

BRIAN SVERCAUSKI BAUM, PH.D.
Curriculum Vitae

Associate Professor
School of Physical Therapy
Health and Exercise Science Program
Regis University

3333 Regis Boulevard
Denver, Colorado 80021
USA

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CONTACT INFORMATION

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EDUCATION

- 2012 Doctor of Philosophy (Kinesiology, Biomechanics)
The University of Maryland, College Park – College Park, Maryland
Advisor: Jae Kun Shim, Ph.D.
Dissertation: Kinetics in individuals with unilateral transtibial amputations using running-specific prostheses.
- 2001 Master of Science (Kinesiology, Biomechanics)
Louisiana State University – Baton Rouge, Louisiana
Advisor: Li Li, Ph.D.
Thesis: Investigation of the differences between inertial and cadence effects on neuromuscular coordination during cycling.
- 1999 Bachelor of Science (Kinesiology)
Louisiana State University – Baton Rouge, Louisiana

PROFESSIONAL HISTORY

Associate Professor

School of Physical Therapy, Health and Exercise Science Program

REGIS UNIVERSITY
DENVER, COLORADO
August 2019 –

- Coordinate and teach undergraduate courses in the Health and Exercise Science (HES) curriculum; direct research protocols, grant applications, and manuscript submissions; research mentor for undergraduate students within the HES program and doctoral students within the School of Physical Therapy. Curriculum advisor for HES students. Serve on university, college, and school level programmatic committees; perform academic journal reviews; and serve on academic society committees.

Assistant Professor

School of Physical Therapy, Health and Exercise Science Program

REGIS UNIVERSITY
DENVER, COLORADO
October 2014 – July 2019

- Coordinate and teach courses in biomechanics, physiology, anatomy, kinesiology, and introduction to health and exercise science; direct research protocols, grant applications, and manuscript submissions; mentor undergraduate students within the Health and Exercise Science (HES) curriculum and doctoral students within the School

of Physical Therapy. Curriculum advisor for HES students. Serve on university, college, and school level programmatic committees; perform academic journal reviews; and serve on academic society committees.

Adjunct Graduate Faculty, Department of Kinesiology

THE UNIVERSITY OF MARYLAND, COLLEGE PARK

COLLEGE PARK, MARYLAND

June 2012 – June 2015

- Mentor graduate students as a member of dissertation/thesis committees and collaborate on research for biomechanics, neuromechanics, and motor control protocols.

Principal Scientist / Portfolio Manager

GENERAL DYNAMICS INFORMATION TECHNOLOGY

CLINICAL AND REHABILITATIVE MEDICINE RESEARCH PROGRAM (CRM RP)

FORT DETRICK, MARYLAND

June 2012-August 2013

- Managed the Rehabilitation of Neuromusculoskeletal Injuries research portfolio within the CRM RP that funds basic, translational, and clinical research in orthopaedic injuries, amputee care, limb salvage, burns and contractures, spinal cord injury, and guidelines for standards of care. Research projects with active funding totaled over \$160M. Provided policy and process oversight for clinical and rehabilitative medicine Congressional programs managed through the US Army Medical Research and Materiel Command (USAMRMC). Devised strategic programmatic plans, formulated and developed program announcements, reviewed and scored proposals, and managed funded awards. Coordinated and advised multidisciplinary researchers and interagency (DoD, VA, NIH) administrators regarding rehabilitation research trends and priorities.

Teaching Assistant, Department of Kinesiology

THE UNIVERSITY OF MARYLAND, COLLEGE PARK

COLLEGE PARK, MARYLAND

August 2009 – June 2011

- Instructed laboratory and discussion sections for Biomechanics of Human Movement.

Biomechanical Engineer, Center for Performance & Clinical Research

DEPARTMENT OF ORTHOPAEDICS AND REHABILITATION

ARMED FORCES AMPUTEE PATIENT CARE PROGRAM

WALTER REED ARMY MEDICAL CENTER – WASHINGTON, D.C.

January 2006 – August 2008

- Managed technical and research operations of the Center. Guided and generated amputee research protocols for warrior care including prosthetic and rehabilitation intervention. Performed clinical gait analyses and produced comprehensive reports for clinicians and patients. Developed innovative models and templates for data analysis and reporting.

Biomechanics Consultant

BAYLOR MOTION & SPORTS PERFORMANCE CENTER – DALLAS, TEXAS

USA TRACK & FIELD

January 2006 – August 2008

- Consulted and advised on orthopaedic and sport motion analysis. Developed research protocols and models for advanced analyses. Prepared manuscripts and abstracts for studies.

Manager, Baylor Motion & Sports Performance Center

DEPARTMENT OF ORTHOPAEDIC SURGERY
BAYLOR UNIVERSITY MEDICAL CENTER — DALLAS, TEXAS
January - December 2005

- Managed all aspects of daily operation for Center. Oversaw and directed research activities of Center staff, Foot & Ankle Surgery Fellows, interns, and volunteers. Prepared grants and manuscripts for studies. Developed innovative models and templates for data analysis and reporting.

Faculty Member, AAOS Postgraduate Orthopaedic Foot & Ankle Surgery Fellowship

DEPARTMENT OF ORTHOPAEDIC SURGERY
BAYLOR UNIVERSITY MEDICAL CENTER – DALLAS, TEXAS
August - December 2005

- Mentored and directed Fellows on research techniques, data collection, data analysis, manuscript preparation and submission, grant writing, etc.

Study Coordinator—FDA Clinical Trial of the Scandinavian Total Ankle Replacement (S.T.A.R.) System

ORTHOPAEDIC ASSOCIATES OF DALLAS / LINK ORTHOPAEDICS, INC.
DALLAS, TEXAS
December 2002 - December 2005

- Managed all data for site during clinical trial. Responsible for patient screening; in-depth follow-up regimen; data organization; coordination of data, communications, and supplies between site and study sponsor.

Orthopaedic Research Associate

BAYLOR MOTION & PERFORMANCE LABORATORY
DEPARTMENT OF ORTHOPAEDIC SURGERY
BAYLOR UNIVERSITY MEDICAL CENTER – DALLAS, TEXAS
January 2002 - January 2005

- Coordinated research laboratory activities. Responsible for all aspects of gait analysis testing from subject recruitment and testing to manuscript preparation and submission. Generated custom models for data reduction and analysis. Co-designer of new motion analysis center and co-directed purchase of new motion capture system.

Graduate Assistant Coach

MEN’S AND WOMEN’S VARSITY SWIMMING TEAMS
LOUISIANA STATE UNIVERSITY
BATON ROUGE, LOUISIANA
1999-2001

- Coached workout sessions and meets; specialized in sprinters, stroke, start, and turn techniques.

Research Assistant, Teaching Assistant, and Instructor

DEPARTMENT OF KINESIOLOGY

LOUISIANA STATE UNIVERSITY
BATON ROUGE, LOUISIANA
1999-2000

•Assisted in subject recruitment, testing, data reduction and analysis, presentation preparation for study on practice schedule effects on learning. Assisted with instruction of Laboratory Techniques of Motor Learning. Instructed Beginning, Intermediate, and Advanced Swimming and First Aid.

