

Dustin A. Bruening, Ph.D.

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Email: dabruening@byu.edu

EDUCATION

Ph.D. Biomechanics and Movement Science, 2009, University of Delaware

Advisor: James Richards. Dissertation: "A Kinetic Multi-Segment Foot Model with Preliminary Applications in Clinical Gait Analysis" ([Link](#))

M.S. Exercise Science (Biomechanics), 2005, University of Delaware

Advisor: James Richards. Thesis: "The Development and Testing of an Articulated Figure Skating Boot"

B.S. Mechanical Engineering, 2000, University of Utah

Senior Capstone: "Measuring Infant Lung Volume during High Frequency ventilation"

PROFESSIONAL EMPLOYMENT

Brigham Young University, Provo, UT

Assistant Professor, Department of Exercise Sciences, 2015 – present

Air Force Research Laboratories, Dayton, OH

Director, 3D Human Signatures Laboratory, 2011 – 2015

Biomechanical Engineer, US Air Force, 2012-2015

Biomechanical Engineer, Infoscitex Corp., 2011-2012

Shriners Hospitals for Children, Erie, PA

Manager, Movement Analysis Laboratory, 2010 - 2011

Engineer, Movement Analysis Laboratory, 2006 - 2010

TEACHING EXPERIENCE

Brigham Young University, Provo UT (2015-present)

EXSC 362 – Kinesiology and Biomechanics

EXSC 664 – Biomechanical Modeling

EXSC 693R – Readings Seminar

Mercyhurst College, Erie PA (Adjunct Faculty, 2010)

SPMD 365 - Kinesiology

University of Delaware, Newark DE (Graduate assistant, 2002-2006)

HESC 690 – Biomechanical Methods

HESC 426 – Biomechanics Lab

HESC 120 – Basketball, Volleyball, Strength Training

SCIENTIFIC PUBLICATIONS

Manuscripts in Review

1. **Bruening DA**, Baird AR, Weaver KJ, Rasmussen AT. "Whole Body Kinematic Sex Differences Persist Across Gait Speeds." *Plos One*, in review.
2. Henderson AD, Johnson AW, Rasmussen LG, Peine WP, Symons SH, Curtis KP, Scoresby KA, Ridge ST, **Bruening DA**. "Early Stage Diabetic Neuropathy Reduces Foot Strength and Intrinsic but not Extrinsic Foot Muscle Size." *Journal of Diabetes Research*, in review.
3. McLeod AR, **Bruening DA**, Johnson AW, Ward J, Hunter I. "Optimizing Running Economy through Altered Shoe Bending Stiffness across Speeds." *Footwear Science*, in review.
4. Martineau AD, Collins G, Evans A, Odom A, Seeley M, Fullwood D, Christensen W, **Bruening D**, Bowden A. "Estimating walking human gait knee kinematics with nanocomposite high deflection strain gauges." *Annals of Biomedical Engineering*, in review.
5. Ridge ST, **Bruening DA**, Charles S, Stahl C, Smith D, Reynolds R, Adamo B, Harper B, Adair C, Mawaring P, King D. "IceSense: Validation of an instrumented figure skating blade for measuring on-ice forces." *Sports Engineering*, in review.

