Ongoing scientific research is vital to the future of medicine and orthopaedic surgery is no exception. Since 1997, the AOFAS has been providing grant funding opportunities for members and their fellows in training. One-year grants have been awarded on a range of orthopaedic foot and ankle topics utilizing a competitive review process.

The goal of the AOFAS Research Grants Program is to advance foot and ankle investigation by providing funding for promising research projects and encouraging supplemental submissions to national funding sources.

Grants awarded by the AOFAS have resulted in innovative insights in foot and ankle care, presentations at AOFAS and other educational meetings, published articles in *Foot & Ankle International* and other specialty journals, and larger grants from national sources.

Eligibility for grant funding is a benefit of membership in AOFAS, and either the principal or co-principal project investigator must be an AOFAS Active Member, Associate Member-Osteopathic, Candidate Member, or International Member.

The AOFAS Research Grants Program is funded by the Outreach & Education Fund (OEF) and the Orthopaedic Research and Education Foundation (OREF) with contributions from individuals and corporations.

This document is a summary of grants awarded and publications, presentations, and subsequent grants/awards received as reported to AOFAS by the grant recipients.

L. Daniel Latt, MD, PhD, Chair
AOFAS Research Committee
<table>
<thead>
<tr>
<th>Year Funded:</th>
<th>1997</th>
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</thead>
<tbody>
<tr>
<td><strong>Principal Investigator:</strong></td>
<td>Michael E. Brage, MD</td>
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<tr>
<td><strong>Co-Investigator(s):</strong></td>
<td>Louis F. Draganich, PhD</td>
</tr>
<tr>
<td><strong>Project Title:</strong></td>
<td>The Effects of Adult Acquired Flatfoot Deformity on the Tibiotalar Joint Contact Characteristics</td>
</tr>
<tr>
<td><strong>Grant Amount:</strong></td>
<td>$7,250</td>
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</table>

**Publications:**
Friedman MA; Draganich LF; Toolan B; Brage ME. The Effects of Adult Acquired Flatfoot Deformity on Tibiotalar Joint Contact Characteristics. Foot & Ankle International, 22(3) 241-46, 2001

**Presentations:**
AOFAS Winter Meeting 2000

"The Effects of Adult Acquired Flatfoot Deformity on Tibiotalar Joint Contact Characteristics". 23rd Annual American Society of Biomechanics, Pittsburgh PA, Oct 21-23, 1999

**Further Grants / Awards:**
J. Leonard Goldner MD Award for Outstanding Basic Science Study, March 2000, $2,000, Brage ME; Draganich LF, "The Effects of Adult Acquired Flatfoot Deformity on the Tibiotalar Joint Contact Characteristics."

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<thead>
<tr>
<th>Year Funded:</th>
<th>1997</th>
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<tbody>
<tr>
<td><strong>Principal Investigator:</strong></td>
<td>Lisa T. DeGnore, MD</td>
</tr>
<tr>
<td><strong>Project Title:</strong></td>
<td>Biomechanics of Lisfranc Joint</td>
</tr>
<tr>
<td><strong>Grant Amount:</strong></td>
<td>$7,250</td>
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**Publications:**

**Presentations:**
AOFAS - date unknown

**Further Grants / Awards:**
none

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<th>Year Funded:</th>
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<tr>
<td><strong>Principal Investigator:</strong></td>
<td>Zong-Ping Luo, PhD</td>
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<tr>
<td><strong>Project Title:</strong></td>
<td>Biomechanical and Immunohistochemical Study of the MCL of the Big Toe MTP Joint</td>
</tr>
<tr>
<td><strong>Grant Amount:</strong></td>
<td>$5,500</td>
</tr>
</tbody>
</table>

**Publications:**
Core, 1998 Sept (354) 235-40


**Presentations:**

Further Grants / Awards:
none

Year Funded: 1997
Principal Investigator: Bruce J. Sangeorzan, MD
Project Title: Review of Technique and Demonstration of Experimental Flatfoot Model
Grant Amount: $5,000

Publications:
McCormack AP; Ching RP; Sangeorzan BJ. Biomechanics of Procedures Used in Adult Flatfoot Deformity. Foot & Ankle Clinic 6(1): 15-23, 2001

Niki H; Ching RP; Kiser P; Sangeorzan BJ. The Effect of Posterior Tibial Tendon Dysfunction on Hindfoot Kinematics. Foot & Ankle International 22(4): 292-300, 2001

Chi TD; Toolan BC; Sangeorzan BJ; Hansen ST. The Lateral Column Lengthening and Medial Column Stabilization Procedures. Clinical Orthopaedics and Related Research 365: 81-90, 1999

Ananthakrishnan D; Ching RP; Tencer A; Hansen ST; Sangeorzan BJ. Subluxation of the Talocalcaneal Joint in Adults Who Have Symptomatic Flatfoot. Journal of Bone and Joint Surgery 81-A(8): 1147-1154, 1999


Sands AK; Early JS; Harrington RM; Tencer AF; Ching RP; Sangeorzan BJ. Effect of Variations in Calcaneocuboid Fusion Technique on Kinematics of the Normal Hindfoot. Foot & Ankle International 19(1): 19-25, 1998


Presentations:


Sands AK; Harrington R; Tencer AF; Ching R; Sangeorzan BJ. "Kinematics of the Hindfoot with Lateral Lengthening at Calcaneal Cuboid Fusion." Orthopaedic Research Society 43rd Annual Meeting, San Francisco CA, February 13, 1997

Niki H; McCormack; Felton; Kaiser; Tencer AF; Sangeorzan BJ. "Effective Foot Postion and Load Distribution Between the Talocalcaneal and Talonavicular Joints of the Hindfoot." Orthopaedic Research Society 43rd Annual Meeting, San Francisco CA, February 1997

Niki H; McCormack; Kaiser; Sangeorzan BJ; Tencer AF. "Effective Flatfoot Reconstruction Method on the Contact Characteristics of the Hindfoot." Orthopaedic Research Society 43rd Annual Meeting, San Francisco CA, February 1997

Further Grants / Awards:
"Biomechanics of Foot Deformities and Alternatives for Surgical Correction" Department of Veterans Affairs RR&D Center Grant, November 1, 1997-December 31, 1999, $293,000

Year Funded: 1998
Principal Investigator: Sheldon S. Lin, MD
Co-Investigator(s): J. Russell Parsons, PhD
Project Title: Delayed Fracture Healing in Diabetes Mellitus BB Wistar Rats: Model and Potential Txt
Grant Amount: $10,000

Publications:

Gebauer GP; Lin SS; Beam HA; Vieira P; Parsons JR. Low-intensity pulsed ultrasound increases the fracture callus strength in diabetic BB Wistar rats but does not affect cellular proliferation. Journal of Orthopaedic Research, 20(3): 587-592, 2002.


