Curriculum Vitae

DAVID BENJAMIN LIPPS, Ph.D.

Assistant Professor, Movement Science, School of Kinesiology, University of Michigan
Affiliate Assistant Professor, Biomedical Engineering, College of Engineering, University of Michigan
401 Washtenaw Ave, Ann Arbor, MI 48109. Phone: (734) 647-3131. Email: dlipps@umich.edu

EDUCATION:

2007 – 2012 **University of Michigan** (Ann Arbor, MI)
Ph.D., Biomedical Engineering (2012)
M.S.E., Biomedical Engineering (2009)
Research Advisors: James Ashton-Miller, Ph.D., Edward Wojtys, M.D.

Dissertation: Effect of Gender-Related Differences in Knee Morphology on Peak ACL Strain during Repeated Simulated Pivot Landings: An *in vitro* Investigation

2003 – 2007 **Tulane University** (New Orleans, LA)
B.S.E., Biomedical Engineering
Summa Cum Laude w/ Departmental Honors

PROFESSIONAL EXPERIENCE

2015 – Present **University of Michigan** (Ann Arbor, MI)
Assistant Professor, Movement Science, School of Kinesiology
Affiliate Assistant Professor, Biomedical Engineering, College of Engineering (2016-)
Member, Health Behavior and Outcomes, Rogel Cancer Center (2018 -)

2012 – 2015 **Northwestern University** (Evanston, IL)
Rehabilitation Institute of Chicago (Chicago, IL) (now **Shirley Ryan AbilityLab**)
Postdoctoral Fellow - Sensory Motor Performance Program (2012), Biomedical Engineering (2013 – 2015), and Radiation Oncology (2015)
Research Advisor: Eric Perreault, PhD

2007 – 2012 **University of Michigan** (Ann Arbor, MI)
Graduate Research Assistant, Biomechanics Research Laboratory

FELLOWSHIPS, HONORS & AWARDS:

2018 Best Translation Research Presentation, 2018 International Shoulder Group

2015 – 2017 Susan G. Komen Clinical Postdoctoral Fellow

2013 – 2015 Ruth L. Kirschstein National Research Service Award (T32-HD741822), National Institute of Child Health and Human Development

2012 Student Travel Grant, American Society of Biomechanics

2011 Cabaud Memorial Award (Best Laboratory Research – co-author), American Orthopaedic Society for Sports Medicine (AOSSM)

2011 Best Poster Award (3rd Place), American Orthopaedic Society for Sports Medicine (AOSSM)

2011 Graduate Research Award, University of Michigan Institute for Research on Women and Gender

2010 NCAA Committee Competitive Safeguards and Medical Aspects of Sports Research Award (co-author), American Medical Society for Sports Medicine

2008 – 2011 National Defense Science and Engineering Graduate Fellowship, U.S. Department of Defense

2007 – 2008 Departmental Fellowship, University of Michigan Biomedical Engineering

2007 Best Design Project (2nd Place), Tulane University Biomedical Engineering Senior Design Show

2006 NIH Biomedical Engineering Summer Internship Program (one of sixteen nationally selected undergraduates), National Heart, Lung, and Blood Institute

2003 – 2007 Distinguished Scholar's Award (50% Tuition Waiver), Tulane University

PEER REVIEWED PUBLICATIONS (in reverse chronological order)
[a]Graduate student or [b]Undergraduate student under my supervision