Peer-Reviewed Journal Publications

1. Kwon S, **Bruening DA**, Morrin S, Kunz D, Hopkins JT, Seeley M. "Simultaneous Ice and Transcutaneous Electrical Nerve Stimulation Decrease Anterior Knee Pain During Running But Do Not Affect Running Kinematics or Associated Muscle Inhibition." *Clinical Biomechanics*, February 2020; 72:1-7. [doi:10.1016/j.clinbiomech.2019.11.011](https://doi.org/10.1016/j.clinbiomech.2019.11.011).
2. Johnson AW, Stoneman P, McClung M, Van Wagoner N, Corey T, **Bruening D**, Hunter T, Myrer J, Ridge S. "Use of Cine-loops and Structural Landmarks in Ultrasound Image Processing Improves Reliability and Reduces Error in the Assessment of Foot and Leg Muscles." *Journal of Ultrasound in Medicine*, December 2019. [doi: 10.1002/jum.15192](https://doi.org/10.1002/jum.15192).
3. **Bruening DA**, Ridge ST, Jacobs JL, Olsen MT, Griffin DW, Ferguson DH, Bassett KE, Johnson AW. "Functional assessments of foot strength: a comparative and repeatability study." *BMC Musculoskeletal Disorders*, December 2019; 20, 608. [doi: 10.1186/s12891-019-2981-6](https://doi.org/10.1186/s12891-019-2981-6)
4. Henderson A, Johnson AW, Ridge ST, Egbert JS, Curtis KP, Berry L, **Bruening DA**. "Diabetic Gait is Not Just Slow Gait: Gait Compensations in Diabetic Neuropathy." *Journal of Diabetes Research*, November 2019, 4512501. [doi: 10.1155/2019/4512501](https://doi.org/10.1155/2019/4512501).
5. Jacobs JL, Ridge ST, **Bruening DA**, Brewerton KA, Gifford JR, Hoopes DM, Johnson AW. "Passive Hallux Adduction Decreases Lateral Plantar Artery Blood Flow in Low Arch Feet." *Journal of Foot and Ankle Research*, December 2019, 12(1):1-9. [doi: 10.1186/s13047-019-0361-y](https://doi.org/10.1186/s13047-019-0361-y).
6. Kern AM, Papachatzis N, Patterson JM, **Bruening DA**, Takahashi KZ. "Ankle and Midtarsal Joint and Quasi-Stiffness during Walking with Added Mass." *Peer J*, September 19 2019, 7:e7487. [doi: 10.7717/peerj.7487](https://doi.org/10.7717/peerj.7487).
7. Olsen M, **Bruening DA**, Johnson AW, Ridge ST. "The Role of the Midfoot in Drop Landings." *Medicine and Science in Sports and Exercise*, January 2019; 51(1):114-122. [doi:10.1249/MSS.0000000000001765](https://doi.org/10.1249/MSS.0000000000001765)