Presentations:
Orthopaedic Research Society, Anaheim, Feb 1999

Orthopaedic Research Society, Orlando, March 2000

Further Grants / Awards:
OREF Research Grant, 1998, $100,000

Aircast Foundation Grant $100,000

Foundation and basis for subsequent 12 grants (>500,000)

OREF, AAOS Clinical Scientist Traveling Fellowship, 2005
Year Funded: 1998
Principal Investigator: Neil Sharkey, PhD
Co-Investigator(s): Paul J. Juliano, MD; Peter R. Cavanagh, PhD
Project Title: Achilles Tendon Lengthening for Reduction of Forefoot Ulceration in the Diabetic Patient
Grant Amount: $10,000

Publications:
none

Presentations:
Published Abstracts:
Malloy PM; Becker, MB; Sharkey NA. "Effects of restricted ankle dorsiflexion on plantar pressure distributions." Transactions of the 23rd Annual Meeting of the American Society of Biomechanics, pp. 178-179, 1999

Sharkey NA; Hamel AJ. "Restricted ankle mobility alters ground reaction force and plantar pressure." Transactions of the Annual Meeting of the 46th Orthopaedic Research Society, p. 0192, 2000


Invited Presentations:
Note: Though not exclusively focused on tendo-Achilles lengthening, all of the presentations listed below included results from our AOFAS study.


Sharkey NA. "Biomechanical indicators and assessments of lower extremity surgery." Department of Surgery, Milton S. Hershey Medical Center, Hershey, PA, March 1, 2000

Sharkey NA. "Biomechanical explorations of the foot and ankle: normal function, trauma, and surgical intervention." Division of Orthopaedic Surgery, Duke University Medical Center, Durham, NC, August 14, 2002

Sharkey NA. "Foot and ankle biomechanics in health and disease." Department of Orthopaedic Surgery, UC Davis Medical Center, Sacramento, CA, August 27, 2002

Sharkey NA. Keynote Address for Foot and Ankle Research Retreat II, University of Southern California, "One Step at a Time: Lessons Learned from Cadaver Simulations of Gait", April 29, 2004

Sharkey NA. "High fidelity simulations of human gait: Approach and Findings" Department of Orthopaedics & Rehabilitation, Brown University, Providence, RI, March 16, 2005

Sharkey NA. "Hindfoot to forefoot: Ties that bind." Western Podiatric Medical Congress, Anaheim CA, June 9, 2005

Sharkey NA. "What we can learn from animated cadaver models of the foot." Buchanan Lecture, Department of Orthopaedics and Rehabilitation, The Milton S. Hershey Medical Center, College of Medicine, Hershey, PA, June 17, 2005
Sharkey NA. "Animated cadaver models of human locomotion: hesitant steps toward increased understanding." Department of Biomedical Engineering, Rensselaer Polytechnic Institute, Troy, NY, February 8, 2006

Sharkey NA. "Hindfoot to forefoot: ties that bind." Ninth Annual International Conference of Foot Biomechanics and Orthotic Therapy, Chicago IL, December 1-3, 2006

**Further Grants / Awards:**
Note: Though each of the projects listed below had or has different aims, each employed or employs techniques developed and perfected in the AOFAS study.

"An Objective Evaluation of Segmented Foot Models" National Institute of Child Health and Human Development, 6/1/06, $140,000

"In-Shoe Orthoses and External Load as Modulators of Local Bone Strain" College of Health and Human Development, Penn State, 7/1/04, $14,923

"Bone Strain During 0G Exercise" National Aeronautics Space Administration (PI: Cavanagh), 6/1/00, $653,306

"Design Criteria for Therapeutic Footwear in Diabetes" National Institute of Child Health and Human Development (PI: Cavanagh), 7/1/00, $1,185,669

"Kinematic and Kinetic Behavior of the Ankle Following Malleolar Fracture and Repair" Orthopaedic Trauma Association, 1/1/99, $19,995

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**Year Funded:** 1998
**Principal Investigator:** Thom A. Tarquinio, MD
**Co-Investigator(s):** Douglas E. Parsell, PhD
**Project Title:** Biomechanical Evaluation of Suture Anchor Strength for Reattachment of Achilles Insertion
**Grant Amount:** $5,000

**Publications:**
none

**Presentations:**
Southeastern Ortho Foot, April 1999

Rhetsson Hobgood E; Parsell D. "Biomechanical Evaluation of Bone Suture Anchors" Southern Biomaterials Conference, Blacksburg VA, 2000

Smith WT; Tarquinio TA. "Biomechanical Evaluation of Bone Suture Anchors" Annual Mid-America Orthopaedic Association, Scottsdale AZ, Apr 2000

**Further Grants / Awards:**
Southern Biomaterials Conference, Blacksburg VA, Best Presentation Award, 2000

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**Year Funded:** 1999
**Principal Investigator:** Nicholas A. Abidi, MD
**Co-Investigator(s):** Rocky S. Tuan, PhD
**Project Title:** Clinical Pathophysiology of Plantar Fasciitis  
**Grant Amount:** $5,000

**Publications:**
none

**Presentations:**
none

**Further Grants / Awards:**
Nathan Shock Center of Excellence-Lankenea Med Research Grant - $29,000

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**Year Funded:** 1999  
**Principal Investigator:** Jorge I. Acevedo, MD  
**Co-Investigator(s):** Lew C. Schon, MD  
**Project Title:** Comparative Biomechanical Analysis of Fusion Techniques for Tibiotalocalcaneal Arthrodesis  
**Grant Amount:** $5,000

**Publications:**

**Presentations:**
AOFAS Winter Meeting, San Francisco CA, 2001

**Further Grants / Awards:**
none

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**Year Funded:** 2000  
**Principal Investigator:** Thomas O. Clanton, MD  
**Project Title:** Tendon Transfer Fixation in the Foot and Ankle: Biomechanical Comparison of Traditional Fixation Versus Bioabsorbable Screw Fixation  
**Grant Amount:** $8,000

**Publications:**
Louden KW; Ambrose CG; Beaty SG; McGarvey WC; Clanton TO. Tendon transfer fixation in the foot and ankle: a biomechanical study evaluating two sizes of pilot holes for bioabsorbable screws. Foot & Ankle International 24(1): 67-72, 2003.


Cohn JM; Sabonghy EP; Godlewski CA; Clanton TO; McGarvey WC. Tendon Fixation in Flexor Hallucis Longus Transfer: A Biomechanical Study Comparing a Traditional Technique Versus Bioabsorbable Interference Screw Fixation. Techniques in Foot & Ankle Surgery. 4(4):214-221, 2005.


**Presentations:**
none

**Further Grants / Awards:**
The Use of Biotenodesis Screw for Foot and Ankle Surgery. Clanton; Guzel: Arthrex, Inc., 7/01/02 to 6/30/03, $26,305

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**Year Funded:** 2000  
**Principal Investigator:** Anthony D. Watson, MD  
**Project Title:** Normal Human Talonavicular Joint Kinematics in Gait  
**Grant Amount:** $10,000

**Publications:**
none

**Presentations:**
Galik K; Miller MC; He J; Towsen A; Watson AD. "Talonavicular Kinematics at Midsstance Resulting from Physiologic Muscle Loading." Proceedings of the Orthopaedic Research Society, Dallas TX, 2004

**Further Grants / Awards:**
American Society for Surgery of the Hand, 2003-2004, $16,000

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**Year Funded:** 2001  
**Principal Investigator:** Jeffrey E. Johnson, MD  
**Co-Investigator(s):** Jack R. Engsberg, PhD; Raja Dhalla, MD; Michael Mueller, PhD, PT  
**Project Title:** The Effect of Variation in Rocker Sole Design on Gait Characteristics and Planter Pressures with Walking in a Total Contact Cast  
**Grant Amount:** $8,500

**Publications:**

**Presentations:**
Dhalla R; Johnson JE; Engsberg J. "Can the use of a terminal device augment plantar pressure reduction with a total contact cast?" AOFAS Winter Meeting, Dallas TX, February 16, 2002

**Further Grants / Awards:**
none

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**Year Funded:** 2001  
**Principal Investigator:** Kenton R. Kaufman, PhD
Co-Investigator(s): Kota Watanabe, MD; Harold B. Kitaoka, MD
Project Title: Ankle Joint Stability: Ligamentous and Articular Constraints
Grant Amount: $6,500

Publications:

Presentations:

Crevoisier X; Kitaoka H; Watanabe K; Fujii T; Berglund L; Kaufman K; An KN. "The effect of flexor digitorum longus tendon transfer and medial displacement calcaneal osteotomy for posterior tibial tendon dysfunction and flatfoot." Poster, Orthopaedic Research Society, New Orleans, LA, February 1-5, 2003.