1. [b]Diefenbach B.J., **Lipps D.B.** (2019) External rotation improves 3-D joint position sense of the shoulder. *Human Movement Science.* [Epub ahead of print 2019 Aug 12].
2. Chen T.L., Agresta C.E., **Lipps D.B.,** Provensazo S., Hafer J., Wong D.W., Zernicke R.F., Zhang M. (2019) Plantar fascia stiffness in runners using rearfoot strike and forefoot strike. *Journal of Biomechanics.* 89:65-71.
3. [a]Leonardis J.M., Lyons D., Giladi A., Momoh A.O., & **Lipps D.B.** The functional integrity of the shoulder joint and pectoralis major following subpectoral implant breast reconstruction. *Journal of Orthopaedic Research.* 37(7): 1610-1619.
4. [b]Diefenbach B.J., **Lipps D.B.** (2019) Postural differences in shoulder dynamics during pushing and pulling. *Journal of Biomechanics.* 85:67-73.
5. [a]Leonardis J.M., [b]Diefenbach B.J., Lyons D.A, Olinger T.A, Giladi, A.M, Momoh A.O, & **Lipps D.B.** (2019) The influence of reconstruction choice and inclusion of radiation therapy on functional shoulder biomechanics in women undergoing mastectomy for breast cancer. *Breast Cancer Research and Treatment.* 173(2):447-453.
6. Shahshahani, P.M, **Lipps D.B.**, Galecki A.T. & Ashton-Miller J.A. (2018) On the apparent decrease in Olympic sprinter reaction times. *PLoS ONE*. 13(6):e0198633. PMCID: PMC6021049
7. Gross J.P., Sachdev S., Helenowski I.B., **Lipps D.B.**, Hayes J.P., Donnelly E.D., Strauss J.B. (2018) Radiotherapy Field Design and Lymphedema Risk Following Regional Nodal Irradiation for Breast Cancer. *International Journal of Radiation Oncology Biology Physics*. 102(1): 71-78.
8. [b]Luciani B.D, [b]Desmet D.M., Alkayyali A.A., [a]Leonardis, J.M. & **Lipps D.B.** (2018) Identifying the mechanical and neural properties of the sternocleidomastoid muscles. *Journal of Applied Physiology.* 124(5):1297-1303.
9. [a]Leonardis, J.M., [b]Desmet D.M. & **Lipps D.B.** (2017) Quantifying differences in the material properties of the fiber regions of the pectoralis major using ultrasound shear wave elastography. *Journal of Biomechanics*. 63: 41-46.
10. Cowley J.C., [a]Leonardis J.M., **Lipps D.B.**, & Gates D.H. (2017) The influence of wrist posture, grip type, and grip force on median nerve shape and cross-sectional area. *Clinical Anatomy*, 30(4):470-478.
11. **Lipps D.B.**, Sachdev S, Strauss J.B. (2017) Quantifying radiation dose delivered to individual shoulder muscles during breast radiotherapy. *Radiotherapy and Oncology*. 122(3):431-436. PMCID: PMC5366257
12. **Lipps D.B.**, Oh Y.K., Ashton-Miller J.A., & Wojtys E.M. (2014). An increase in quadriceps tensile stiffness decreases peak anterior cruciate ligament strain during a simulated landing. *Journal of Orthopaedic Research*, 32(3): 423-430.
13. **Lipps D.B.**, Wojtys E.M., & Ashton-Miller, J.A. (2013). Anterior cruciate ligament fatigue failures in knees subjected to repeated simulated pivot landings. *American Journal for Sports Medicine*, 41(5):1058-1066.
14. **Lipps D.B.**, Eckner J.T., Richardson J.K., & Ashton-Miller J.A. (2012). How gender and task difficulty affect a sport-protective response in young adults. *Journal of Sports Sciences*. 31(7):723-730. PMCID: PMC3608833
15. **Lipps D.B.**, Wilson A.M, Ashton-Miller J.A., & Wojtys E.M. (2012). Evaluation of different methods for measuring lateral tibial slope using magnetic resonance imaging. *American Journal for Sports Medicine*, 40(12):2731-2736. PMCID: PMC4091991
16. Eckner J.T., Richardson J.K., Kim H., **Lipps D.B.**, & Ashton-Miller J.A. (2012). A novel clinical test of recognition reaction time in healthy adults." *Psychological Assessment*. 24(1):249-254. PMCID: PMC3643808
17. Oh Y.K., **Lipps D.B.**, Ashton-Miller J.A., & Wojtys E.M. (2012). What strains the anterior cruciate ligament during a pivot landing? *American Journal for Sports Medicine*, 40(3):574-583. PMCID: PMC4800974
18. **Lipps D.B.**, Oh Y.K., Ashton-Miller J.A., & Wojtys E.M. (2012). Morphologic characteristics help explain the gender difference in peak anterior cruciate ligament strain during a simulated pivot landing. *American Journal for Sports Medicine*, 40(1):32-40. PMCID: PMC4800982
19. **Lipps D.B.**, Galecki A.G., & Ashton-Miller J.A. (2011). On the implications of a sex difference in reaction times of sprinters at the Beijing Olympics. *PLoS ONE*. 6(10):e26141. PMCID: PMC3198384
20. Eckner J.T., **Lipps D.B.**, Kim H., Richardson J.K., & Ashton-Miller J.A. (2011). Can a clinical test of reaction time predict a sport-specific functional response? *Medicine & Science in Sports & Exercise.* 43(3):382-387. PMCID: PMC4537056