8. Ridge ST, Olsen MT, **Bruening DA**, Jurgensmeier K, Griffin D, Davis I, Johnson AW. "Walking in minimalist shoes is effective for strengthening foot muscles." *Medicine and Science in Sports and Exercise*, January 2019; 51(1):104-113. [doi:10.1249/MSS.0000000000001751](https://doi.org/10.1249/MSS.0000000000001751)
9. **Bruening DA**, Reynolds R, Adair C, Zapolo P, Ridge ST. "Sport Specific Wearables: a Jump Monitor for Figure Skating." *Plos One*, November 2018; 13(11):e0206162. [doi:10.1371/journal.pone.0206162](https://doi.org/10.1371/journal.pone.0206162)
10. **Bruening DA**, Pohl MB, Takahashi KZ, Barrios JA. "Midtarsal locking, the Windlass Mechanism, and Running Strike Pattern: A Kinematic and Kinetic Assessment." *Journal of Biomechanics*, May 2018: 73, 185-191. [doi:10.1016/j.jbiomech.2018.04.010](https://doi.org/10.1016/j.jbiomech.2018.04.010)
11. **Bruening DA**, Takahashi KZ. "Partitioning Ground Reaction Forces for Multi-Segment Foot Joint Kinetics." *Gait and Posture*, May 2018: 62, 111-116. [doi:10.1016/j.gaitpost.2018.03.001](https://doi.org/10.1016/j.gaitpost.2018.03.001)
12. Takahashi KZ, Worster K, **Bruening DA**. "Energy Neutral: the Human Foot and Ankle Subsections Combine to Produce near Zero Net Mechanical Work during Walking." *Scientific Reports*, November 2017: 7(1), 15404. [Link](#)
13. **Bruening DA**, Cooney TE, Ray MS, Daut GA, Cooney KM, Galey SM. "Multi-Segment Foot Kinematic and Kinetic Compensations in Level and Uphill Walking Following Tibiotalar Arthrodesis." *Foot and Ankle International*, October 2016: 37(10), 1119-1129. [doi: 10.1177/1071100716655205](https://doi.org/10.1177/1071100716655205)
14. Barone R, **Bruening D**, Goodyear C, Bowden D. "Predictive Ability of Anthropomorphic Metrics in Determining Age and Sex of Children." *IET Biometrics*, September 2016: 5(3), 181-189. [doi: 10.1049/iet-bmt.2014.0103](https://doi.org/10.1049/iet-bmt.2014.0103)
15. Schmitz A, Buczek FL, **Bruening DA**, Rainbow MJ, Cooney KM, Thelen, DG. "Comparison of Hierarchical and Six Degree of Freedom Marker Sets in Analyzing Gait Kinematics." *Computer Methods in Biomechanics and Biomedical Engineering (CMBBE)*, February 2016: 19(2), 199-207. [doi:10.1080/10255842.2015.1006208](https://doi.org/10.1080/10255842.2015.1006208)
16. **Bruening DA**, Goodyear CD, Bowden DR, Barone RE. "Gender Recognition from Biologically Guided Anthropometric Features." *International Journal of Biometrics*, 4th quarter 2015: 7(4), 354-372. [doi: 10.1504/IJBM.2015.076137](https://doi.org/10.1504/IJBM.2015.076137)
17. Frimenko R, Whitehead C, Goodyear C, **Bruening D**. "Interactions of Sex and Aging on Spatiotemporal Metrics in Non-Pathological Gait: A Descriptive Meta-Analysis." *Physiotherapy*, September 2015: 101(3), 266-272. [doi:10.1016/j.physio.2015.01.003](https://doi.org/10.1016/j.physio.2015.01.003)
18. Flora J, Lochtefeld D, **Bruening D**, Iftexharuddin K. "Improved Gender Classification Using Non-Pathological Gait Kinematics in Full Motion Video." *IEEE Transactions on Human-Machine Systems*, June 2015: 45(3), 304-314. [doi:10.1109/THMS.2015.2398732](https://doi.org/10.1109/THMS.2015.2398732)
19. **Bruening DA**, Frimenko RE, Goodyear CD, Fullenkamp AM. "Sex Differences in Whole Body Gait Kinematics at Preferred Speeds." *Gait and Posture*, February 2015: 41(2), 540-545. [doi:10.1016/j.gaitpost.2014.12.011](https://doi.org/10.1016/j.gaitpost.2014.12.011)
20. Jacobson B, Cendoma M, Gdovin J, Cooney K, **Bruening D**. "Cervical Spine Motion during Football Equipment Removal Protocols: A Challenge to the All-or-None Principle." *Journal of Athletic Training*, Jan-Feb 2014: 49(1), 42-48. [doi:org/10.4085/1062-6050-48.6.11](https://doi.org/10.4085/1062-6050-48.6.11). Winner of the JAT Kenneth L. Knight outstanding research manuscript award.