RESEARCH AND SCHOLARSHIP

Research Funding:

Extramural Funded Awards (Completed):

Total: \$1,351,188

1. Brodsky JW (PI), **Baum BS** (AI), *Reducing the Cost and Improving the Treatment of Ulcers in Diabetes*, Orthopaedic Research and Education Foundation, July 2003, **\$75,624**.
2. McCain KJ (PI), **Baum BS** (AI), *Comparison of Traditional Gait Training Methods to Body Weight Support Treadmill Training in Acute Stroke Patients*, Baylor Institute for Rehabilitation Research Fund, June 2004, **\$85,287**.
3. Bonsell S (PI), **Baum BS** (AI), *The Accuracy of a Screening Echocardiogram in Detecting Idiopathic Hypertrophic Cardiomyopathy During the Athletic Pre-Participation Physical*, National Athletic Trainers' Association Research and Education Foundation, August 2004, **\$47,774**.
4. Schnall B (PI), **Baum BS** (AI), *Biomechanical and Metabolic Analysis of Amputees Carrying Military Loads to Meet Return to Duty Requirements*, Military Amputee Research Program, July 2006, **\$29,210**.
5. Shim JK (PI), **Baum BS** (Project Coordinator), *Determining the Marker Configuration and Modeling Technique to Optimize the Biomechanical Analysis of Running-Specific Prostheses*, Department of Defense Hypothesis Development Award, Award #W81XWH-09-2-0067, August 2009, **\$201,293**.
6. Shim JK (PI), **Baum BS** (AI), *Adaptation of a New Running Shoe*, Maryland Industrial Partnerships, 2011, **\$698,000**.
7. Shim JK (PI), **Baum BS** (AI), *Neuromechanics Research in Amputee Locomotion*, Freedom Innovations, 2011, **\$60,000**.
8. Shim JK (PI), **Baum BS** (AI, Project Coordinator), *A New Biomechanical Model to Examine Joint Control Adaptations during Running in Individuals with Lower Extremity Amputation*, National Institute of Arthritis and Musculoskeletal and Skin Disease (NIAMS) R03 Award, April 2012, **\$152,000**.
9. Sepp LA (PI), **Baum BS** (Faculty Advisor), Nelson-Wong E (Faculty Advisor), Silverman AK (Faculty Advisor) *Performance and Injury Risk during Running in People with a Transtibial Amputation*, American Society of Biomechanics Graduate Student Grant-In-Aid, June 2018 – May 2019, **\$2,000**.

Extramural Funded Awards (In Progress):

Total: \$697,999

1. **Baum BS** (PI), Nelson-Wong E (AI), Silverman AK (AI), *Comparing Running-Specific and Traditional Prostheses during Running: Assessing Performance and Risk*, Department of Defense Orthotics and Prosthetics Outcomes Research Award, Award #W81XWH-15-1-0518, August 2015 – August 2019, **\$697,999**.

Extramural Awards Pending:

1. **Baum BS** (PI), Man C (AI), *Effects of Varying Alignment on Biomechanical Loading during Injury-Prone Yoga Postures*, National Institute of Arthritis and Musculoskeletal and Skin Disorders, R15 AREA Grant, January 2019, \$358,771.

Intramural Funded Awards (Completed):

Total: \$14,896

1. **Baum BS** (PI), *Determining Moments of Inertia for Running-Specific Prosthetic Components*, University of Maryland Department of Kinesiology Graduate Research Initiative Project (GRIP), February 2010 - **\$2,500**.
2. **Baum BS** (PI), *Biomechanical Adaptations of Individuals with Lower Extremity Amputation While Running with Running-Specific Prostheses*, University of Maryland Department of Kinesiology Graduate Research Initiative Project (GRIP), August 2011 - **\$2,500**.
3. **Baum BS** (PI), *Effects of Running Speed on Joint Loading Rates in Individuals With and Without Amputation*, Regis University Faculty Research and Scholarship Grant, February 2016 - **\$5,000**.
4. Benger CJ, Businski T, Herrick D, Ellis-Hernandez K, Shimkus A, Koby M, **Baum BS** (Faculty Advisor). *Effects of Running Speed on Joint Loading Rates and Muscle Activities*, Regis University Student Research and Scholarship Grant, October 2016 - **\$500**.
5. **Baum BS** (PI), *Comparing Running-Specific and Traditional Prostheses during Running*, Regis University Faculty Research and Scholarship Grant, December 2017 – December 2018 - **\$2,790**.
6. Vital O, Hooker K, Haimbaugh C, Hirschman C, **Baum BS** (Faculty Advisor), *Effects of Varying Alignment on Joint Loading During Yoga*, Regis University Student Research and Scholarship Grant, October 2018 - **\$500**.
7. Pratt S, Kochuyt P, Burrell T, Bass M, **Baum BS** (Faculty Advisor), *Differences in Impulse and Joint Work across Stride Frequencies and Speeds in Running*, Regis University Student Travel Grant, March 2019 - **\$477**.
8. Haimbaugh C, Hirschman C, **Baum BS** (Faculty Advisor), *Lumbopelvic Range of Motion in Individuals with Transtibial Amputations across a Range of Speeds*, Regis University Student Travel Grant, March 2019 - **\$314**.
9. Hooker K, Vital O, Rinsem V, Hirschman C, **Baum BS** (Faculty Advisor), *Effects of Varying Alignment on Joint Loading during Yoga*, Regis University Student Travel Grant, March 2019 - **\$315**.

Intramural Funded Awards (In Progress):

N/A

Intramural Awards Pending:

N/A

Not Funded:

1. Shim JK (PI), **Baum BS** (AI), *Biomechanics of Amputee Running*, National Institute of Arthritis and Musculoskeletal and Skin Diseases R21, June 2009 - \$399,948.
2. Kaluf B (PI), **Baum BS** (AI), *Comparative Effectiveness of Prosthetic Ankles with and without Powered Plantarflexion on Patient-Centric Functional Outcomes*, DoD Orthotics and Prosthetics Outcomes Research Award, Award #W81XWH-14-OPORP-OPOA, January 2015 - \$491,440 (chosen as alternate).
3. **Baum BS** (co-PI), Fields TT (co-PI), Mayer S (AI), Coons DR (AI), *Agility Clinic Rehabilitation Program for Optimizing Function after Amputation*, Department of Defense Orthotic and Prosthetic Outcomes Research Program, November 2015, \$229,200.
4. Kaluf B (PI), **Baum BS** (AI), *Comparative Effectiveness of Prosthetic Ankles with and without Powered Plantarflexion on Patient-Centric Functional Outcomes*, Department of Defense Orthotics and Prosthetics Outcomes Research Program, November 2015, \$499,447.
5. **Baum BS** (PI), Hoffman MC (AI), Harvey Z (AI), Sadowski JF (AI), *Gait Influences on In-Socket Pressures after Lower Extremity Amputation*, Department of Defense Peer Reviewed Orthopaedic Research Program Clinical Translational Research Award, April 2017, \$558,300.
6. **Baum BS** (PI), Man C (AI), *Effects of Varying Alignment on Biomechanical Loading during Injury-Prone Yoga Postures*, National Institute of Arthritis and Musculoskeletal and Skin Disorders, R15 AREA Grant, March 2018, \$362,075.

Publications and Presentations:

Book Chapters:

1. Brodsky JW, Pollo FE, **Baum BS**. *Total ankle arthroplasty: A pre- and postoperative analysis of gait*. In *Foot and Ankle Motion Analysis: Clinical Treatment and Technology*. Harris GF, Smith PA, Marks RM eds. CRC Press, Taylor & Francis Group: Boca Raton, FL, pgs. 281-289, 2008.

