections Meeting
Las Vegas, NV, February 2009

CONSULTING RELATIONSHIPS AND BOARD MEMBERSHIPS:

Dr. Scholl’s Consultant 2009-present

Dr. Scholl’s Professional Council, Member 2006-present

RESEARCH SUPPORT:

Active:

Mentor

Project Title: Contributing factors to forefoot deformity in the diabetic, neuropathic foot.

PI: Victor Cheuy

Source: NIH/NICHHD

April 1, 2014

Mentor

Project Title: Foot progression angle in individuals with diabetes and peripheral neuropathy

PI: Ericka Merriwether

Source: NIH/NIDDK (F31 DK088512-01A1)

July 1, 2012 – June 30, 2014

Total Cost: \$58,848

Clinical Scientist Scholar

Project Title: Biomechanical Contributions to Acquired Foot Deformity in Diabetes

PI: Michael Mueller PT, PhD

Source: Comprehensive Opportunities in Rehabilitation Research Training (CORRT)/NIH/NICHHD,

NCMRR, NINDS (K12 HD055931)

September 1, 2009 – August 31, 2014

Total Cost: Total grant \$4,626,510 Hastings portion \$285,170

Pending:

Co-Investigator

Project Title: Characterization of microcirculatory function in diabetic leg and foot with MRI

PI: Jie Zheng, PhD

Source: NIH/NIAMS (R21 AR065672)

December 1, 2013-November 30, 2015

Co-Principal Investigator

Project Title: Muscle and joint deterioration contributing to neuropathic forefoot deformity

PI: Michael Mueller PT, PhD and Mary Hastings DPT

Sources: NCMRR/NICHHD/NIH (R01 HD079548)

April 1, 2014-March 20, 2018

Pending cont:

Co-Investigator

Project Title: Diabetic upper extremity pathophysiology, limited joint mobility and disability

PI: Michael Mueller PT, PhD

Sources:

April 1, 2014-March 20, 2018

Completed:

Project Title: Foot progression angle in individuals with diabetes and peripheral neuropathy

PI: Ericka Merriwether

Source: Foundation for Physical Therapy (PODSII)

September 1, 2012 – August 31, 2013

Total Cost: \$15,000

Principal Investigator

Project Title: Effects of Bump Insole Intervention on Balance

Source: Dr. Scholl's

December 30, 2012-December 29, 2013

Total Cost: \$40,732

Co-Investigator

Project Title: MRI Methods for the Assessment of Skeletal Muscle Oxygenation

Co-PIs: Jie Zheng PhD and Michael Mueller PT, PhD

Source: NIH CTSA (UL1 TR000448)

August 23, 2012 – August 22, 2013

Total Cost: \$9,844.00

Co-Investigator

Outcomes of the Bridle procedure for the treatment of traumatic foot drop

PI: Jeffrey Johnson

Source: Midwest Stone Institute

October 2009 – May 2012

Principal Investigator

Project Title: Effects of Discomfort and Lower Extremity Fatigue on Gait and Activity Parameters

PI: Mary Hastings, PT, DPT, ATC

Source: Dr. Scholl's

July 20, 2011 – January 31, 2012

Total Cost: \$30,000

Co-Investigator

Biomarkers development for Diabetic Complications

PI: Fred Prior PhD/Dave Sinacore PhD, PT

Source: NIH/ NIDDK (R21 DK079457)

August 1, 2007 – July 31, 2010

Total Cost: \$550,000

Award Recipient

Carbon Fiber Ankle Foot Orthosis Design Optimization

PI: Mary Hastings, PT, DPT, ATC

Source: Program in Physical Therapy, Washington University School of Medicine

November 21, 2011 – December 1, 2011

Total Cost: \$2,000

Award Recipient

C-Motion Visual 3D Software Training

Source: Program in Physical Therapy, Washington University School of Medicine

April 14, 2010 – December 20, 2010

Total Cost: \$3,700

Award Recipient

Multi-segmental Kinematic Assessment of Foot Motion During Walking

PI: Mary Hastings, PT, DPT, ATC

Source: Program in Physical Therapy, Washington University School of Medicine

April 14, 2010 – December 1, 2010

Total Cost: \$1,500

Postdoctoral Scholar

Research Education, Training and Career Development Clinical and Translational Science Award