21. **Bruening DA**, Ridge ST. "Comparison of Automated Event Detection Algorithms in Pathological Gait." *Gait and Posture*, January 2014: 39(1), 472-477. [doi:10.1016/j.gaitpost.2013.08.023](https://doi.org/10.1016/j.gaitpost.2013.08.023)
22. **Bruening DA**, Cooney KM, Buczek FL. "Analysis of a Kinetic Multi-Segment Foot Model. Part I: Model Repeatability and Kinematic Validity." *Gait and Posture*, April 2012: 35(4), 529-534. [doi:10.1016/j.gaitpost.2011.10.363](https://doi.org/10.1016/j.gaitpost.2011.10.363)
23. **Bruening DA**, Cooney KM, Buczek FL. "Analysis of a Kinetic Multi-Segment Foot Model. Part II: Kinetics and Clinical Implications." *Gait and Posture*, April 2012: 35(4), 535-540. [doi:10.1016/j.gaitpost.2011.11.012](https://doi.org/10.1016/j.gaitpost.2011.11.012)
24. **Bruening DA**, Cooney KM, Buczek FL, Richards JR. "Measured and Estimated Ground Reaction Forces for Multi-Segment Foot Models." *Journal of Biomechanics*, Dec 2010: 43(16), 3222-3226. [doi:10.1016/j.jbiomech.2010.08.003](https://doi.org/10.1016/j.jbiomech.2010.08.003)
25. **Bruening DA**, Crewe A, Buczek FL. "A Simple, Anatomically Based Correction to the Conventional Ankle Joint Center." *Clinical Biomechanics*, Dec 2008; 23(10), 1299-1302. [doi:10.1016/j.clinbiomech.2008.08.005](https://doi.org/10.1016/j.clinbiomech.2008.08.005)
26. **Bruening D** and Richards J. "The Effects of Articulated Figure Skates on Jump Landing Forces." *Journal of Applied Biomechanics*, Nov 2006; 22(4), 285-295. [Link: JAB](#)
27. **Bruening D** and Richards J. "Optimal Ankle Axis Position for Articulated Footwear." *Sports Biomechanics*, July 2005; 4(2), 215-225. [doi:10.1080/14763140508522864](https://doi.org/10.1080/14763140508522864)

Other Publications and Patents

1. Frimenko R, Goodyear C, **Bruening DA**. "Changes in Spatiotemporal Differences Between the Sexes due to Paired Walking." Infoscitex Corp. technical report, June 2016. [Link: DTIC](#).
2. Frimenko R, Whitehead C, **Bruening DA**. "Do Men and Women Walk Differently? A Review and Meta Analysis of Sex Differences in Non-Pathological Gait Kinematics." AFRL technical report, Jan 2014. [Link: DTIC](#).
3. Reed J, Palmer J, Selee T, Hersey R, Bowden D, **Bruening D**, Westbrook L. "Human Characterization and Discrimination Using High-Range Resolution Pulse-Doppler Waveforms." AFRL technical report, July 2013.
4. Loveridge M., **Bruening D**, and Richards J. *Articulated Boot*. US Patent No. D517290. March 21, 2006.
5. **Dustin Bruening**, James Richards, and Angela Smith. "Are Skating Boot Heels Too High?" Professional Skater Magazine, Nov/Dec 2006.
6. **Dustin Bruening**, James Richards, and Angela Smith. "The Articulated Figure Skate." Professional Skater Magazine, May/June 2005.

REFEREED CONFERENCES

(For brevity, list includes only recent conferences with substantial contributions)

1. **Bruening DA**, Petersen SR, Ridge ST. "Assessing plantar foot energetics using integrated shear stress and motion capture." Podium presentation at the *American Society of Biomechanics Annual Meeting*, Calgary, CA, July 31 - August 4, 2019.