Peer Reviewed Publications:

1. **Baum BS**, Li L. *Lower extremity muscle activities during cycling are influenced by load and frequency*. *Journal of Electromyography and Kinesiology*, 13(2), 181-190, 2003.
2. Li L, **Baum BS**. *Electromechanical delay estimated by using electromyography during cycling at different velocity*. *Journal of Electromyography and Kinesiology*, 14(6), 647-652, 2004.

3. Brodsky JW, Zubak JJ, Pollo FE, **Baum BS**. *Preliminary gait analysis results after posterior tibial tendon reconstruction: A prospective study*. *Foot & Ankle International*, 25(2), 96-100, 2004.
4. Brodsky JW, **Baum BS**, Pollo FE, Shabat S. *Surgical reconstruction of tibialis posterior tendon tear in adolescents: Report of 2 cases and review of the literature*. *Foot & Ankle International*, 26(3), 218-223, 2005.
5. Leibner ED, Brodsky JW, Pollo FE, **Baum BS**, Edmonds WB. *Unloading mechanisms in the total contact cast*. *Foot & Ankle International*, 27(4), 281-285, 2006.
6. Porter JM, Landin D, Hebert EP, **Baum B**. *The effects of three levels of contextual interference on performance outcomes and movement patterns in golf skills*. *International Journal of Sports Science & Coaching*, 2(3), 243-255, 2007.
7. Brodsky JW, **Baum BS**, Pollo FE, Mehta H. *Prospective gait analysis in patients with first metatarsophalangeal arthrodesis for hallux rigidus*. *Foot & Ankle International*, 28(2), 162-165, 2007.
8. Brodsky JW, Pollo FE, Cheleuitte D, **Baum BS**. *Physical properties and load-attenuating function of dual-density orthotic materials used in diabetic insoles*. *Foot & Ankle International*, 28(8), 880-889, 2007.
9. McCain KJ, Pollo FE, **Baum BS**, Coleman SC, Baker S, Smith PS. *Locomotor treadmill training with partial body weight support prior to over ground gait in adults with acute stroke: A pilot study*. *Archives of Physical Medicine and Rehabilitation*, 89(4), 684-691, 2008.
10. **Baum BS**, Schnall BL, Tis JE, Lipton JS. *Correlation of residual limb length and gait parameters in amputees*. *Injury*, 39(7), 728-733, 2008.
11. Schnall BL, Andrews AM, **Baum BS**. *Gait characteristics of a soldier with traumatic hip disarticulation*. *Physical Therapy*, 88(12), 1568-1577, 2008.
12. Yancosek KE, Schnall BL, **Baum BS**. *Impact of an upper extremity prosthesis on gait: A case study*. *Journal of Prosthetics and Orthotics*, 20(4), 163-166, 2008.
13. Park J, **Baum BS**, Kim YS, Kim YH, Shim JK. *Prehension synergy: use of mechanical advantage during multi-finger torque production tasks*. *Journal of Applied Biomechanics*, 28(3), 284-290, 2012.
14. **Baum BS**, Schultz MP, Tian A, Shefter B, Wolf EJ, Kwon HJ, Shim JK. *Amputee locomotion: Determining the inertial properties of running-specific prostheses*. *Archives of Physical Medicine and Rehabilitation*, 94(9), 1776-1783, 2013.
15. Hobara H, **Baum BS**, Kwon HJ, Miller RH, Ogata T, Kim YH, Shim JK. *Amputee locomotion: Spring-like leg behavior and stiffness regulation using running-specific prostheses*. *Journal of Biomechanics*, 46(14), 2483-2489, 2013.
16. Hobara H, **Baum BS**, Kwon HJ, Shim JK. *Running mechanics in amputee runners using running-specific prostheses*. *Japanese Journal of Biomechanics in Sports and Exercise*, 17(1), 53-61, 2013.
17. Hobara H, **Baum BS**, Kwon HJ, Linberg A, Wolf EJ, Miller RH, Shim JK. *Amputee locomotion: lower extremity loading using running-specific prostheses*. *Gait & Posture*, 39(1), 386-390, 2014.
18. **Baum BS**, Hobara H, Kim YH, Shim JK. *Amputee locomotion: Ground reaction forces during submaximal running with running-specific prostheses*. *Journal of Applied Biomechanics*, 32(3), 287-294, 2016.

19. Kiernan D, Miller RH, **Baum BS**, Kwon HJ, Shim JK. *Amputee locomotion: Frequency content of prosthetic vs. intact limb vertical ground reaction forces during running and the effects of filter cut-off frequency*. Journal of Biomechanics, 60, 248-252, 2017.
20. Sepp LA, **Baum BS**, Nelson-Wong E, Silverman AK. *Dynamic balance during running using running-specific prostheses*. Journal of Biomechanics, 84, 36-45, 2019.
21. White J, Carson N, **Baum BS**, Reinking MF, McPoil TG. *Use of 2-D sagittal kinematic variables to estimate ground reaction force during running*. International Journal of Sports Physical Therapy, 14(2), 174-179, 2019.
22. **Baum BS**, Hobara H, Koh K, Kwon HJ, Miller RH, Shim JK. *Amputee locomotion: Joint moment adaptations to running speed using running-specific prostheses after unilateral transtibial amputation*. American Journal of Physical Medicine & Rehabilitation, 98(3), 182-190, 2019.
23. Namiki Y, Hashizume S, Sakata H, **Baum BS**, Takamura H, Hobara H. *Effects of running speeds on lower extremity loading in unilateral transfemoral amputees*. Prosthetics & Orthotics International, In Review.
24. Sepp LA, **Baum BS**, Nelson-Wong E, Silverman AK. *Joint work and ground reaction forces during running with daily-use and running-specific prostheses*. Journal of Biomechanics, In Review.

Invited Lectures and Presentations:

1. Pollo FE, **Baum BS**. *Motion analysis of elite runners*. USA Track & Field High Performance Summit, Las Vegas, NV, December 15-16, 2004.
2. **Baum BS**. *New frontiers in gait analysis and clinical applications*. The 13th Annual Meeting of the Case Management Society of America, Dallas/Fort Worth Chapter, Irving, TX, April 21-23, 2005.
3. Pollo FE, **Baum BS**. *Motion analysis of elite middle and long distance runners and the steeplechase hurdle: Part I*. USA Track & Field High Performance Special Summit, Dallas, TX, October 1-2, 2005.
4. **Baum BS**, Pollo FE. *Motion analysis of elite middle and long distance runners and the steeplechase hurdle: Part II*. USA Track & Field High Performance Special Summit, Dallas, TX, October 1-2, 2005.
5. Pollo FE, **Baum BS**, Vaughan R. *Advanced techniques in motion capture and its use in track and field*. USA Track & Field High Performance Summit, Las Vegas, NV, December 13-15, 2005.
6. **Baum BS**, Schnall BL, Lipton JS. *Introduction to gait analysis*. Walter Reed Army Medical Center Physical Medicine & Rehabilitation Resident Inservice, Washington, DC, March 31, 2006.
7. Wolf EJ, Schnall BL, **Baum BS**, Bell JC, Miller JA, Kruger SE. *Assistive Technology and Amputee Rehabilitation at Walter Reed Army Medical Center*. The 4th IASTED International Conference on Telehealth and Assistive Technologies, Baltimore, MD, April 16-18, 2008.
8. **Baum BS**. *The Science of Human Movement*. Davidson Young Scholar Summit, Baltimore, MD, June 21-22, 2008.