PI: Brad Evanoff MD, MPH

Source: Washington University Institute of Clinical and Translational Sciences
(CTSA)/NCRR/NIH UL1 RR 024992-01

October 1, 2009 – May 31, 2011

Co-Investigator

Effects of Weight Bearing exercise on People with Diabetes and Neuropathic Feet

PI: Michael Mueller, PhD, PT

Source: NIH/NICH/National Center for Medical Rehabilitation Research (R21 HD048972)

May 2009 – April 2010

Total Cost: \$275,000

Completed cont.:

Award Recipient

Protocol development grant

Source: Center for Clinical Imaging Research, Washington University School of Medicine
September 1, 2009 – March 1, 2010

Principal Investigator

Botulinum Toxin's Effects on Plantar Ulcer Recurrence

PI: Mary Hastings, PT, DPT, ATC

Source: NIH/NICH/NCMRR (R21 HD048972)

January 1, 2005 – December 31, 2008

Total Cost: \$275,000

Co-Investigator

Optimal Off-Loading Therapy for Healing Diabetic Ulcers

PI: David Sinacore, PhD, PT

Source: NIH/NIDDK (RO1 DK059224)

April 1, 2001 – March 31, 2005

Total Cost: \$570,000

Co-Investigator

Visualizing the Diabetic Foot to Optimize Orthotic Fitting

PI: Michael Mueller, PhD, PT

Source: NIH/NCMRR (2 R01 HD036895)

December 1, 2002 – November 30, 2008

Total Cost: \$995,840

Co-Investigator

Visualizing the Diabetic Foot to Optimize Orthotic Fitting

PI: Michael Mueller, PhD, PT

Source: NIH/NICHD/ NCMRR (RO1 HD036895)

January 1, 1998 – November 30, 2001

Total Cost: \$925,166

Co-Investigator

Achilles Tendon Lengthening on Patients with Diabetes

PI: Michael Mueller, PhD, PT

Source: NIH/NICHD/NCMRR (RO1 HD036802)

January 1, 1999 – May 30, 2004

Total Cost: \$756,563

PATENT:

60/957,238 – Multi-Plug Design Shoe Insole (Provisional)

CLINICAL TITLE AND RESPONSIBILITIES:

- Washington University Physical Therapy Clinics: Physical Therapist 2001-present
Responsibilities: Provide clinical care for musculoskeletal foot and ankle conditions. Consult with fellows and faculty on complicated foot and ankle cases.
- The Rehabilitation Hospital of St. Louis (MO): Physical Therapist 1999-2001
Responsibilities: Provide care for patients with musculoskeletal conditions.
- Barnes-Jewish Hospital, St. Louis, MO: Staff Physical Therapist 1994-1999
Responsibilities: Provide care for patients with musculoskeletal conditions.

TEACHING RESPONSIBILITIES:

Current Teaching Responsibilities

- Advanced Biomechanics, Kinesiology (L63 IPMS 5810)
Participating Instructor Multiple Segmental Foot Model: 2012-present
Class Size: 2-6
3 Credit hours
Movement Science Program (PhD) Curriculum
- Diagnosis and Management of Musculoskeletal Conditions in PT III (PT 638)
Participating Instructor Foot and Ankle Unit: 1996-present
Class Size: 80
3 Credit hours
Professional Clinical Doctorate (DPT) Curriculum (WUSM)
- Human Anatomy (PT 611)
Participating Instructor Foot and Ankle Unit: 2003-present
Class Size: 80
5 Credit hours
Professional Clinical Doctorate (DPT) Curriculum (WUSM)
- Essential Skills in Physical Therapy II (PT 627)
Participating Instructor Mobilization Unit: 1994-present
Class Size: 80
3 Credit Hours
Professional Clinical Doctorate (DPT) Curriculum (WUSM)

Current Teaching Responsibilities cont.