2. Petersen SR, Ridge ST, **Bruening DA**. "First Metatarsal Phalangeal Energetics and Walking Speed." Poster presentation at the *American Society of Biomechanics Annual Meeting*, Calgary, CA, July 31 - August 4, 2019.
3. McLeod A, Hunter I, **Bruening D**, Johnson A, Remund K. "Running shoe optimal stiffness and speed." Podium presentation at the *Footwear Biomechanics Symposium*, Kananaskis, CA, July 28 - 30, 2019.
4. Tuttle N, Ridge S, **Bruening D**, Seeley M, Avalos M. "Influence of Generalized Joint Laxity on Landing Ground Reaction Force in Ballet and Modern Dancers." Podium presentation at the *Congress of the European Society of Biomechanics*, Vienna, Austria, July 7-10.
5. Henderson AD, Egbert J, Curtis K, Symons S, Ridge ST, Johnson AW, **Bruening DA**. "Diabetic Gait Is Not Just Slow Gait." Podium presentation at the *Gait and Clinical Movement Analysis Society Annual Meeting*, Frisco, TX, March 26-29, 2019.
6. Baird AR, **Bruening DA**. "Upper Body Sex Differences Increase Across Gait Speeds." Podium presentation at the *Gait and Clinical Movement Analysis Society Annual Meeting*, Frisco, TX, March 26-29, 2019.
7. Petersen S, Ridge ST, **Bruening DA**. "Integrated Motion Capture and Plantar Pressure/Shear Sensor for Multi-Segment Foot Kinetics." Podium presentation at the *Gait and Clinical Movement Analysis Society Annual Meeting*, Frisco, TX, March 26-29, 2019.
8. **Bruening D**, Baird A, Weaver K, Bassett K, Peine W, Macfarlane N, Ridge S. "Sex Differences Persist Across Gait Speeds." Poster presentation at the *American Society of Biomechanics Annual Meeting*, Rochester, MN, August 8-11, 2018.
9. Ridge ST, Reynolds R, Adair C, Zapolo P, **Bruening D**. "Sport-Specific Wearable: A Jump Monitor for Figure Skating." Thematic poster presentation at the *American Society of Biomechanics Annual Meeting*, Rochester, MN, August 8-11, 2018.
10. Kern A, **Bruening D**, Takahashi K. "Walking with Added Mass Influences Ankle and Mid-Tarsal Quasi-Stiffness." Poster presentation at the *American Society of Biomechanics Annual Meeting*, Rochester, MN, August 8-11, 2018.
11. Ridge ST, **Bruening DA**, Jurgensmeier K, Olsen M, Griffin D, Johnson AW, Davis I. "A Comparison of Foot Strengthening Versus Minimal Footwear Use on intrinsic Muscle Size and Strength." Podium presentation at the American Orthopaedic Foot and Ankle Society Annual Meeting, Boston, MA, July 11-14, 2018.
12. Ridge ST, Henderson A, **Bruening DA**, Jurgensmeier K, Olsen M, Griffin D, Johnson AW, Davis I. "Midfoot Angle Changes During Running After an 8-Week Intervention Program." Podium presentation at the American Orthopaedic Foot and Ankle Society Annual Meeting, Boston, MA, July 11-14, 2018.
13. Son SJ, **Bruening DA**, Feland JB, Seeley MK, Hopkins JT. "Biomechanical and Clinical Risk Factors for Recurrent Ankle Sprains in Chronic Ankle Instability: A 6-month Follow-up." Podium presentation at the *NATA annual meeting*, New Orleans, LA, June 26-29, 2018.
14. Christian K, **Bruening D**, Merryweather A. "Foot Characteristics Defined Using a Three-Segment Foot Model during the Stance Phase of Normal Gait as Seen in the Sagittal Plane." Poster presentation at the *Gait and Clinical Movement Analysis Society Annual Meeting*, Indianapolis, IN, May 22-25, 2018.