9. **Baum BS.** *Rehabilitation of Neuromusculoskeletal Injuries Portfolio Overview.* U.S. Defense Health Program Review and Analysis Meeting, Ft. Detrick, MD, November 6-7, 2012.
10. **Baum BS.** *Rehabilitation of Neuromusculoskeletal Injuries Portfolio Overview.* Annual Meeting of the U.S. Department of Defense Joint Program Committee 8, Ft. Detrick, MD, May 31, 2013.
11. **Baum BS.** *Comparing Running-Specific and Traditional Prostheses during Running: Assessing Performance and Risk.* Academic Affairs Committee Meeting of the Regis University Board of Trustees, Denver, CO, October 2, 2015.
12. **Baum BS.** *Comparing Running-Specific and Traditional Prostheses during Running: Assessing Performance and Risk.* Faculty Research Night, Regis University chapter of the Beta Beta Beta National Biologic Honor Society, Denver, CO, October 6, 2015.
13. **Baum BS.** *Running-Specific Prostheses: Adaptations, Injury Risk, and Promoting Physical Activity.* International Research Forum on Biomechanics of Running-Specific Prostheses, Tokyo, Japan, February 2, 2016. **Keynote Address.**
14. **Baum BS.** *Running after Amputation: Comparing Traditional and Running-Specific Prostheses.* 2nd Annual Colorado Lunch and Learn Seminar, Colorado State Legislature, Denver, CO, March 7, 2016.
15. **Baum BS.** *Running after Amputation: Performance, Injury Risk, and Research at Regis.* Regis University Research and Scholarship Council Symposium, Denver, CO, April 6-7, 2016. **Keynote Address.**
16. **Baum BS,** Gray F, Osterlund L. *Panel Discussion on Grants and Scholarship.* Regis University Faculty Development Day, Denver, CO, October 12, 2016.
17. **Baum BS.** *Power and Work Generated Throughout the Running-Specific Prosthesis Keel during Running.* International Research Forum on Biomechanics of Running-Specific Prostheses, Tokyo, Japan, February 22, 2017.
18. **Baum BS,** Sepp LA, Nelson-Wong E, Silverman AK. *Ground Reaction Forces and Loading Rates when Running with Running-Specific and Daily Use Prostheses.* International Research Forum on Biomechanics of Running-Specific Prostheses, Tokyo, Japan, February 22, 2018.
19. Sepp LA, Nelson-Wong E, **Baum BS,** Silverman AK. *Muscle Activity during Running with a Unilateral Transtibial Amputation.* International Research Forum on Biomechanics of Running-Specific Prostheses, Tokyo, Japan, February 21, 2019.
20. **Baum BS,** Sepp LA, Nelson-Wong E, Silverman AK. *Does Prosthetic Design Influence Peak Joint Moments during Running?* International Research Forum on Biomechanics of Running-Specific Prostheses, Tokyo, Japan, February 21, 2019.
21. **Baum BS.** *Biomechanics research: Developing questions, finding answers (or more questions).* The 9th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 5-6, 2019. **Keynote Address.**
22. **Baum BS,** Klein-Seetharaman J, Pekarek A, Hawkins S. *Charting the Integration of Biomechanics and Wearable Technology.* Panel Discussion, Catalyst HTI, Denver, CO, April 24, 2019.

Abstracts and Research Presentations:

1. Landin D, **Baum B**, Grisham W, Hebert EP. *Practice schedule effects on learning the golf putt and pitch*. AAHPERD National Convention, Cincinnati, OH, March 27-31, 2001.
2. **Baum B**. *Cadence versus inertial effects on neuromuscular coordination during cycling*. SEACSM conference Student Symposium, Columbia, SC, January 25-27, 2001.
3. Mooney L, **Baum B**, Li L. *Frequency and load effects on lower extremity cycling kinematics*. Proceedings of the 2002 SEACSM conference, Atlanta, GA, January 31 – February 2, 2002.
4. **Baum BS**, Li L. *Investigating the differences between inertial and cadence effects on neuromuscular coordination during cycling*. In proceedings of the IV World Congress of Biomechanics, Calgary, AB, Canada, August 4-9, 2002.
5. Zubak J, Brodsky JW, Pollo FE, **Baum BS**. *Preliminary gait analysis results after posterior tibial tendon reconstruction: A prospective study*. Proceedings of the International Federation of Foot and Ankle Societies triennial meeting, San Francisco, CA, September 12-14, 2002.
6. Pollo FE, Jackson RW, Komdeur P, **Baum BS**, Stein BE. *Femoral rollback is a myth*. In transactions of the 49th annual meeting of the Orthopaedic Research Society, New Orleans, LA, February 1-4, 2003.
7. Leibner ED, Brodsky JW, **Baum BS**, Pollo FE, Edmonds WB. *Unloading mechanism of the total contact cast*. American Orthopaedic Foot and Ankle Society, 19th Annual Summer Meeting, Final Program, 19:27, Hilton Head, SC, June 27-29, 2003.
8. Brodsky JW, Pollo F, **Baum B**. *Intermediate-term outcome analysis of lower extremity reduction surgery*. American Orthopaedic Foot and Ankle Society, 19th Annual Summer Meeting, Final Program, 19:71, Hilton Head, SC, June 27-29, 2003.
9. **Baum BS**, Pollo FE, Jackson RW, Komdeur P, Calton E. *Measuring dynamic knee motion with an instrumented spatial linkage device*. Proceedings of the 8th Annual Meeting of the Gait and Clinical Movement Analysis Society, Wilmington, DE, May 7-10, 2003.
10. Pollo FE, Jackson RW, Komdeur P, **Baum BS**, Stein BE. *Femoral rollback during walking is a myth*. Proceedings of the 8th Annual Meeting of the Gait and Clinical Movement Analysis Society, Wilmington, DE, May 7-10, 2003.
11. Li L, **Baum B**. *Electrical mechanic delays measured by peak muscular activities during cycling with different cadences*. Proceedings of the 2003 American College of Sports Medicine conference, San Francisco, CA, May 28-31, 2003, MSSE (May, 2003 supplement), p. s266.
12. Leibner ED, Brodsky JW, **Baum BS**, Pollo FE, Edmonds WB. *Unloading mechanisms of the total contact cast*. Proceedings of the 23rd annual meeting of the Israel Orthopedic Association, Tel-Aviv, Israel, December 17-18, 2003.
13. Pollo FE, Leibner ED, Brodsky JW, **Baum BS**. *Unloading mechanism in the total contact cast*. Proceedings of the 9th Annual Meeting of the Gait and Clinical Movement Analysis Society, Lexington, KY, April 21-24, 2004.
14. **Baum BS**, Edmonds WB, Brodsky JW, Pollo FE. *Variability in the mechanical effects of casts*. Proceedings of the 9th Annual Meeting of the Gait and Clinical Movement Analysis Society, Lexington, KY, April 21-24, 2004.