Watanabe K; Kitaoka H; Crevoisier X; Berglund L; Zhao K; Kaufman K; An K. "Ankle stability ligamentous and articular restraints." Poster, Orthopaedic Research Society, New Orleans, LA, February 1-5, 2003


Further Grants / Awards:
Methodology developed led to additional projects related to total ankle arthroplasty stability. 11 07

Year Funded: 2001
Principal Investigator: David S. Levine, MD
Co-Investigator(s): James C. Otis, PhD
Project Title: The Effect of Achilles Tendon Stretching on Weightbearing
Grant Amount: $6,000

Publications:
none

Presentations:
Orthopaedic Research Society, 2003

Further Grants / Awards:
none

Year Funded: 2001
Principal Investigator: James A. Nunley, MD
Project Title: Identification of Potential Donor Rotational Bone Grafts using Vascular Territories in the Foot and Ankle
Grant Amount: $9,500

Publications:

Presentations:

Gilbert B. "Vascularized Bone Grafts to the Foot and Ankle." American Orthopaedic Association Annual Meeting, Asheville NC, October 2002

Nunley J. "Uses of Vascularized Bone Grafting of Foot and Ankle." Southeastern Foot Club, Point Clear AL, May 2003


Nunley J. "Treatment of Avascular Necrosis of the Talus." AOFAS Advanced Foot & Ankle Course, Atlanta GA, April 2006


Gilbert B. "Identifikation potentieller gefaessgestielter Knochentransplantate am Fuss." German Association of Foot and Ankle Surgery, Koeln Germany, March 2004

**Further Grants / Awards:**
J. Leonard Goldner Award Best Basic Research- AOFAS, 2003

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**Year Funded:** 2001

**Principal Investigator:** Rita M. Patterson, PhD

**Project Title:** Kinematic Analysis of the Normal and Flatfoot Deformity

**Grant Amount:** $9,500

**Publications:**
none

**Presentations:**
Patterson R. "Foot/ Ankle Kinematics: Comparative Analysis of Normal Foot vs. Flat Foot Deformity." 20th Annual Houston Conference on Biomedical Engineering Research, Houston TX, April 3-4, 2003

Patterson R. "Foot/ankle kinematics: Comparative analysis of normal foot vs. flat foot deformity." Summer Bioengineering Conference, Key Biscayne FL, June 25-29, 2003

**Further Grants / Awards:**
none

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**Year Funded:** 2002

**Principal Investigator:** Judith F. Baumhauer, MD

**Project Title:** MRI Evaluation of First Metatarsophalangeal Joint Kinematics

**Grant Amount:** $4,820

**Publications:**

A Prospective In Vivo Analysis of First Metatarsophalangeal Joint Mechanics under Loading Conditions Using Magnetic Resonance Imaging Following Cheilectomy. Submitted to JBJS

Presentations:
Baumhauer JF; Nawoczenski D; DiGiovanni BF; Wilding G; Grant BM; Hanson AE; Jackstadt EN: "The Reliability and Validity of the American Orthopaedic Foot and Ankle Society Clinical Rating Scale." (Poster Presentation) AOFAS Annual Meeting, Seattle, WA, July 2004.


Further Grants / Awards:
Roger Mann Award 2006

Year Funded: 2002
Principal Investigator: Judith F. Baumhauer, MD
Project Title: Reliability and Validity of the American Orthopaedic Foot and Ankle Clinical Rating Scale
Grant Amount: $3,135

Publications:

Presentations:
Baumhauer J. "Reliability & Validity of the AOFAS Clinical Rating Scale." Eastern Orthopaedic Association, 2004

Baumhauer J. "Foot and Ankle Outcome Scales." Grand Rounds, St. Louis- Newark NJ-Tuscon AZ

Preliminary paper AOFAS Summer 2003; full paper submitted to AOFAS specialty day 2004


Further Grants / Awards:
OREF Health Service Award (MPH), 2003-05, $150,000

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**Year Funded:** 2002  
**Principal Investigator:** Mark A. Glazebrook, MD  
**Project Title:** Experimental Overuse Achilles Tendinopathy: Establishment and Histological Validation of a Rat Tendonosis Model with Characterization of Molecular Cross Linking, Collagen Types I and III, Biomechanical Properties and Effect of Mechanical Stress  
**Grant Amount:** $8,395

**Publications:**  

Related Textbook Publications:  

Stanish WD; Glazebrook (2003). Achilles Tendon Disease: A review of the Basic Science. In Evolving strategies in the Diagnosis and Treatment of Tendinopathy an ISAKOS manuscript. editor- Annunziato Amendola

Amendola A; Glazebrook (2003). Achilles Tendon Disease: Clinical Management. In Evolving strategies in the Diagnosis and Treatment of Tendinopathy an ISAKOS manuscript. editor- Annunziato Amendola


**Presentations:**  


"Instructional Course Lecture: Acute Achilles Ruptures # 8." Canadian Orthopaedics Association Annual Meeting, Toronto Ontario, June 3, 2006

Further Grants / Awards:
2007 Dalhousie University Undergraduate Research Award for Paul Gibbons for best poster for Dalhousie Medical student summer research working with Dalhousie Medical faculty Member Mark Glazebrook. (June-Aug 2007) : Age and overuse running effects on collagen cross linking patterns in Achilles tendons using hydrothermal testing.

Marbel Prize - Dalhousie School of Biomedical Engineering Excellence in Research Award – PhD Category Achilles Tendon Disease: Establishing an animal model and an investigation of histology biochemistry and biomechanics. (May 9, 2005)

Dalhousie School of Biomedical Engineering Research Day Honourable Mention. Achilles Tendon Disease: Establishing an animal model and an investigation of histology biochemistry and biomechanics. (May 9, 2005)

Dalhousie School of Biomedical Engineering Research Day First Prize. Achilles Tendon Disease: Establishing an animal model and an investigation of biochemistry and biomechanics (A preliminary report). (May 6, 2003)

Year Funded: 2002
Principal Investigator: Michael P. Schaefer, MD
Project Title: The Effect of Foot Orthoses on Posterior Tibialis, Tibialis Anterior, and Peroneus Longus Muscle Electromyographic Activity During Walking and Running
Grant Amount: $8,650

Publications: none

Presentations:

Further Grants / Awards: none

Year Funded: 2003
Principal Investigator: Michael E. Brage, MD
Co-Investigator(s): Scott T. Ball, MD; David Amiel, PhD
Project Title: The effect of intra-articular fractures on fractures on cartilage in humans
Grant Amount: $5,600

Publications:
Ball ST; Jadin K; Allen RT; Schwartz AK, Sah RL; Brage ME. Chondrocyte Viability After Intra-articular Calcaneal Fractures in Humans Foot & Ankle International 28 (6): 665-668, June 2007.