15. **Bruening D**, Olsen M, Johnson W, Ridge S. "Foot Mechanics in Drop Landings." Podium presentation at the *International Foot and Ankle Biomechanics Meeting*, New York, NY, April 8-11, 2018.
16. Dunbar J, Hoopes D, Ridge ST, **Bruening DA**, Johnson AW. "Great Toe Adduction Decreases Blood Flow to the Plantar Fascia." Podium presentation at the *International Foot and Ankle Biomechanics Meeting*, New York, NY, April 8-11, 2018.
17. Ridge ST, Johnson AW, Dunbar J, Griffin D, Ferguson D, Olsen M, **Bruening DA**. "Measurement of Foot Muscle Strength and Activation." Podium presentation at the *International Foot and Ankle Biomechanics Meeting*, New York, NY, April 8-11, 2018.
18. Olsen M, **Bruening DA**, Johnson AW, Ridge ST. "Static Foot Structure May Predict Midfoot Mechanics." Podium presentation at the *International Foot and Ankle Biomechanics Meeting*, New York, NY, April 8-11, 2018.
19. Johnson AW, Garner K, Olsen M, Dunbar J, **Bruening DA**, Ridge ST. "The Differences in Time to Stability, Foot Muscle Size, and Toe Flexor Strength Between Gymnasts, Cheerleaders, and Non-Athletes." Podium presentation at the *International Foot and Ankle Biomechanics Meeting*, New York, NY, April 8-11, 2018.
20. Jacobson B, Cooney K, Kelly D, Burgess D, Cendoma M, **Bruening D**. "Cervical Spine Movement during American Football Equipment Removal: Supine Versus Torso Tilt, Spine Board Versus Turf." Podium presentation at the *Pennsylvania Academy of Science Annual Meeting*, Indiana, PA, March 23-25, 2018
21. **Bruening D**, Pohl M, Takahashi K, Barrios J. "Running Strike Pattern, Midtarsal Locking, and the Windlass Mechanism." Podium presentation at the *American Society of Biomechanics Annual Meeting*, Boulder, CO, August 8-11, 2017.
22. Henderson A, **Bruening D**. "Arch Structure and Loading Pattern may Predict Running Foot Mechanics." Poster presentation at the *American Society of Biomechanics Annual Meeting*, Boulder, CO, August 8-11, 2017 and at the *Regional Rocky Mountain American Society of Biomechanics Annual Meeting*, Estes Park, CO, April 7-8, 2017.
23. **Bruening D**, Olsen M, Johnson W, Ridge S. "The Role of the Midtarsal Joint in Drop Landings." Thematic Poster presentation at the *American College of Sports Medicine Annual Meeting*, Denver, CO, May 30 – June 3, 2017. Winner of Biomechanics Interest Group (BIG) best abstract award.
24. Martineau A, Tracy J, Collins G, Rosquist P, **Bruening D**, Seeley M, Fullwood D, Bowden A. "A Mobile, Low Profile, and Inexpensive Knee Joint Angle Sensor." Poster presentation at the *American College of Sports Medicine Annual Meeting*, Denver, CO, May 30 – June 3, 2017.
25. **Bruening D**, Takahashi K. "Partitioning Ground Reaction Forces for Multi-Segment Foot Kinetics." Podium presentation at the *Gait and Clinical Movement Analysis Society Annual Meeting*, SLC, UT, May 23-26, 2017. Winner of the best podium award.
26. Cooney T, Jacobson B, Cooney K, Jacobson Z, Lai V, **Bruening D**, Rial C, Diffendaffer A. "Changes in COMP, Shoulder Strength, and Pitching Kinematics Following a Doubling of Consecutive Throws." Poster presentation at the *Orthopaedic Research Society Annual Meeting*, San Diego, CA, March 19-22, 2017.
27. Henderson A, **Bruening D**. "Choosing a multi-segment foot model for sports applications." Poster presentation at the *American College of Sports Medicine Southwest Regional Meeting*, Costa Mesa, CA, October 21-22, 2016.

28. Worster K, **Bruening D**, Takahashi K. "Deconstructing Ankle and Foot Power during Human Walking: A Segment by Segment Approach." Podium Presentation at the *American Society of Biomechanics Annual Meeting*, Raleigh, NC, August 2-5, 2016.

RESEARCH AWARDS

1. Best podium award at the 2017 Gait and Clinical Movement Analysis Society Annual Meeting. Invitation to submit paper for best paper award consideration.
2. Biomechanics Interest Group (BIG) best abstract award at the 2017 American College of Sports Medicine Annual Meeting
3. Journal of Athletic Training Kenneth L. Knight award for most outstanding research manuscript, 2014.