15. Brodsky JW, Mehta H, Pollo FE, **Baum BS**. *Prospective analysis of gait in patients with first MTP arthrodesis for hallux rigidus*. Proceedings of the 5th Congress of the European Foot and Ankle Society, Montpellier, France, April 29-May 1, 2004.
16. Jackson RW, Pollo FE, **Baum BS**, Komdeur P, Calton E. *Measuring dynamic knee motion with an instrumented spatial linkage device*. Proceedings of the 59th Annual Meeting of the Canadian Orthopaedic Association, Calgary, Canada, June 18-20, 2004.
17. Jackson RW, Pollo FE, **Baum BS**. *The three dimensional kinematic analysis of knee motion*. Annual Meeting of the Texas Orthopaedic Association, Irving, TX, May 13-14, 2005.
18. Li L, **Baum B**. *Lower extremity EMG patterns during cycling changed with both pedaling frequency and additional loading*. Proceedings of the 23rd Symposium of the International Society of Biomechanics in Sports, Beijing, China, August 22-27, 2005.
19. Mabrey JD, Rathjen KW, Schubert RD, **Baum BS**, Pollo FE. *Hip kinematics and kinetics in walking and stair ascent/descent in patients with reduced incision total hip arthroplasty*. Proceedings of the 57th Annual Meeting of the Orthopaedic Research Society, Chicago, IL, March 19-22, 2006.
20. Bonsell SB, Pollo FE, Laird PW, Ikemba C, Franks BR, **Baum BS**, Taylor WF. *The accuracy of screening echocardiography in detecting hypertrophic cardiomyopathy in the pre-participation athletic physical*. NATA Annual Meeting & Clinical Symposium, Atlanta, GA, June 15-18, 2006.
21. Schnall BL, **Baum BS**, Lipton JS. *Gait characteristics of a young military amputee with traumatic hip disarticulation in early rehabilitation*. 1st Joint ESMAC-GCMAS Meeting, Amsterdam, Netherlands, September 28-30, 2006.
22. Lipton JS, **Baum BS**, Schnall BL, Rosner MK, Kuklo TR. *Quantifying gait pre and post surgery for spondylolisthesis*. 1st Joint ESMAC-GCMAS Meeting, Amsterdam, Netherlands, September 28-30, 2006.
23. **Baum BS**, Lipton JS, Schnall BL, Tis JE. *Residual limb length and gait kinematics in transfemoral and knee disarticulation amputees: Preliminary results*. 1st Joint ESMAC-GCMAS Meeting, Amsterdam, Netherlands, September 28-30, 2006.
24. Brodsky JW, Pollo FE, **Baum BS**. *Results of gait analysis after S.T.A.R. total ankle arthroplasty*. Annual Meeting of the American Academy of Orthopaedic Surgeons, San Diego, CA, February 14-18, 2007.
25. Pollo FE, Brodsky JW, Coleman S, **Baum BS**. *Hindfoot motion after reconstruction for posterior tibial tendon dysfunction*. Podium presentation at the 12th Annual Meeting of the Gait and Clinical Movement Analysis Society, Springfield, MA, April 11-14, 2007.
26. Schnall BL, **Baum BS**. *Pelvic kinematics during gait of patients with traumatic transfemoral amputations*. The 12th Annual Meeting of the Gait and Clinical Movement Analysis Society, Springfield, MA, April 11-14, 2007.
27. **Baum BS**, Schnall BL. *Ground reaction forces during gait after traumatic transfemoral amputation*. Podium presentation at the 12th Annual Meeting of the Gait and Clinical Movement Analysis Society, Springfield, MA, April 11-14, 2007.
28. Schnall BL, **Baum BS**, Beachler MD, Tis JE. *Gait analysis of a bilateral transtibial amputee wearing microprocessor vs. energy storage and return feet*. The 12th World Congress of the International Society of Prosthetics and Orthotics, Vancouver, Canada, July 28-August 3, 2007.

29. Schnall BL, Yancosek K, **Baum BS**. *Gait of a multiple limb amputee with and without an upper extremity prosthesis*. The 12th World Congress of the International Society of Prosthetics and Orthotics, Vancouver, Canada, July 28-August 3, 2007.
30. **Baum BS**, Schnall BL, Warren JR, Harvey ZT. *Gait after manipulating the shock module in a prosthesis: A case report*. The 12th World Congress of the International Society of Prosthetics and Orthotics, Vancouver, Canada, July 28-August 3, 2007.
31. Schnall BL, Wolf EJ, **Baum BS**, Bensel CK, Gambel J. *Metabolic analysis of an amputee carrying military loads to meet army return to duty requirements*. The 13th Annual Meeting of the Gait and Clinical Movement Analysis Society, Richmond, VA, April 2-5, 2008.
32. Bell JE, **Baum BS**, Schnall BL, Wolf EJ. *Determining a simple marker set to identify lordosis*. The 13th Annual Meeting of the Gait and Clinical Movement Analysis Society, Richmond, VA, April 2-5, 2008.
33. Wolf EJ, **Baum BS**, Schnall BL. *Instantaneous velocity of patients with traumatic amputation during self selected walking*. The 13th Annual Meeting of the Gait and Clinical Movement Analysis Society, Richmond, VA, April 2-5, 2008.
34. **Baum BS**, Wolf EJ, Linberg AA, Schnall BL, Bell JE. *Symmetry in unilateral transfemoral amputees with and without dynamic knee flexion during stance*. The 13th Annual Meeting of the Gait and Clinical Movement Analysis Society, Richmond, VA, April 2-5, 2008.
35. **Baum BS**, Shim JK. *Optimization and validation of a biomechanical model for running-specific prostheses*. Research Interaction Day, University of Maryland, College Park, College Park, MD, September 18, 2009.
36. Park J, Kim YS, **Baum BS**, Kim YH, Shim JK. *Prehension synergy: Use of a mechanical advantage during multi-finger torque production on mechanically fixed and free objects*. The 26th Southern Biomedical Engineering Conference, College Park, MD, April 30-May 2, 2010.
37. **Baum BS**, Borjjan R, Kim YS, Linberg A, Shim JK. *Optimization and validation of a biomechanical model for analyzing running-specific prostheses*. The 26th Southern Biomedical Engineering Conference, College Park, MD, April 30-May 2, 2010.
38. **Baum BS**, Borjjan R, Linberg A, Koh K, Shim JK. *Optimization and validation of a biomechanical model for running-specific prostheses*. The 15th Annual Meeting of the Gait and Clinical Movement Analysis Society, Bethesda, MD, April 26-29, 2011.
39. Hobara H, **Baum BS**, Shim JK. *Spring-mass characteristics during overground running in amputees using running-specific prostheses*. Annual Meeting of the American Society of Biomechanics, Gainesville, FL, August 15-18, 2012.
40. **Baum BS**, Schultz MP, Tian A, Hobara H, Kwon HJ, Shim JK. *Determining the inertial properties of running-specific prostheses*. Annual Meeting of the American Society of Biomechanics, Gainesville, FL, August 15-18, 2012.
41. **Baum BS**, Tian A, Schultz MP, Hobara H, Linberg A, Wolf EJ, Shim JK. *Ground reaction force and temporal-spatial adaptations to running velocity when wearing running-specific prostheses*. Annual Meeting of the American Society of Biomechanics, Gainesville, FL, August 15-18, 2012.
42. Hobara H, **Baum BS**, Kwon HJ, Shim JK. *Dynamic joint stiffness during running in transtibial amputees using running-specific prostheses*. 4th Congress of the Asian Society of Sport Biomechanics, Hokkaido, Japan, September 11-13, 2012.