Presentations:
"Effect on calcaneus fracture on cartilage." AOFAS Annual Meeting, 2005


Further Grants / Awards:
J. Leonard Goldner MD Award for Outstanding Basic Science Study, Brage ME; Ball ST; Jadin K; Allen RT; Schwartz AK; Sah RL, "Chondrocyte Viability after Intraarticular Calcaneus Fractures in Humans," July 2005, $1,000

Year Funded: 2003
Principal Investigator: William Ledoux, PhD
Co-Investigator(s): Bruce J. Sangeorzan, MD
Project Title: Investigation of midtarsal locking
Grant Amount: $10,000

Publications:
Blackwood CB; Yuen TJ; Sangeorzan BJ; Ledoux WR. “The midtarsal joint locking mechanism”, Foot & Ankle International, 26(12), 1074-1080, 2005

Presentations:
Blackwood CB; Yuen TJ; Sangeorzan BJ; Ledoux WR. “Quantification of the midtarsal joint locking mechanism” p. 155 (poster presentation), AOFAS Annual Meeting, Seattle WA, 2004

Further Grants / Awards:
none

Year Funded: 2003
Principal Investigator: Nelson Fong SooHoo, MD
Project Title: Design and implementation of a prospective foot and ankle outcomes database
Grant Amount: $8,000

Publications:
SooHoo NF; Samimi D; Vyas R; Botzler T. Evaluation of the validity of the Foot Function Index. Foot & Ankle International, 27(1):38-42, Jan 2006


Presentations:
SooHoo NF; Samimi D; Vyas R; Botzler T. “Evaluation of the validity of the Foot Function Index”. AOFAS Annual Meeting, Boston, 2005

SooHoo NF; Vyas R; Samimi D. "Responsiveness of the Foot Function Index, AOFAS Clinical Rating Systems, and SF-36 Following Foot and Ankle Surgery." AOFAS Annual Meeting, La Jolla 2006.

Further Grants / Awards:
OREF Career Development, 2009-2012
OREF/Current Concepts in Joint Replacement Award, 2008
OREF Research Grant, 2006, $50,000

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**Year Funded:** 2003  
**Principal Investigator:** Yuki Tochigi, MD, PhD  
**Co-Investigator(s):** Charles L. Saltzman, MD; J. James Rudert, PhD; Thomas D. Brown, PhD  
**Project Title:** The role of the ankle articular surfaces in controlling joint motion  
**Grant Amount:** $9,197

**Publications:**
Tochigi Y; Rudert MJ; Amendola A; Brown TD; Saltzman CL. Tensile engagement of the peri-ankle ligaments in stance phase. Foot & Ankle International, 26(12):1067-73, 2005

Tochigi Y; Rudert MJ; Saltzman CL; Amendola A; Brown TD. The contribution of articular surface geometry to ankle stabilization. J Bone Joint Surg Am, 88(12):2704-13, 2006

**Presentations:**
Tochigi Y; Amendola A; Ruder MJ; Baer TE; Brown TD; Saltzman CL. "The Role of the Peri-ankle Ligaments in Stance Phase." AOFAS Annual Meeting, Hilton Head, SC, June 2003

Tochigi Y; Ruder MJ; Amendola A; Brown TD; Saltzman CL. "Tensile engagement of the peri-ankle ligaments in stance phase." 50th Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March 2004

Tochigi Y; Rudert MJ; Amendola A; Brown TD; Saltzman CL. "The contribution of articular surface geometry on ankle stabilization." AOFAS Annual Meeting, Boston, MA, July 2005

Tochigi Y; Rudert MJ; Saltzman CL; Amendola A; Brown TD. "The contribution of articular surface geometry on ankle stabilization." 20th Congress of the International Society of Biomechanics and 29th Annual Meeting of the American Society of Biomechanics, Cleveland, OH, July 31-August 5, 2005

Tochigi Y; Rudert MJ; Saltzman CL; Amendola A; Brown TD. "The mechanism of ankle stabilization: the role of articular geometry as the primary restraint." 10th world congress of the Osteoarthritis Research Society International, Boston, Massachusetts, December 8-11, 2005


Tochigi Y; Rudert MJ; Saltzman CL; Amendola A; Brown TD. "The contribution of articular surface geometry on ankle stabilization." 73rd Annual Meeting of the American Academy of Orthopaedic Surgeons, Chicago, Illinois, March 22-26, 2006

**Further Grants / Awards:**
Chiba University Orthopaedic Alumni, April 1, 2005, $2,857

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**Year Funded:** 2004  
**Principal Investigator:** James A. Nunley, MD  
**Co-Investigator(s):** Farshid Guilak, PhD  
**Project Title:** The impact of Interleukin 17 on the Production of Nitric Oxide and Prostaglandin E2 in Normal and Osteoarthritic Human Ankle and Knee Cartilage
Grant Amount: $8,991

Publications:
Chuckpaiwong B; Charles HC; Kraus VB; Guilak F; Nunley JA. Age-Associated Increases in the Size of the Infrapatellar Fat Pad in Knee Osteoarthritis as Measured by 3T MRI. Journal of Orthopaedic Research, www.interscience.wiley.com. 9999:1–6, 2010

Presentations:
Fermor B. "Inflammatory Mediators and Mechanical Loading of the Joint." European Calcified Tissues Society, Prague, 2006


Guilak F. "Biomechanics and inflammation in osteoarthritis: From organism to organelle." Chancellor's Distinguished Lectureship, Louisiana State University, 2006

Guilak F. "Biomechanics, obesity, and osteoarthritis: Is inflammation the link?" Health and Exercise Sciences Seminar. Wake Forest University- Winston-Salem NC, 2006

Further Grants / Awards:
none

Year Funded: 2004
Principal Investigator: Charles L. Saltzman, MD
Co-Investigator(s): Jason M. Wilken, PhD, MPT
Project Title: The Effect of Walking Speed on Forefoot Motion and Loading in Patients with Ankle Arthodesis or Arthroplasty
Grant Amount: $9,145

Publications:


Rao SR; Saltzman CL; Wilken J; Yak HJ. Increased passive ankle stiffness and reduced dorsiflexion range of motion in individuals with diabetes mellitus. Foot & Ankle International. 27(8):617-22, Aug 2006.