- Diagnosis & Management for Musculoskeletal Conditions: Lower Quarter
Participating Instructor Foot and Ankle Unit: 2002, 2003, 2005, 2007, 2009
Class Size: 20-30

3 Credit hours
Post Professional Clinical Doctorate (PP DPT) Curriculum (WUSM)

Case Integration Lab I (PT628)
Participating Instructor and small group leader
Class size: 80
1 Credit hour
Post Professional Clinical Doctorate (PP DPT) Curriculum (WUSM)

Case Integration Lab II (PT642)
Small group leader
Class size: 80
1 Credit hour
Post Professional Clinical Doctorate (PP DPT) Curriculum (WUSM)

Guest lecturer or limited participation as a project grader in selected other courses for the professional curriculum courses: Professional Issues and Skill Development (PT 601); Case Integration Lab II (PT 642); Case Integration Lab III (PT 645)

Diagnosis and Management of Musculoskeletal Ankle and Foot Conditions:
Fellowship Curriculum

Student Advisement (DPT)

Melissa Stevens
“A Treatment Guideline for a Patient with an Osteochondritis Desiccans Lesions of the Talus”
Complete May 2004 (DPT)

Gretchen Leff
“An application of the physical stress theory to the rehabilitation of complex foot/ankle injuries with prolonged immobilization in a post-menopausal female: A case report” Complete April 2014 (DPT)

Research Advisement (PhD Students/Residents)

Victor Cheuy, MS, BS: Ankle/Foot biomechanics including use of multi-segmental foot kinematic analysis.

Ericka Merriwether DPT, ATC: Ankle/Foot biomechanics including use of multi-segmental foot kinematic analysis.

Research Advisement (PhD Students/Residents) cont

Nicole Mercer Bolton MD, PT and Scott Paxton MD: Radiographic measures of foot alignment.

PUBLICATIONS:

Peer Reviewed Manuscripts:

Gelber JR, Sinacore DR, Strube MJ, Mueller MJ, Johnson JE, Prior FW, **Hastings MK**. Windlass mechanism in individuals with diabetes mellitus, peripheral neuropathy and low medial longitudinal arch height. *Foot and Ankle International*. Accepted 2014

Hastings MK, Woodburn J, Mueller MJ, Strube MJ, Johnson JE, Beckert KS, Stein ML, Sinacore DR. Radiographic-directed local coordinate systems critical in kinematic analysis of walking in diabetes-related medial column foot deformity. *Gait & Posture*.
<http://dx.doi.org/10.1016/j.gaitpost.2014.03.010>

Zheng J, **Hastings MK**, Zhang X, Coggan A, An H, Snozek D, Curci J, Mueller MJ. A pilot study of regional perfusion and oxygenation in calf muscles of diabetes with a noninvasive measure. *Journal of Vascular Surgery*. 2014;59(2):419-426. PMID: 24080129

Cheuy VA, **Hastings MK**, Commean PK, Ward SR, Mueller MJ. Intrinsic foot muscle deterioration is associated with metatarsophalangeal joint angle in people with diabetes and neuropathy. *Clinical Biomechanics*.2013;28(9-10):1055-1060. PMID: 24176198 PMCID: PMC3893062

Sinacore DR, Gutekunst DJ, **Hastings MK**, Strube MJ, Bohnert KL, Prior FW, Johnson JE. Neuropathic midfoot deformity: associations with ankle and subtalar joint motion. *JFOOT ANKLE RES* 2013; Mar 25; 6(1):11. DOI: 10.1186/1757-1146-6-11. PMID: 23531372

Cheuy VA, Commean PK, **Hastings MK**, Mueller MJ. Reliability and validity of a magnetic resonance-based volumetric analysis of the intrinsic foot muscles. *Journal of Magnetic Resonance Imaging*. 2013;38(5):1083-1093. PMCID:PMC3893062

Hastings MK, Sinacore DR, Woodburn J, Paxton ES, Klein SE, McCormick JJ, Bohnert KL, Beckert KS, Stein ML, Strube MJ, Johnson JE. Kinetics and Kinematics after the Bridle Procedure for Treatment of Traumatic Foot Drop. *Clinical Biomechanics*. 2013;28(5):555-561. PMID:23684087.

Mueller MJ, Tuttle LJ, LeMaster JW, Strube MJ, McGill JB, **Hastings MK**, Sinacore DR. A weight-bearing versus non-weight-bearing exercise program for people with diabetes and peripheral neuropathy: A randomized controlled trial. *Archives of Physical Medicine Rehabilitation*. 2013;94(5):829-38. PMID:23276801

Peer Reviewed Manuscripts cont:

Hastings MK, Johnson JE, Strube MJ, Hildebolt CF, Bohnert KL, Prior FW, Sinacore DR. Progressive Foot Deformity in Neuropathic (Charcot) osteoarthropathy. *Journal of Bone and Joint Surgery American*. 2013;95(13):1206-1213. PMID:23824389.