43. **Baum BS**, Hobara H, Shim JK. *Joint moment adaptations in individuals with unilateral transtibial amputation using running-specific prostheses*. The 14th International Society of Prosthetics and Orthotics World Congress, Hyderabad, India, February 4-7, 2013.
44. Hobara H, **Baum BS**, Kwon HJ, Shim JK. *Vertical loading rate using running-specific prostheses in transtibial amputees*. The 24th Congress of the International Society of Biomechanics, Natal, Brazil, August 4-9, 2013.
45. **Baum BS**, Hobara H, Shim JK. *Joint moment adaptations to running after amputation*. The 2015 Regis University Research and Scholarship Council Symposium, Denver, CO, April 8, 2015.
46. **Baum BS**, Hobara H, Shim JK. *Joint power adaptations to running speed in individuals with amputation using running-specific prostheses*. The 39th Annual Meeting of the American Society of Biomechanics, Columbus, OH, August 5-8, 2015.
47. **Baum BS**, Hobara H, Shim JK. *Running-specific prosthesis modeling effects on joint moments during overground running*. The 39th Annual Meeting of the American Society of Biomechanics, Columbus, OH, August 5-8, 2015.
48. Johnson H, **Baum BS**. *Keel power generation and absorption within running-specific prostheses*. The 6th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 15-16, 2016.
49. Shimkus A, Bengner CJ, Koby M, Herrick D, Businski T, Ellis-Hernandez K, **Baum BS**. *Effects of running speed on knee force loading rates*. The 7th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 7-8, 2017.
50. Bengner CJ, Koby M, Ellis-Hernandez K, Shimkus A, Businski T, Herrick D, **Baum BS**. *Effects of running speed on knee joint moment loading rates*. The 7th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 7-8, 2017.
51. Doherty KO, **Baum BS**. *Knee joint loading rates during running after unilateral transtibial amputation*. The 7th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 7-8, 2017.
52. Sepp LA, **Baum BS**, Nelson-Wong E, Silverman AK. *Whole-body angular momentum during running using running-specific prostheses*. The 7th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 7-8, 2017.
53. **Baum BS**. *Effects of running speed on joint loading rates*. Regis University Research and Scholarship Council Celebration of Scholarship and Research, Denver, CO, April 11, 2017.
54. Shimkus A, Bengner CJ, Koby M, Herrick D, Businski T, Ellis-Hernandez K, **Baum BS**. *Effects of running speed on knee force loading rates*. Regis University Research and Scholarship Council Celebration of Scholarship and Research, Denver, CO, April 11, 2017.
55. Sepp LA, **Baum BS**, Nelson-Wong E, Silverman AK. *Dynamic balance during running using running-specific prostheses*. The 41st Annual Meeting of the American Society of Biomechanics, Boulder, CO, August 8-11, 2017.
56. **Baum BS**, Johnson H, Hobara H, Shim JK. *Power and work generated throughout the running-specific prosthesis keel during running after amputation*. The 41st Annual Meeting of the American Society of Biomechanics, Boulder, CO, August 8-11, 2017.

57. **Baum BS**, Sepp LA, Nelson-Wong E, Silverman AK. *Comparing running-specific and daily use prostheses during running*. Regis University Research and Scholarship Council's Celebration of Scholarship, Denver, CO, April 4, 2018.
58. Sepp LA, **Baum BS**, Nelson-Wong E, Silverman AK. *Differences in hip work between runners using daily-use and running-specific prostheses*. The 8th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 13-14, 2018.
59. Eustace A, Sepp LA, **Baum BS**, Nelson-Wong E, Silverman AK. *Segment model definition of running-specific prostheses influence joint kinetic calculations*. The 8th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 13-14, 2018.
60. Pryor N, Jacobs D, Jordan K, Koch K, Sepp LA, Nelson-Wong E, Silverman AK, **Baum BS**. *Lower extremity joint forces when running with daily use and running-specific prostheses*. The 8th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 13-14, 2018.
61. Cadman J, Noll S, Vital O, Sepp LA, Nelson-Wong E, Silverman AK, **Baum BS**. *Vertical, braking, and propulsive impulses when running with daily use and running-specific prostheses*. The 8th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 13-14, 2018.
62. Hooker K, Haimbaugh C, Sepp LA, Nelson-Wong E, Silverman AK, **Baum BS**. *Ankle power while running with daily use and running-specific prostheses*. The 8th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 13-14, 2018.
63. Doherty K, **Baum BS**. *Vertical joint loading rates during running after unilateral transtibial amputation*. The 8th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 13-14, 2018.
64. **Baum BS**. *Barriers and solutions to performing research at Regis University*. Regis University Leadership Institute Capstone Event, Denver, CO, May 11, 2018.
65. Sepp LA, **Baum BS**, Nelson-Wong E, Silverman AK. *Hip work in runners with a unilateral transtibial amputation*. The 8th World Congress of Biomechanics, Dublin, Ireland, July 8-12, 2018.
66. Sepp LA, **Baum BS**, Nelson-Wong E, Silverman AK. *Hip work during running using daily-use and running-specific prostheses*. The 42nd Annual Meeting of the American Society of Biomechanics, Rochester, MN, August 8-11, 2018.
67. Eustace A, Sepp LA, **Baum BS**, Nelson-Wong E, Silverman AK. *Effect of number of segments in a running-specific prostheses model on hip and knee kinetics*. The 42nd Annual Meeting of the American Society of Biomechanics, Rochester, MN, August 8-11, 2018.
68. **Baum BS**, Sepp LA, Nelson-Wong E, Silverman AK. *Vertical ground reaction forces and loading rates when running with running-specific and daily use prostheses*. The 42nd Annual Meeting of the American Society of Biomechanics, Rochester, MN, August 8-11, 2018.
69. White J, Carson N, **Baum BS**, Reinking MF, McPoil TG. *Use of 2-dimensional sagittal kinematic variables to estimate ground reaction force during running*. American Physical Therapy Combined Sections Meeting, Washington, DC, January 23-26, 2019.