Presentations:
Wilken J; Saltzman C; Yack HJ. "Timing and Expression of the Windlass Mechanism During Gait." APTA combined sections Meeting, Boston MA, February 2007


Wilken J; Saltzman C; Rao S; Yack HJ. "New Insight Into Arch Kinematics During Gait." AOFAS Annual Meeting, Boston MA, July 2005

Wilken J; Saltzman C; Yack HJ. "A New Understanding of Foot Motion: First Metatarsal Kinematics and Arch Elongation During Gait." Combined Sections Meeting, American Physical Therapy Association, New Orleans LA, February 2005

Further Grants / Awards:
none

Year Funded: 2004
Principal Investigator: Brian C. Toolan, MD
Co-Investigator(s): Rebecca A. Cerrato, MD; Rex Haydon, MD, PhD
Project Title: Augmentation of Achilles Tendon Healing Using Gene Therapy with BMP 14 in a Rat Model
Grant Amount: $10,000

Publications:
Bolt P; Clerk N; Luu HH; Kang Q; Kummer J; Deng, Z-L; Olsen K; Primus F; Montag AG; He TC; Haydon RC; Toolan BC. BMP14 gene therapy increases tendon tensile strength in a rat model of Achilles tendon injury. J Bone Joint Surg. 89:1315-1320, 2007

Presentations:
Bolt P; Clerk N; Luu HH; Kang Q; He TC; Haydon RC; Toolan BC. "BMP14 gene therapy effectively increases tendon tensile strength in a rat model of Achilles tendon injury." 73rd Annual Meeting of the American Academy of Orthopaedic Surgeons, March 22-26, 2006, Chicago, IL.

Bolt P; Clerk N; Luu HH; Kang Q; He TC; Haydon RC; Toolan BC. "BMP14 gene therapy effectively increases tendon tensile strength in a rat model of Achilles tendon injury." AOFAS Annual Winter Meeting, Chicago IL, March 25, 2006

Bolt P; Clerk N; Luu HH; Kang Q; He TC; Haydon RC; Toolan BC. "BMP14 gene therapy effectively increases tendon tensile strength in a rat model of Achilles tendon injury." 24th Annual Meeting of the Mid-America Orthopaedic Association, San Antonio TX, April 20, 2006

Bolt P; Clerk N; Luu HH; Kang Q; He TC; Haydon RC; Toolan BC. "BMP14 gene therapy effectively increases tendon tensile strength in a rat model of Achilles tendon injury." 13th Annual Charles B. Huggins Research Conference, University of Chicago Department of Surgery, Chicago IL, May 6, 2006


Bolt P; Clerk N; Luu HH; Kang Q; He TC; Haydon RC; Toolan BC. "BMP14 gene therapy effectively increases tendon tensile strength in a rat model of Achilles tendon injury." 120th Annual Meeting of the American Orthopaedic Association, Asheville NC, June 13-16, 2007
**Further Grants / Awards:**
Dallas B. Phemister Award, Mid America Orthopaedic Association, April 2006

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**Year Funded:** 2005  
**Principal Investigator:** Robert S. Adelaar, MD  
**Co-Investigator(s):** Aaron T. Scott, MD; Travis M. Hendry, MD; Jennifer Wayne, PhD  
**Project Title:** The effect of medial calcaneal osteotomy and lateral column lengthening on forefoot pressures  
**Grant Amount:** $10,000

**Publications:**

**Presentations:**


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**Year Funded:** 2005  
**Principal Investigator:** Eric M. Bluman, MD, PhD  
**Co-Investigator(s):** Mark S. Myerson, MD  
**Project Title:** Biomechanical and Anatomic Analysis of Minimally Invasive Deltoid Ligament Reconstruction  
**Grant Amount:** $6,600

**Publications:**


Chapter in the upcoming textbook: Operative Techniques in Foot and Ankle Surgery

**Presentations:**
2 Podium Presentations at AOFAS  
1 Podium Presentation at Society of Military Orthopaedic Surgeons  
1 Grand Rounds given at Madigan Army Medical Center

**Further Grants / Awards:**
none

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Year Funded: 2005
Principal Investigator: James W. Brodsky, MD
Co-Investigator(s): Fabian E. Pollo, PhD
Project Title: Hindfoot motion after reconstruction for posterior tibial tendon dysfunction
Grant Amount: $6,400

Publications:
Brodsky J; Royer C; Pollo F; Charlick D; Coleman S. Hindfoot Motion and Function Following Tibialis Posterior Tendon Reconstruction. Foot & Ankle International. Accepted for publication February 2009 [Paper #FAI-2008-003346R].

Presentations:
Charlick, A; Brodsky, J; Pollo, F; Coleman, S. "Hindfoot Motion Following Reconstruction for Posterior Tibial Tendon Dysfunction." AOFAS Annual Meeting, Denver CO, 2008.

Further Grants / Awards:
none

Year Funded: 2005
Principal Investigator: Timothy R. Daniels, MD
Project Title: Ankle arthrodesis vs. Ankle arthoroplasty for End Stage ankle arthritis: a prospective functional comparison
Grant Amount: $10,000

Publications:
Glazebrook M; Daniels T; Younger A; Foote CJ; Penner M; Wing K; Lau J; Leighton R; Dunbar M. Comparison of Health-Related Quality of Life Between Patients with End-Stage Ankle and Hip Arthrosis. Journal of Bone & Joint Surgery (American), 90: 499-505, Mar 2008.


Presentations:
Daniels T; Duggal N; Yeung M; Redekop S. "Ankle arthroplasty versus ankle arthrodesis for end-stage ankle arthritis: A functional comparison." The 2nd Joint International Federation of Foot and Ankle Societies Meeting, Naples Italy, Sep 15, 2005

Duggal N; Yeung M; Redekop S; Daniels TR. "A functional analysis of ankle arthroplasty for end-stage ankle arthritis." The 2nd Joint International Federation of Foot and Ankle Societies Meeting, Naples Italy, Sep 15, 2005

Duggal N; Yeung M; Redekop S; Daniels TR. "A functional analysis of ankle arthroplasty for end-stage arthritis." AOFAS Annual Meeting, Boston MA, Jul 14-17, 2005

Further Grants / Awards:
First Prize for Poster competition- AOFAS, Jul 14-17, 2005, $2,000

Best Clinical Paper, International Federation of Foot & Ankle Societies, Sep 15, 2005, $5000
Year Funded: 2005  
Principal Investigator: Johnny T.C. Lau, MD  
Co-Investigator(s): Timothy R. Daniels, MD  
Project Title: A randomized controlled trial of 1st MTP joint fusion compared to 1st MTP hemiarthroplasty in severe hallux rigidus  
Grant Amount: $10,000  
Publications: none  
Presentations: none  
Further Grants / Awards:  
A randomized controlled clinical trial of 1st MTPJ arthrodesis compared to 1st MTPJ hemiarthroplasty in severe hallux rigidus. Lau J, Daniels T, Waddell J, Mahomed N: Canadian Orthopaedic Foundation 2003-2004, $10,000  
A randomized controlled clinical trial of 1st MTPJ arthrodesis compared to 1st MTPJ hemiarthroplasty in severe hallux rigidus. Lau J, Daniels T, Mahomed N: Physician Service Incorporated, 2004-2006, $73,000

Year Funded: 2006  
Principal Investigator: Steven L. Haddad, MD  
Co-Investigator(s): Cary Templin, MD  
Project Title: The effect of continuous irrigation during burring on thermal necrosis and fusion strength in rabbit arthrodesis model  
Grant Amount: $10,000  
Publications: Submitted for publication 2/25/14  
Presentations: AOFAS Winter Meeting, San Diego, Feb. 2007 (Podium)  
AAOS Annual Meeting, San Diego, Feb. 2007 (Poster)  
Further Grants / Awards: none

Year Funded: 2006  
Principal Investigator: Jeffrey Houck, PhD, PT  
Co-Investigator(s): Judith F. Baumhauer, MD  
Project Title: Effect of Bracing and strengthening exercise on foot kinematics and function in subjects with stage II PTTD  
Grant Amount: $10,000  
Publications: none


Presentations:
Neville CG; Flemister SA; Houck J. "Sagittal Plane Ankle and Midfoot Kinematics in Subjects with Stage II PTTD during the stance phase of Gait." AOFAS Annual Meeting, Toronto, July, 2007. (Nominated for Goldner Award.)