GRANT ACTIVITY

External

1. Quantifying Jump Training Volume and Efficiency in Figure Skating (2019). Source: International Olympic Committee Medical and Scientific Research Fund. Not funded (amount requested = \$90,000). Role: Principal Investigator.
2. Cervical Spine Movement during American Football Equipment Removal: ER vs. On-Field (2016-2017). Source: National Athletic Training Association grant. Not funded (Amount requested = \$32,000). Role: Principal Investigator.
3. A Device to Monitor Jump Count, Jump Height, and Rotation Speed in Figure Skating (2016). Source: United States Figure Skating Association. Funded for \$2,500. Role: Principal Investigator.
4. The effect of a new figure skate blade design on impact forces (2016). Source: HD Sports Limited. Funded for \$11,475. Role: Co-investigator.
5. Data Driven Dynamic Methods in Human Activity Characterization for Persistent Surveillance (2014). Source: National Science Foundation (NSF) EAGER grant. Not funded (Amount requested = \$300,000). Role: Co-investigator.
6. Human Biosignatures and Modeling for Automated Recognition of Human Based Threats (2012). Funding Source: U.S. Air Force Broad Agency Announcement (BAA) contract. Funded for \$47,000,000 total contract value. Role: Co-investigator.
7. Development and Testing of an Articulated Skating Boot (2003). Source: Jackson Ultima, Inc. Funded for \$50,000. Role: Student co-investigator.

Internal

1. Influence of activity level on foot/ankle structure and neuromuscular function: Implications for aging and associated pathologies (2019). Source: BYU Gerontology Research Grants. Funded for \$7,500. Role: Principal Investigator.
2. Comparative Analysis of Low and High End Prosthetic Feet (2018). Source: BYU CURA grant. Funded for \$3,000. Role: Supervisor. Applicants: Kaitlin Abbot, Brevin Banks, Zach Bons, Alyssa Spencer.

3. Examining Differences in Gait between Low-Cost and Traditional Below Knee Prosthetic Leg Designs (2015). Source: BYU ORCA grant. Funded for \$1,500. Role: Supervisor. Applicants: Kelly Bickham and Cheryl Woo.
4. A Mobile Biomechanics Laboratory for Problem Based Learning in EXSC 362 (2015). Source: BYU Teaching Enhancement Grant. Funded for \$5,300. Role: Principal Investigator.
5. Multi-modal Deceptive Behavior Detection (2013). Source: Air Force Office of Scientific Research Grant. Amount Requested: \$1,000,000; not funded. Role: Co-investigator.
6. Mobile Motion Capture for Human Skeletal Modeling in Natural Environments. Air Force Small Business Initiative Grant. Funded for \$1,000,000. Role: Grant Manager.
7. Muscle Length-Tension Relationships in Children with Cerebral Palsy (2008). Source: Shriners Hospitals Research Advisory Board. Funded for \$50,000. Role: Co-investigator.

MENTORING

Committee chair

Lauren Williams	MS (Exercise Sciences)	Graduation Jun 2021
Spencer Petersen	MS (Exercise Sciences)	Graduation Jun 2020
Hwigeum Jeong	MS (Exercise Sciences)	Graduation Jun 2020
Adrienne Henderson	MS (Exercise Sciences)	Graduated Aug 2018
Sunku Kwon	MS (Exercise Sciences)	Graduated Aug 2018

Committee member

Seunguk Han	PhD (Physical Med & Rehab)	Graduation Jun 2022
Hyunwook Lee	MS (Exercise Sciences)	Graduation Jun 2020
Jayson Hatch	MS (Exercise Sciences)	Graduation Jun 2020
Robert Larson	PhD (Physical Med & Rehab)	Graduation Aug 2020
Thomas Hulcher	MS (Kines and Applied Phys - UDel)	Graduated Dec 2019
Aubree McLeod	MS (Exercise Sciences)	Graduated Dec 2019
Kyle Christian	MS (Mech. Engineering – UofU)	Graduation Dec 2019
Adin Martineau	MS (Mechanical Engineering)	Graduated Dec 2018
Julia Dunbar	MS (Exercise Sciences)	Graduated Aug 2018
Melissa Frixione	MS (Exercise Sciences)	Graduated Aug 2018
Mark Olsen	MS (Exercise Sciences)	Graduated Dec 2017
Jun Son	PhD (Physical Med & Rehab)	Graduated Dec 2017
Noelle Tuttle	MS (Exercise Sciences)	Graduated Aug 2017
Kendall Ross	MS (Exercise Sciences)	Graduated Aug 2014