70. Sepp LA, **Baum BS**, Nelson-Wong E, Silverman AK. *Quantifying hip joint contact loads in runners with a transtibial amputation*. The 9th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 5-6, 2019.
71. Sepp LA, Nelson-Wong E, **Baum BS**, Silverman AK. *Neuromuscular control in runners with transtibial amputation using daily-use and running-specific prostheses*. The 9th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 5-6, 2019. **Winner, Best Doctoral Student Poster.**
72. Hooker K, Vital O, Rinsem V, Hirschman C, Haimbaugh C, **Baum BS**. *Effects of varying alignment on joint loading during yoga*. The 9th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 5-6, 2019.
73. Haimbaugh C, Hirschman C, **Baum BS**. *Lumbopelvic range of motion in individuals with transtibial amputation across a range of speeds*. The 9th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 5-6, 2019.
74. Hirschman C, Sepp LA, Nelson-Wong E, Silverman AK, **Baum BS**. *Tibial angles during running with daily-use and running-specific prostheses*. The 9th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 5-6, 2019.
75. Kochuyt P, Pratt S, Bass M, Burrell T, **Baum BS**. *Effects of step frequency on running kinetics when running at different speeds*. The 9th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, April 5-6, 2019.
76. Hooker K, Vital O, Rinsem V, Hirschman C, Haimbaugh C, **Baum BS**. *Effects of varying alignment on joint loading during yoga*. Regis University Research and Scholarship Symposium, Denver, CO, April 16, 2019. **Winner, Best Poster.**
77. Haimbaugh C, Hirschman C, **Baum BS**. *Lumbopelvic range of motion in individuals with transtibial amputation across a range of speeds*. Regis University Research and Scholarship Symposium, Denver, CO, April 16, 2019.
78. Kochuyt P, Pratt S, Bass M, Burrell T, **Baum BS**. *Do trends in impulse and joint work at altered stride frequencies hold true across running speeds?* Regis University Research and Scholarship Symposium, Denver, CO, April 16, 2019.
79. Sepp LA, Nelson-Wong E, **Baum BS**, Silverman AK. *Muscle activity differences in runners with a transtibial amputation*. Colorado School of Mines Graduate Research and Discovery Symposium, Denver, CO, April 17-18, 2019.
80. **Baum BS**, Sepp LA, Nelson-Wong E, Silverman AK. *Prosthetic design influences peak joint moments during running*. The 27th Congress of the International Society of Biomechanics, Calgary, Canada, July 31-August 4, 2019.
81. Sepp LA, Nelson-Wong E, **Baum BS**, Silverman AK. *Lower-limb muscle activity in runners with a transtibial amputation*. The 27th Congress of the International Society of Biomechanics, Calgary, Canada, July 31-August 4, 2019.
82. Sepp LA, **Baum BS**, Nelson-Wong E, Silverman AK. *Hip joint contact forces during running with a transtibial amputation*. The 27th Congress of the International Society of Biomechanics, Calgary, Canada, July 31-August 4, 2019.

TEACHING AND PROFESSIONAL SERVICE

Courses Taught at the University of Maryland, College Park:

Semester	Course	Course Description	Credit Hours	Course Coordinator
Fall 2009	KNES 300	Biomechanics of Human Movement Lab, 3 sections	3	
Spring 2010	KNES 300	Biomechanics of Human Movement Lab, 4 sections	4	
Fall 2010	KNES 300	Biomechanics of Human Movement Lab, 4 sections	4	
Spring 2011	KNES 300	Biomechanics of Human Movement Lab, 4 sections	4	

Courses Taught at Regis University:

(HES courses at the Undergraduate level; DPT courses at the Graduate level)

Semester	Course	Course Description	Credit Hours	Course Coordinator
Spring 2015	HES 210	Introduction to Health and Exercise Science	3	✓
	HES 376	Applied Human Physiology	3	✓
	HES 377	Applied Human Physiology Lab	1	✓
	HES 451	Biomechanics of Exercise Lab	1	
Summer 2015	DPT 707	Kinesiology II	3	
Fall 2015	HES 430	Physiology of Exercise	3	✓
	HES 431	Physiology of Exercise Lab	1	✓
	HES 375	Applied Human Anatomy Lab	1	
Spring 2016	HES 376	Applied Human Physiology	3	✓
	HES 377	Applied Human Physiology Lab	1	✓
	HES 450	Biomechanics of Exercise	3	✓
	HES 451	Biomechanics of Exercise Lab	1	✓
Summer 2016	DPT 790	Evidence Based Practice (6 students)		
Fall 2016	HES 210	Introduction to Health and Exercise Science	3	✓
	HES 431	Physiology of Exercise Lab	1	✓
	HES 375	Applied Human Anatomy Lab	1	
	DPT 790	Evidence Based Practice (6 students)		
Spring 2017	HES 377	Applied Human Physiology Lab	1	✓
	HES 450	Biomechanics of Exercise	3	✓
	HES 451	Biomechanics of Exercise Lab	1	✓
	DPT 790	Evidence Based Practice (6 students)		
Fall 2017	HES 210	Introduction to Health and Exercise Science	3	✓
	HES 431	Physiology of Exercise Lab	1	✓
	HES 375	Applied Human Anatomy Lab	1	
	HES 490E	Topics in Rehabilitation Research	2	✓
	DPT 790	Evidence Based Practice (4 students)		
Spring 2018	HES 450	Biomechanics of Exercise	3	✓
	HES 451	Biomechanics of Exercise Lab, Section 1	1	✓
	HES 451	Biomechanics of Exercise Lab, Section 2	1	✓
	DPT 790	Evidence Based Practice (4 students)		
Fall	HES 210	Introduction to Health and Exercise Science	3	✓

2018	HES 431	Physiology of Exercise Lab	1	
	HES 375	Applied Human Anatomy Lab, Section 1	1	
	HES 375	Applied Human Anatomy Lab, Section 2	1	
	DPT 790	Evidence Based Practice (4 students)		
Spring 2019	HES 450	Biomechanics of Exercise	3	✓
	HES 451	Biomechanics of Exercise Lab, Section 1	1	✓
	HES 451	Biomechanics of Exercise Lab, Section 2	1	✓
	DPT 790	Evidence Based Practice (4 students)		

Editorial Board:

2015 – present Frontiers in Human Neuroscience (Review Editor)

Journal Reviewer:

2004 – 2006 Foot & Ankle International
2006 – 2008 Military Amputee Research Program
2006 – 2008 Prosthetics & Orthotics International
2010 – present Clinical Biomechanics
2011 – present Archives of Physical Medicine and Rehabilitation
2014 – present Journal of Rehabilitation Research & Development
2015 – present Journal of Applied Biomechanics
2015 – present Perceptual & Motor Skills
2016 – present Journal of Biomechanics
2016 – present Journal of the Royal Society Interface
2016 – present PLOS ONE
2017 – present Medicine & Science in Sports & Exercise
2017 – present Computer Methods in Biomechanics and Biomedical Engineering

Grant Reviewer:

2012 – 2013 Clinical and Rehabilitative Medicine Research Program (CRMRP)
2012 – 2013 Military Operational Medicine Research Program (MOMRP)
2012 – 2013 Congressionally Directed Medical Research Program (CDMRP)
2012 – 2013 Defense Advanced Research Projects Agency (DARPA)
2017 – present Regis University Scholarship and Research Committee
 Faculty Scholarship and Research Grants
 Student Scholarship and Research Grants
 Student Travel Grants
2019 – present Orthotic and Prosthetic Education and Research Foundation

Society Memberships:

2001 – 2008 Gait and Clinical Movement Analysis Society
2015 – present American Society of Biomechanics
2015 – present International Society of Biomechanics
2015 – present Rocky Mountain American Society of Biomechanics

Conference Organization and Service:

2016 Chair, Organization Committee
 Rocky Mountain American Society of Biomechanics (April 16-17, 2016, Estes Park,
 CO, USA)
2018 Organizing Committee

- International Research Forum on Biomechanics of Running Specific Prostheses
(February 22, 2018, Tokyo, Japan)
- 2018 Moderator
- International Research Forum on Biomechanics of Running Specific Prostheses
(February 22, 2018, Tokyo, Japan)
- 2019 Organizing Committee
- International Research Forum on Biomechanics of Running Specific Prostheses
(February 21, 2019, Tokyo, Japan)

Professional Meetings:

- 2017 Working meeting on Use of Prosthetics in World Para Athletics Disciplines
International Paralympic Committee, February 22, 2017, Tokyo, Japan