Neville CG; Flemister SA; Buamhauer J; Houck J. "Effects of Bracing and Strengthening Exercise on Foot Kinematics and Function in Subjects with Stage II PTTD." AOFAS Annual Meeting, Toronto, July, 2007.


**Further Grants / Awards:**
Effect of Bracing and Strengthening Exercise on PTTD. Primary Investigator- Jeff Houck, Co-Investigator- Adolph S. Flemister, Sponsor: NIH NIAMS 1R15AR054507-01A1, Fall, 2007-Fall, 2010, $209,000

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**Year Funded:** 2006  
**Principal Investigator:** Robin Queen, PhD  
**Co-Investigator(s):** James A. Nunley, MD  
**Project Title:** Second and third MT stress fracture: gender, kinematics, kinetics and plantar plate difference as they relate to stress fracture  
**Grant Amount:** $10,000

**Publications:**


**Presentations:**
Mail NA; Hardaker WM; Queen RM; Nunley JA. "Gender Difference - Dominant and Non-Dominant Asymetry in Measurement of the Medial Longitudinal Arch." AOFAS Annual Meeting, La Jolla CA, 2006.

Queen RM; Abbey AN; Chuckpaiwong B; Nunley JA. "Plantar Loading Comparison between Men and Women and Women with a Previous 2nd or 3rd Metatarsal Stress Fracture." AOFAS Annual Meeting, Denver CO, 2008.


**Further Grants / Awards:**
none

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**Year Funded:** 2006
Principal Investigator: Lew C. Schon, MD
Co-Investigator(s): Gregory P. Guyton, MD
Project Title: Inflammatory cytokines expression in degenerative tendonosis quantitative description and relation to whole tendon mechanical stimuli
Grant Amount: $10,000

Publications:
Courneya JP; Luzina IG; Zeller CB; Rasmussen JF; Bocharov A; Schon LC; Atamas SP. Interleukins 4 and 13 modulate gene expression and promote proliferation of primary human tenocytes, Fibrogenesis & Tissue Repair, 3:9, June 10, 2010


"In Vitro Response of Normal and Diseased Tenocytes to PDGF-BB" this paper is in its final stage 5/11

Presentations:
Numerous grand rounds and lectures including this material

"Effects of Shockwave on Cultured Tenocytes" Union Memorial Hospital, orthopaedic educational luncheon 2007

AOFAS Annual Meeting, Toronto, July, 2007

Lee JW, Han SH, Schon LC, Choi WJ. “Altered gene expression using microarray and real-time PCR in posterior tibial tendon dysfunction.” 15th Triennial Asia Pacific Orthopaedic Association (AOPA) Congress, Seoul, Korea, September 13, 2007. (Research Award winner)


ORS poster on PDGF effect on human tenocytes, 2010.

Further Grants / Awards:
"In Vitro Response of Normal and Diseased Tenocytes to PDGF-BB." BioMimetic Therapeutics, Inc., Franklin, TN, 2007-2008

Union Memorial Hospital Orthopaedic Research Committee, 2007

Medstar Research Institute, 2007

APOA Research Award, 2007

J. Leonard Goldner Award, AOFAS Annual Meeting, 2008

"Bone and tendon healing mechanisms of mesenchymal stem cells and hematopoetic progenitors derived from human adult bone marrow." Maryland Stem Cell Research Fund, 2008-2010 (co-investigator)

Year Funded: 2007
Principal Investigator: Michael S. Pinzur, MD
Co-Investigator(s): Avinash Patwardhan, PhD
Project Title: Load Transfer in Transtibial Amputation with Distal Tibio-Fibular Bond Bridging
Grant Amount: $10,000

Publications:
Under review at Foot & Ankle International 2/24/14

Presentations:
none

Further Grants / Awards:
none

Year Funded: 2007
Principal Investigator: Smita Rao, PhD, PT
Co-Investigator(s): Benedict F. DiGiovanni, MD; Deborah Nawoczenski, PhD, PT
Project Title: Enhancing conservative management of patients with midfoot arthritis
Grant Amount: $10,000

Publications:


Presentations:

Chen Y; Baumhauer J; Nawoczenski D; Hillstrom H; Rao S. “Principal Components Analysis to assess Plantar Pressure Patterns in Individuals with Midfoot Arthritis compared to Control Subjects.” JEGM, Miami, 2010 https://www.amrms.com/ssl/gcmas/2010/.


Rao S. “Understanding Functional Movements in Patients with Arthritis (Study Group with D.” Stiskal, PT, PhD) American College of Rheumatology / Association of Rheumatology Health Professionals Annual Scientific Meeting, Philadelphia, PA, 2009.


Rao S; Baumhauer JF; Tome J; Nawoczenski DA. "Shoe Inserts alter Inter-Segmental Foot Motion and Provide Symptomatic Relief in Patients with Midfoot Arthritis." (Abstract) International Foot and Ankle Biomechanics Congress, Bologna, Italy, 2008

Rao S; Baumhauer J; Tome J; Nawoczenski D. "Comparison of In Vivo Segmental Foot Mobility during Walking and Step Descent in Patients with Midfoot Arthritis." International Foot and Ankle Biomechanics Congress, Bologna, Italy, 2008.


Rao S; Besica L; Baumhauer JF; Nawoczenski DA. "Uncovering Mechanisms underlying the Effectiveness of Shoe Inserts in Patients with Midfoot Arthritis." Combined Sections Meeting, American Physical Therapy Association, Nashville TN, 2008.


Further Grants / Awards:
Arthritis Foundation Chapter Grant (Nawoczenski DA; Rao S)
Arthritis Foundation Post-doctoral fellowship (Rao S)
Association of Rheumatology Health Professionals New Investigator Award (Rao S)
NIAMS New Investigator R03 (Rao S)
Year Funded: 2007  
Principal Investigator: Stacie Ringleb, PhD  
Co-Investigator(s): Claude D. Anderson, MD; Marlene DeMaio, MD  
Project Title: Development of a method to quantify subtalar joint instability  
Grant Amount: $10,000  

Publications:  


Presentations:  
Choisne J; Hoch M; Bawab S; Ringleb SI. “Effect of a Semi-Rigid Ankle Stabilizer on a Simulated Isolated Subtalar Joint Instability,” XXIV Congress of the International Society of Biomechanics, August 4-9, 2013.  

Choisne J; Ringleb SI; Bawab S. “Comparison of Two Methods to Calculate the Helical Axis Parameters in the Subtalar Joint,” 2nd Congress of the International Foot and Ankle Biomechanics Community, Seattle, WA, September 2010.  

Choisne J; Ringleb SI; Samaan M; Bawab S; Naik D. “Understanding the Effects of Lateral Ligament Sectioning on the Stability of the Ankle and Subtalar Joint Using Euler Angles and the Rotation about a Helical Axis,” 23rd Annual Meeting of the American Society of Biomechanics, Providence, RI, August 2010.  