Undergraduate research assistants

2019-2020: Jonathan Egbert (EXSC), Kade Scoresby (EXSC), Jordan Grover (EXSC), Jared Staten (EXSC), Amaya Merrill (EXSC), Bradley Shawen (EXSC), Dallin Jacobs (MEEN), Jonathan Lindsay (MEEN), Makayla Komer (MEEN), Jeff Bednar (MEEN), Joshua Frei (MEEN), Brayden Mayo (MEEN), Nick Hays (MEEN)

2018-2019: Weston Peine (EXSC), Andrew Baird (MEEN), Kelsey Weaver (EXSC), Kevin Curtis (EXSC), Sydney Symons (EXSC), Kade Scoresby (EXSC), Riley Reynolds (MEEN), Andrew Taggart (MEEN), Kaitlin Abbott (EXSC), Brevin Ba (MEEN), Zach Bons (MEEN), Alyssa Spencer (MEEN), Parker King (MEEN), Valerie Smith (MEEN), Luke Dean (MEEN)

2017-2018: Drew Ferguson (EXSC), Kirk Bassett (MEEN), Weston Peine (EXSC), Austin Rasmussen (EXSC), Andrew Baird (MEEN), Kelsey Weaver (EXSC), Riley Reynolds (MEEN), Rebecca Crowley (MEEN), Logan Nielsen (NEURO), Kevin Curtis (EXSC)

2016-2017: Drew Ferguson (EXSC), Abbey Jensen (EXSC), Kirk Bassett (EXSC), Weston Peine (EXSC), Chris Adair (MEEN)

2015-2016: Adrienne Henderson (EXSC), Drew Ferguson (EXSC), Cole Gardner (EXSC)

PROFESSIONAL SERVICE

Society Memberships:

American Society of Biomechanics (ASB)

Gait and Clinical Movement Analysis Society (GCMAS)

American College of Sports Medicine (ACSM)

International Foot and Ankle Biomechanics Community (iFAB)

Academic Committees:

ASB Education Committee (2019 - present)

BYU Graduate Council (2018 - present)

BYU College Computer Users Council (2018 - present)

Ad Hoc Journal Reviewer:

Journal of Biomechanics

Journal of Applied Biomechanics

Gait and Posture

Medicine & Science in Sports & Exercise

Research in Developmental Disabilities

Journal of Neuroengineering and Rehabilitation

Journal of Biomechanical Engineering

Perceptual and Motor Skills

Computer Methods in Biomechanics and Biomedical Engineering

PLOS one

BMC Musculoskeletal Disorders

Journal of Athletic Training

ASME Journal of Biomechanical Engineering

Other Reviews:

BYU CURA grant poster judge, 2019

BYU John A. Widtsoe grant applications, 2015, 2018, 2019

BYU Eliza R. Snow grant applications, 2016

ASB conference, 2016

GCMAS conference, 2011

JEGM conference, 2010

Invited Lectures:

1. "Foot and Ankle Mechanics." BYU Exercise Sciences Department Seminar. Provo, UT, January 25, 2018.

2. "Biofidelic Human Modeling." *Air Force Research Laboratory Branch meeting*. Dayton, OH, March 15, 2012.
3. "The Role of Clinical Gait Analysis in Treatment Decision Making." *Erie County Medical Center Resident Conference*. Buffalo, NY, October 8, 2008.
4. "The Use of Technology in Figure Skating." *Professional Skaters Association Workshop*. Newark, DE, July 2006.
5. "Biomechanics in Figure Skating." *University of Delaware Coaches Workshop*. Newark, DE, September 2003.

Miscellaneous:

Organizer, Visual 3D Users Group Meeting at the Annual Meeting of the Gait and Clinical Motion Analysis Society, Bethesda, MD, April 2011.

Assistant Investigator, United States Figure Skating Association High Performance Testing, Atlanta, GA and Lake Placid, NY, 2004.