Sinacore DR, Gutekunst DJ, **Hastings MK**, Strube MJ, Bohnert KL, Prior FW, Johnson JE.

Neuropathic midfoot deformity: associations with ankle and subtalar joint motion. *Journal of Foot and Ankle Research*. 2013;6(11). PMID 3616933

Hastings MK, Mueller MJ, Sinacore DR, Strube MJ, Crowner BE, Johnson JE, Racette BR. Botulinum toxin effect on plantarflexor muscle strength and plantar pressure in people with diabetes mellitus, peripheral neuropathy, and a plantar ulcer. *Foot and Ankle International*. 2012;33(5):363-370. PMID 3747956

Tuttle LJ, **Hastings MK**, Mueller MJ. A moderate-intensity weight-bearing exercise program for a person with type 2 diabetes and peripheral neuropathy. *Physical Therapy*. 2012;92(1):133-141. PMID 3258413

Commean PK, Kennedy JA, Bahow KA, Hildebolt CF, Smith KE, Liu L, **Hastings MK**, Ju T, Prior FW, Sinacore DR. Volumetric Quantitative Computed Tomography Measurement Precision for Volumes and Densities of Tarsal and Metatarsal Bones. *J of Clinical Densitometry*. 2011;14(3):313-320. PMID 21723764

Commean PK, Tuttle LJ, **Hastings MK**, Strube MJ, Mueller MJ. Magnetic resonance imaging measurement reproducibility for calf muscle and adipose tissue volume. *J of Magnetic Resonance Imaging*. 2011;34(6):1285-1294. PMID 3221819.

Hastings MK, Sinacore DR, Mercer-Bolton N, McCormick J, Hildebolt CK, Prior FW, Johnson JE. Precision of foot alignment measures in individuals with diabetes mellitus related neuropathic charcot arthropathy. *Foot and Ankle International*. 2011;32(9):867-872. PMID 3586199

Gutekunst DJ, **Hastings MK**, Bohnert KL, Strube MJ, Sinacore DR. Removable cast walker boots yield greater forefoot off-loading than total contact casts. *Clinical Biomechanics*. 2011;26(6):649-654. PMID 3119372

Hastings MK, Gelber JR, Isaac, EJ, Bohnert, KL, Strube MJ, Sinacore DR. Foot progression angle and medial loading in individuals with diabetes mellitus, peripheral neuropathy, and a foot ulcer. *Gait and Posture*. 2010;32:237-241. PMID 2409979

Commean PK, Ju T, Liu Lu, Sinacore DR, **Hastings MK**, Mueller MJ. Tarsal and Metatarsal Bone Mineral Density Measurement using Volumetric Quantitative Computed Tomography. *Journal of Digital Imaging*. 2009;22(5):492-502. PMID 2745489

Peer Reviewed Manuscripts cont:

Sinacore DR, **Hastings MK**, Bohnert KL. Impact loads and plantar stresses while walking in subjects with adult-acquired, neuropathic medial column foot deformity. *Journal of Orthopaedic and Sports Physical Therapy*. 2009;39(1):A21.

Sinacore DR, **Hastings MK**, Bohnert KL, Fielder FA, Villareal DT, Blair VP, Johnson JE. Inflammatory osteolysis in diabetic neuropathic (Charcot) arthropathies of the foot. *Physical*

Therapy. 2008;88(11):1399-1407. PMID: 18801857

Actis RL, Ventura LB, Lott DJ, Smith KE, Commean PK, **Hastings MK**, Mueller MJ. Multi-plug insole design to reduce peak plantar pressure on the diabetic foot during walking. *Med Bio Eng Comput*. 2008;46(4):363-371. PMID: 18266017

Hastings MK, Gelber JR, Commean PK, Prior FW, Sinacore DR. Bone mineral density of the tarsals and metatarsals with reloading. *Physical Therapy*. 2008;88(6):766-779. PMCID 2409979