Ringleb SI; Dhakal A; Anderson CD; Bawab S; Paranjape R; DeMaio M. “The Effects of Lateral Ligament Sectioning on the Stability of the Ankle and Subtalar Joint,” 2009 Annual Meeting of the American Society of Biomechanics, State College, PA, August 2009.  

Poster presentation (1st place winner). Naval Medical Center Portsmouth, 2008  
Poster presentation. Old Dominion University, 2008  

Further Grants / Awards:  
Naval Medical Center Portsmouth (Dept of Orthopaedic Surgery) $6,546  
Dissertation Grant, International Society of Biomechanics, 2012  
Grant in Aid, American Society of Biomechanics, 2012  
Student travel award from the International Society of Biomechanics, 2013  

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Year Funded: 2007  
Principal Investigator: Lew C. Schon, MD  
Co-Investigator(s): Su-Young Bae, MD, PhD; Stuart D. Miller, MD  
Project Title: Quantitative and qualitative description: Effects of bone marrow derived growth factors and cytokines on autogenous mesenchymal stem cells of various aspiration sites
Grant Amount: $10,000

Publications:
Jia X; Peters PG; Schon LC. The use of platelet-rich plasma (PRP) in the management of foot and ankle conditions. Operative Techniques in Sports Medicine. Accepted for publication 2011

Textbook chapter written:
Musculoskeletal clinical applications of Stem Cells in Book: Stem Cell Labeling for Delivery and Tracking

Presentations:
Numerous grand rounds and lectures including this material


Courneya J-P; Luzina IG; Orlov MD; Schon LC; Atamas SP. "Bone Marrow Stem Cells Heal Tendon via Secreted Factors." World Stem Cell Meeting, September 2009 (Poster)

Schon LC; Dunn R; Gamez L. "Cell concentrate from autologous bone marrow augments bone grafting in the lower extremity." AOFAS Annual Meeting, Washington DC, July 2010.

Further Grants / Awards:
"High-density nanofilms for orthopedic therapies." Maryland Nanobiotechnology Research and Industry Competition Grant awarded by the Maryland Technology Development Corporation (TEDCO) & Maryland Biotechnology Center, Department of Business and Economic Development (DBED), 2009-2011 (Co-Investigator)

"Bone and tendon healing mechanisms of mesenchymal stem cells and hematopoetic progenitors derived from human adult bone marrow." Maryland Stem Cell Research Fund, 2008-2010 (Co-Investigator)

Year Funded: 2008
Principal Investigator: Timothy C, Beals, MD
Co-Investigator(s): Chris Pelt, MD
Project Title: A biomechanical analysis of a tensioned suture device in the fixation of a ligamentous Lisfranc injury
Grant Amount: $10,000

Publications:

Presentations:


Further Grants / Awards:
none
Year Funded: 2008
**Principal Investigator:** Wayne S. Berberian, MD  
**Co-Investigator(s):** Frank Liporace, MD  
**Project Title:** Early surgical treatment of displaced intra-articular calcaneus fractures through a combined medial and lateral approach  
**Grant Amount:** $9,000

**Publications:** none

**Presentations:**  

**Further Grants / Awards:** none

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Year Funded: 2008  
**Principal Investigator:** Nicholas Forsyth, PhD  
**Co-Investigator(s):** Nicola Maffulli, MD  
**Project Title:** Can human bone marrow-derived stem cells differentiate into tendon-forming cells?  
**Grant Amount:** $9,830

**Publications:** none

**Presentations:**  

**Further Grants / Awards:**  
North Staffordshire Medical institute - £5,000  
British Orthopaedic Foot and Ankle Society - £5,000  
EU FP7 - £350,000  
Medical Research Council - £50,000

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Year Funded: 2008  
**Principal Investigator:** Tricia Hubbard, PhD, ATC  
**Co-Investigator(s):** Robert B. Anderson, MD  
**Project Title:** Lower extremity kinetics and kinematics during stair climbing
in patients with ankle osteoarthritis

**Grant Amount:** $8,669

**Publications:**

**Presentations:**

**Further Grants / Awards:**
none

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**Year Funded:** 2008
**Principal Investigator:** Victor Valderrabano, MD, PhD
**Co-Investigator(s):** Olaf Buettner, MD
**Project Title:** Stiffness and histology analysis of the ankle joint cartilage
**Grant Amount:** $7,200

**Publications:**
Buettner O; Leumann A; Lehner R; Dell-Kuster S; Rosenthal R; Mueller-Gerbl M; Valderrabano V. Histomorphometric, CT arthrographic, and biomechanical mapping of the human ankle. Foot & Ankle International. 34(7):1025-34, Jul 2013.

**Presentations:**


**Further Grants / Awards:**
none

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**Year Funded:** 2009
**Principal Investigator:** Jonathan T. Deland, MD
**Co-Investigator(s):** Irvin Oh, MD
**Project Title:** Plantar pressure analysis in forefoot after different amount of lateral column lengthening: A biomechanical study
**Grant Amount:** $20,000

**Publications:**
Oh I; Imhauser C; Choi D; Williams B; Ellis S; Deland J. Sensitivity of plantar pressure and talonavicular alignment to lateral column lengthening in flatfoot reconstruction. J Bone Joint Surg Am. 95(12):1094-100, Jun 19, 2013.

**Presentations:**
Oh I; Choi D; Williams B; Imhauser C; Ellis S; Deland J. "The Sensitivity of Plantar Pressure and Talonavicular Alignment to Lateral Column Lengthening." International Foot and Ankle Biomechanics Congress, September, 2010.
Oh I; Choi D; Imhauser C; Williams B; Ellis S; Deland J. "Plantar Pressure Analysis in the Forefoot after Different Amounts of Lateral Column Lengthening." AAOS, February, 2011.

**Further Grants / Awards:**
none

**Year Funded:** 2009
**Principal Investigator:** John G. Kennedy, MD
**Co-Investigator(s):** Carl W. Imhauser, PhD; Padhraig F. O'Loughlin, MD
**Project Title:** The biomechanics of cartilage damage and repair at the ankle joint
**Grant Amount:** $18,920

**Publications:**


**Presentations:**
none

**Further Grants / Awards:**
none

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**Year Funded:** 2009
**Principal Investigator:** Fabian Krause, MD
**Co-Investigator(s):** Karsten Schwieger, PhD
**Project Title:** Ankle joint pressure in pes cavus after common hindfoot osteotomies
**Grant Amount:** $20,000

**Publications:**
Krause FB; Sutter D; Waehnert D; Windolf M; Schwieger K; Weber M. Ankle Joint Pressure Changes in a Pes Cavovarus Model After Lateralizing Calcaneal Osteotomies. Foot & Ankle International. 31(9): 741-746, 2010.