Regis University Committee Memberships:

- 2014 – present Health and Exercise Science Program Committee (School Level)
- 2015 – present Council for Research & Scholarship Committee (College Level)
- 2016 STEM Research Committee (University Level)
- 2016 Search Committee for Head Strength & Conditioning Coach (60%) /
Health & Exercise Science Faculty Member (40%) at Regis University
- 2017 – present School of Physical Therapy Research Committee (School Level)
- Chair 2017-2019
- 2017 – present University Scholarship and Research Committee (University Level)
- Vice-Chair 2018-2019
- Chair 2019-2020

United States Department of Defense Committee Memberships:

- 2012 – 2013 Clinical and Rehabilitative Medicine Research Program (CRM RP)
Rehabilitation of Neuromusculoskeletal Injuries Scientific Steering
Committee
- 2012 – 2013 Military Operational Medicine Research Program (MOM RP)
Neurotrauma Scientific Steering Committee
- 2012 – 2013 Congressionally Directed Medical Research Program (CDMRP)
Peer Reviewed Orthopaedic Research Program Scientific Steering
Committee
- 2012 – 2013 Defense Advanced Research Projects Agency (DARPA)
DARPA Reliable Neural Technology (RE-NET) Government Oversight
Committee

Advising and Mentoring:

Graduate Student Committees:

- 2012-2013 Alissa Kregling, MA student, University of Maryland, Kinesiology
- 2016-present Lauren Sepp, PhD student, Colorado School of Mines, Mechanical
Engineering

DPT Student Research Advisor:

- 2016-2018 Curtiss (Jenni) Benger, DPT student, Regis University
- 2016-2018 Tara Businski, DPT student, Regis University

2016-2018 Kaelan Ellis-Hernandez, DPT student, Regis University
 2016-2018 Danielle Herrick, DPT student, Regis University
 2016-2018 Maggie Koby, DPT student, Regis University
 2016-2018 Amanda Shimkus, DPT student, Regis University
 2017-2019 Danielle Jacobs, DPT student, Regis University
 2017-2019 Kelsie Jordan, DPT student, Regis University
 2017-2019 Katherine Koch, DPT student, Regis University
 2017-2019 Nathaniel Pryor, DPT student, Regis University
 2018-present Matthew Bass, DPT student, Regis University
 2018-present Timothy Burrell, DPT student, Regis University
 2018-present Paige Kochuyt, DPT student, Regis University
 2018-present Simon Pratt, DPT student, Regis University
 2019-present Seth Garbett, DPT student, Regis University
 2019-present Kristen Hiromasa, DPT student, Regis University
 2019-present Rhandi Jackson, DPT student, Regis University
 2019-present Caitlyn Martinez, DPT student, Regis University
 2019-present Eric Miya, DPT student, Regis University
 2019-present Michelle Perry, DPT student, Regis University

Graduate Student Research Advisor:

2016-2018 Hunter Aronson, DO student, Rocky Vista University
 2016-2018 Emil Patel, DO student, Rocky Vista University
 2016-2018 Holly Johnson, DPT student, Regis University
 2016-2018 Zachary Taillie, DPT student, Regis University
 2016-2019 Nathaniel Pryor, DPT student, Regis University

Undergraduate Student Research Advisor:

2010-2013 Andrea Tian, BA, University of Maryland, Kinesiology
 2011-2013 Melanie Schultz, BA, University of Maryland, Kinesiology
 2015 Austen Davis, Regis University, Health & Exercise Science
 2015-2016 Nicole Hull, Regis University, Health & Exercise Science
 2015-2016 Holly Johnson, Regis University, Health & Exercise Science
 2016 Tyler Connolly, Regis University, Health & Exercise Science
 2016 Nathaniel Pryor, Regis University, Biology
 2016 Karim Sanchez-Pasillas, Regis University, Health & Exercise Science
 2016 Nicholas White, Regis University, Health & Exercise Science
 2016-2017 Francesca Anderson, Regis University, Biology
 2016-2017 Colleen Lopp, Regis University, Biology
 2016-2017 Jennifer Pakieser, Regis University, Biology
 2016-2017 Alyssa Wulfert, Regis University, Biology
 2016-2018 Maria Carew-Chamberlain, Regis University, Nursing
 2016-2018 Kathleen Doherty, Regis University, Health & Exercise Science
 2017-2018 Jordan Cadman, Regis University, Health & Exercise Science
 2017-2018 Paraskevi Constantinides, Regis University, Health & Exercise Science
 2017-2018 Max Fabricant, Regis University, Health & Exercise Science
 2017-2018 Scott Noll, Regis University, Health & Exercise Science
 2017-2019 Charles Haimbaugh, Regis University, Health & Exercise Science
 2017-present Kayla Hooker, Regis University, Biochemistry
 2017-present Oscar Vital, Regis University, Health & Exercise Science

2018-present Caelyn Hirschman, Regis University, Health & Exercise Science
2018-present Victoria Rinsem, Regis University, Health & Exercise Science
2019-present Julia Coombs, Regis University, Health & Exercise Science
2019-present Mary Rankin, Regis University, Health & Exercise Science

CERTIFICATIONS

2007 Certified Computer Assisted Rehabilitation Environment (CAREN) Operator
2015 Certified Yoga Instructor (CYT 200), Integrative Yoga Therapy

AWARDS AND HONORS

1996 All-SEC Second Team, Men's Swimming
1996-1997 Two-time NCAA All-America, Men's Swimming
1995-1998 Chancellor's scholarship for academic excellence
1996-1999 Dean's List, Louisiana State University
1997-1999 Southeastern Conference Scholar-Athlete Honor Roll
1998-1999 Full scholarship, Men's Swimming and Diving, Louisiana State University
1999-2000 Graduate Assistantship, Louisiana State University
Department of Kinesiology
1999-2001 Graduate Assistantship, Louisiana State University
Men's and Women's Swimming & Diving
2008 Outstanding Service Award
Armed Forces Amputee Patient Care Program
2010 Graduate School Summer Research Fellowship (\$5,000 stipend)
University of Maryland, Graduate School
2009-2011 Graduate Teaching Assistantship
University of Maryland, Department of Kinesiology
2010-2011 Distinguished Teaching Assistant Award
University of Maryland, Department of Kinesiology
2011 Ann G. Wylie Dissertation Fellowship (\$10,000 stipend)
University of Maryland, Graduate School
2017-2018 Leadership Development Institute, Selected Member
Regis University
2018 Rueckert-Hartman College of Health Professions Junior Faculty Teaching
Award, Finalist
Regis University

VOLUNTEERING & SERVICE

2002-2005 Coordination/organization of yearly physical exams for Mesquite, North
Mesquite, and Garland, Texas school districts

- 2009 Habitat for Humanity
- 2009-2011 Graduate Council Representative, Department of Kinesiology, University of Maryland, College Park
- 2018 One Tree Planted, Volunteer tree planting to replace fire-damaged regions in the Boulder, CO area
- 2018 Beach cleanup; Waitukubuli National Trail clearing and maintenance, Dominica
- 2018 Boulder PrideFest, Volunteer for Boulder Community Health tent
- 2016-present Amputee Mobility and Running Clinic presented by Hanger, Inc.

PERSONAL INTERESTS

International Travel and Food, Hiking, Yoga, Camping, Golf