Sinacore DR, Bohnert KL, **Hastings MK**, Johnson JE. Mid foot kinetics characterize structural polymorphism in diabetic foot disease. *Clinical Biomechanics*. 2008;23(5):653-661. PMID: 17602806

Garcia CA, Hoffman SL, **Hastings MK**, Klaesner JW, Mueller MJ. Effect of metatarsal phalangeal joint extension on plantar soft tissue stiffness and thickness. *The Foot*. 2008;18:61-67. PMID: 19492011

Prior F, Commean PK, Ju T, **Hastings MK**, Hildeboth CF, Sinacore DR. Developing a biomarker for neuropathic arthropathy in diabetic patients. 2007 IEEE/NIH Life Science Systems and Applications Workshop (LISSA 2007).

Hastings MK, Mueller MJ, Pilgram TK, Lott DJ, Commean PK, Johnson JE. Effect of metatarsal pad placement on plantar pressure in people with diabetes and peripheral neuropathy. *Ankle & Foot International*. 2007;28(1):84-88. PMID: 17257544

Lott DJ, **Hastings MK**, Commean PK, Smith KE, and Mueller MJ. Effect of footwear and orthotic devices on stress reduction and soft tissue strain of the neuropathic foot. *Clinical Biomechanics*. 2007;22(3):352-359. PMID: 17182156

Mueller MJ, Lott DJ, **Hastings MK**, Commean PK, Smith KE, Pilgram TK. Efficacy and Mechanism of Orthotic Devices to Unload Metatarsal Heads in People with Diabetes and a History of Plantar Ulcer. *Physical Therapy*. 2006;86(6):833-842. PMID: 16737409

Peer Reviewed Manuscripts cont:

Salsich GB, Mueller MJ, **Hastings MK**, Sinacore DR, Strube MJ, Johnson JE. Effect of tendo achilles lengthening procedure on plantar flexor muscle performance in people with diabetes and a neuropathic plantar ulcer. *Physical Therapy*. 2005;85(1):34-43. PMID: 15623360

Hastings MK, Sinacore DR, Fielder FA, Johnson JE. Measures of Bone Mineral Density Throughout Total Contact Cast Immobilization for Treatment of Neuropathic (Charcot) Arthropathy. *Physical Therapy*. 2005;85(3):249-256. PMID: 15733049

Mueller MJ, Sinacore DR, **Hastings MK**, Lott DJ, Strube MJ, Johnson JE. Impact of Achilles tendon lengthening on functional limitations and perceived disability in people with a neuropathic plantar ulcer. *Diabetes Care*. 2004;27(7):1559-1564. PMID: 15220228

Hastings MK, Commean PK, Smith KE, Pilgram TK, Mueller MJ. Aligning Anatomical Structure from Spiral X-ray Computed Tomography with Plantar Pressure Data. *Clinical Biomechanics*. 2003;18(9):877-882. PMID: 14527816

Mueller MJ, Sinacore DR, **Hastings MK**, Strube MJ, Johnson JE. Effect of Achilles tendon lengthening on neuropathic plantar ulcers. A randomized clinical trial. *Journal of Bone and Joint Surgery*. 2003;85-A(8):1436-1445.

Klaesner JW, **Hastings MK**, Zou D, Lewis C, Mueller MJ. Plantar tissue stiffness in patients with diabetes mellitus and peripheral neuropathy. *Archives of Physical Medicine & Rehabilitation*. 2002;83(12):1796-1801. PMID: 12474190

Commean PK, Mueller MJ, Smith KE, **Hastings M**, Klaesner J, Pilgram T, Robertson DD. Reliability and validity for combined imaging and pressure assessment methods for diabetic feet. *Archives of Physical Medicine and Rehabilitation*. 2002;83:497-505. PMID: 11932851

Klaesner JW, Commean PK, **Hastings MK**, Zou D, Mueller MJ. Accuracy and reliability testing of a portable soft tissue indenter. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*. 2001;9(2):232-240. PMID: 11474976

Hastings MK, Mueller MJ, Sinacore DR, Salsich GB, Engsborg JR, Johnson JE. Effects of a tendo-achilles lengthening procedure on muscle function and gait characteristics in a patient with diabetes mellitus. *Journal of Orthopaedic and Sports Physical Therapy*. 2000;30(2):85-90. PMID: 10693086

Sinacore DR, Mueller MJ, **Kent ME**, Elser T, Rubinow C. Healing rates by location of diabetic neuropathic (charcot) fractures using total contact casting. *Journal of Orthopaedic and Sports Physical Therapy*. 1997;25(1):63. PMID: 9017353

Invited Publication:

Sahrmann S and Associates. *Movement System Impairment Syndromes of the Extremities, Cervical and Thoracic Spines*. St. Louis: Mosby. 2011. (Author of Chapter 8: Movement Impairment Syndromes of the Foot and Ankle).