**Presentations:**
Krause F. "Ankle joint pressure in pes cavovarus after common hindfoot osteotomies." AOFAS Annual Meeting, National Harbor, MD, July, 2010. (IFFAS Award for Excellence winner)


**Further Grants / Awards:**
IFFAS Award for Excellence, AOFAS Annual Meeting, National Harbor, MD, July 2010.

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**Year Funded:** 2009
**Principal Investigator:** Amar Patel, MD  
**Co-Investigator(s):** Judith F. Baumhauer, MD; Deborah Nawoczenski, PhD, PT  
**Project Title:** Effectiveness of Morton’s extension carbon foot plate in the non-operative treatment of hallux rigidus  
**Grant Amount:** $19,550  

**Publications:**  
none  

**Presentations:**  
Morris KK; Tome JM; Patel A; Baumhauer JF; Nawoczenski DA. "The Effects of Morton’s Extension Inserts On Plantar Loading Patterns, Pain, And Function In Individuals With Hallux Rigidus." American Society of Biomechanics meeting, State College, PA, August 2009.  


Nawoczenski DA; Patel A; Mann L; Baumhauer JF. "Improvement in Foot Function Following a Six Week Non-Operative Intervention in Patients with Hallux Rigidus." AOFAS Annual Meeting, National Harbor, MD, July, 2010.  


**Further Grants / Awards:**  
none  

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**Year Funded:** 2010  
**Principal Investigator:** Samuel B. Adams, MD  
**Co-Investigator(s):** Lew C. Schon, MD  
**Project Title:** Metabolic profiling and cytokine analysis of synovial fluid in healthy and end-stage post-traumatic ankle joints  
**Grant Amount:** $20,000  

**Publications:**  
none  

**Presentations:**  


**Further Grants / Awards:**  
none
Year Funded: 2010  
**Principal Investigator:** John G. Anderson, MD  
**Co-Investigator(s):** Donald R. Bohay, MD; Nathan J. Kiewiet, MD; Scott M. Holthusen, MD  
**Project Title:** Gastrocnemius recession versus Achilles tendon debridement with flexor hallucis longus transfer for chronic noninsertional Achilles tendinopathy: A prospective randomized controlled trial  
**Grant Amount:** $20,000

**Publications:** none

**Presentations:**  
GRMEP Research Day 2013

**Further Grants / Awards:** none

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Year Funded: 2010  
**Principal Investigator:** Scott J. Ellis, MD  
**Co-Investigator(s):** Howard Hillstrom, PhD  
**Project Title:** In-vivo comparison of plantar pressures in pes rectus, pes planus, and the adult acquired flatfoot using supine, vertical posture, and gait measurements  
**Grant Amount:** $20,000

**Publications:** none

**Presentations:**  
AOFAS Annual Meeting, San Diego, CA, July 2012.

**Further Grants / Awards:** none

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Year Funded: 2011  
**Principal Investigator:** Paul T. Fortin, MD  
**Co-Investigator(s):** Kevin Baker, MS  
**Project Title:** The effect of a bisphosphonate pretreatment on the enhancement of osseous incorporation and chondrocyte viability of fresh osteochondral allografts  
**Grant Amount:** $20,000

**Publications:**  

**Presentations:**  
Moore D; Baker KC; Maerz T; Vaupel Z; Fortin PT. “In Vivo Bony Incorporation of Fresh Osteochondral Allografts Treated with Bisphosphonates.” AAOS Annual Meeting, Chicago, IL, 2013.

Moore D; Baker KC; Maerz T; Fortin PT. "Influence of Bisphosphonate Pretreatment on Osseous Incorporation and Chondrocyte Viability with Fresh Osteochondral Allografts in Cold Storage." Annual Meeting of the Mid-America Orthopaedic Association (Physician In Training Award Finalis), 2013.

Mid-America Orthopaedic Association, 2013.

**Further Grants / Awards:**
First Place Award in Basic Science Research. OREF Midwest Regional Resident Research Symposium. Chicago, IL, May 2013.

Dallas B. Phemister Physician-In-Training Award, Mid-America Orthopaedic Association, 2013.

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Year Funded: 2011  
**Principal Investigator:** Gregory Gutierrez, PhD  
**Co-Investigator(s):** Kenneth J. Mroczek, MD  
**Project Title:** Proprioception and neuromuscular control following ankle instability surgery  
**Grant Amount:** $20,000  

**Publications:**  
Gutierrez GM; Mroczek K; Rao S; Chapman C; Sheskier S. Proprioception and neuromuscular control following ankle instability surgery. Foot and Ankle International. (In preparation)

**Presentations:**  
Gutierrez GM; Mroczek K; Chapman C; Sheskier S. "Proprioception after ankle instability surgery – A pilot study." Poster Presentation, 5th International Ankle Symposium; Lexington, KY, October 2012.

**Further Grants / Awards:**  
none

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Year Funded: 2011  
**Principal Investigator:** Kevin L. Kirk, DO  
**Co-Investigator(s):** James R. Ficke, MD  
**Project Title:** Early vs delayed weight-bearing after microfracture for osteochondral lesions of the talus  
**Grant Amount:** $7,000  

**Publications:**  
none

**Presentations:**  

**Further Grants / Awards:**  
none

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Year Funded: 2012  
**Principal Investigator:** Thomas Clanton, MD
Co-Investigator(s): Norman Waldrop, MD
Project Title: Radiographic Evaluation of Plantar Plate Injury: An In Vitro Biomechanical Study
Grant Amount: $19,570

Publications:
Foot & Ankle International

Presentations:
Waldrop N; Zirker C; Wijdicks CA; LaPrade R; Clanton T. "Radiographic Evaluation of Plantar Plate Injury: An In Vitro Biomechanical Study." Poster Presentation, AOFAS Annual Meeting, San Diego, CA, June 2012.

Further Grants / Awards:
none

Year Funded: 2012
Principal Investigator: Richard Laughlin, MD
Co-Investigator(s): Greg Boivin, DVM
Project Title: Exercise effect on diabetic (db/db) mice Achilles tendons
Grant Amount: $20,000

Publications:

Presentations:
MidAmerica Ortho Association, San Antonio, TX, 2014.

Further Grants / Awards:
none

Year Funded: 2012
Principal Investigator: Timo Schmid, MD
Co-Investigator(s): Fabian Krause, MD
Project Title: Ankle joint pressure in pes cavus after lateralizing supramalleolar and calcaneal osteotomy (resubmission)
Grant Amount: $20,000

Publications:

Presentations:

Further Grants / Awards:
Year Funded: 2013  
**Principal Investigator:** Josh Baxter, PhD  
**Co-Investigator(s):** Jonathan Deland, MD  
**Project Title:** A biomechanical comparison of a novel spring ligament reconstruction technique with previously reported techniques  
**Grant Amount:** $15,500  

**Publications:**  
no report due  

**Presentations:**  
no report due  

**Further Grants / Awards:**  
no report due

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Year Funded: 2013  
**Principal Investigator:** Mark Drakos, MD  
**Co-Investigator(s):** Jeremy La Mothe, MD; Josh Baxter, PhD  
**Project Title:** Syndesmotic disruption: Changes in tibiofibular motion and ankle contact stresses  
**Grant Amount:** $14,920  

**Publications:**  
no report due  

**Presentations:**  
no report due  

**Further Grants / Awards:**  
no report due

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Year Funded: 2013  
**Principal Investigator:** Zijun Zzhang, PhD, MD  
**Co-Investigator(s):** Lew Schon, MD  
**Project Title:** Adipogenesis of adipose tissue derived mesenchymal stem cells in foot fat pad  
**Grant Amount:** $19,345  

**Publications:**  
no report due  

**Presentations:**  
no report due  

**Further Grants / Awards:**  
no report due