Conference Abstracts:

Hastings MK, Mueller MJ, Paul Commean PK, Strube MJ, Sinacore DR. Leg muscle and fat volumes are associated with muscle performance in individuals with diabetes mellitus and peripheral neuropathy. APTA Combined Sections Meeting. Las Vegas, NV. 2014. *Journal of*

Orthopaedic and Sports Physical Therapy. 2014;44(1):A22

Lanier VM, Gelber JR, Royer N, **Hastings MK**. A modified standing heel-rise test for ankle plantar flexor strength. APTA Combined Sections Meeting. Las Vegas, NV. 2014. *Journal of Orthopaedic and Sports Physical Therapy*. 2014;44(1):A23

Sinacore DR, Mitchell BE, Bohnert KL, Jackson TA, **Hastings MK**. Tarsal bone density, talar declination angle and peak plantar pressure in neuropathic medial column foot deformities. APTA Combined Sections Meeting. Las Vegas, NV. 2014. *Journal of Orthopaedic and Sports Physical Therapy*. 2014;44(1):A22

Hastings MK, Woodburn J, Strube MJ, Mueller MJ, Stein M, Sheldahl KB, Johnson JE, Sinacore DR. Heel rise kinetics and kinematics in individuals with diabetes related foot deformity. APTA Combined Sections Meeting. San Diego, CA. 2013. *Journal of Orthopaedic and Sports Physical Therapy*. 2013;43(1):A26

Mueller MJ, Tuttle LJ, LeMaster JW, Strube MJ, McGill B, **Hastings MK**, Sinacore DR. Weight-bearing versus non-weight-bearing exercise for people with diabetes and peripheral neuropathy. APTA Combined Sections Meeting. San Diego, CA. 2013. *Journal of Orthopaedic and Sports Physical Therapy*. 2013;43(1):A26

Gelber JR, Sinacore DR, Strube MJ, Mueller MJ, Bohnert KL, Snozek DR, Johnson JE, **Hastings MK**. Plantar fascia function in diabetes mellitus related foot deformity. APTA Combined Sections Meeting. San Diego, CA. 2013. *Journal of Orthopaedic and Sports Physical Therapy*. 2014;43(1):A31-32

Merriwether EN, **Hastings MK**, Bohnert KL, Sinacore DR. Impact of modification of foot progression angle on plantar loading. APTA Combined Sections Meeting. San Diego, CA. 2013. *Journal of Orthopaedic and Sports Physical Therapy*. 2014;43(1):A29

Sinacore DR, Gutekunst DJ, Bohnert KL, Mueller MJ, **Hastings MK**. Metatarsal buckling ratio as a fracture index in neuropathic (Charcot) arthropathy. San Diego, CA. 2013. *Journal of Orthopaedic and Sports Physical Therapy*. 2014;43(1):A30

Conference Abstracts cont:

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Lott DJ, Mueller MJ, **Hastings MK**, Commean PK, Smith KE. Effect of Footwear on Pressure Reduction and Soft Tissue Deformation of the Plantar Neuropathic Foot. Abstract for platform presentation: Marilyn Gossman Graduate Student Seminar. APTA Combined Sections Meeting. New Orleans, LA. February 2005.

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Community Service:

Kirkwood Baptist Church Adult Sunday School Teacher	1998-present
Kirkwood Baptist Church Deacon	1999-2001
Kirkwood Baptist Church Pastor Search Committee Member	2001-2003
Kirkwood Baptist Church Playground Adhoc Committee Chairperson	2003-2005
Kirkwood Baptist Church, Hands on Kirkwood, Community-wide day of service Organization committee member and team leader	2009-present

Kirkwood Baptist Church, Youth Council Chairperson	2012-present
St. Louis Gymnastics Center Parent Organization Member	2010-present