21. Seidler R.D., Bernard J.A., Burutolu T.B., Fling B.W., Gordon M.T., Gwin J.T., Kwak Y., & **Lipps D.B.** (2010). Motor control and aging: Links to age-related brain structural, functional, and biochemical effects. *Neuroscience & Biobehavioral Reviews.* 34(5):721-733. PMCID: PMC2838968
22. Wen H., Marsolo K.A., Bennett E.E., Kutten K.S., Lewis R.P., **Lipps D.B.**, Epstein N.D., Plehn J.F., & Croisille P. (2008). Adaptive postprocessing techniques for myocardial tissue tracking with displacement-encoded MRI. *Radiology*. 246(1):229-240. PMCID: PMC2881596

PUBLISHED PEER-REVIEWED CONFERENCE PROCEEDINGS: (in reverse chronological order)

1. Sohn M.H., Baillargeon E.M., **Lipps D.B.**, & Perreault EJ. (2017) Stretch reflexes in shoulder muscles are described best by heteronymous pathways. *Biosystems and Biorobotics* 15:141-145. (International Conference on Neurorehabilitation, Segovia, Spain.)
2. **Lipps D.B.,** Baillargeon E., Ludvig D., & Perreault E.J. (2015). Identification of multidimensional shoulder impedance during volitional contractions. *IFAC-PapersOnLine*, 48(28):1369-1374. (Invited podium presentation at the 17th IFAC Symposium on System Identification, Beijing, China.)

CONFERENCE PROCEEDINGS: (in reverse chronological order)

1. [a]Leonardis J., Lyons D.A., Giladi A., Momoh A.O **& Lipps D.B.** (2019) Shoulder biomechanics as a mediator of clinical outcomes following three common breast reconstruction techniques. Poster presentation at 2019 annual meeting of the American Society of Biomechanics (Calgary, AB, Canada).
2. [a]Wolff, W.L., [a]Leonardis J.M., & **Lipps D.B.** Spatial tuning of neural and mechanical properties of the sternocleidomastoid muscle during 3-D torque production. Poster presentation at 2019 annual meeting of the American Society of Biomechanics (Calgary, AB, Canada).
3. **[b]**Chodock, E., Hahn, J., **[b]**Setlock, C.A., & **Lipps D.B**. Identifying predictors of upper extremity muscle elasticity with healthy aging. Poster presentation at 2019 annual meeting of the American Society of Biomechanics (Calgary, AB, Canada).
4. **Lipps D.B.**, [a]Leonardis J.M., [b]Lehmann S, Dess RT, McGinnis G, Strauss JB, Hayman JA, Pierce LJ, Jagsi R. (2018) Mechanical properties of the shoulder and pectoralis major in women undergoing breast conserving therapy with axillary dissection and regional nodal radiotherapy versus sentinel node biopsy and radiotherapy to the breast alone. Poster presentation at 2018 San Antonio Breast Cancer Symposium.
5. [a]Leonardis J.M., [b]Diefenbach B., Lyons D., Olinger T., Momoh A., & **Lipps D.B.** (2018) Biomechanical and patient-reported functional outcomes of the shoulder following mastectomy and breast reconstruction. Podium presentation at 2018 International Shoulder Group meeting (Rochester, MN).
6. [a]Leonardis, J.M., [b]Coflin, R. & **Lipps D.B.** (2018) Accuracy of group analyses in representing shoulder muscle coordination patterns of the individual. Poster presentation at 2018 annual meeting of the American Society of Biomechanics (Rochester, MN).
7. [b]Diefenbach B & **Lipps D.B.** (2018) Quantifying glenohumeral joint stiffness across different shoulder postures. Poster presentation at 2018 annual meeting of the American Society of Biomechanics (Rochester, MN).
8. Lyons D.A., [a]Leonardis J., Olinger T., [b]Diefenbach B., Giladi A., **Lipps D.B.**, & Momoh A.O. (2018) The effects of implant-based breast reconstruction on multidimensional shoulder function. Presented at: 57th Annual Scientific Meeting of the Midwestern Association of Plastic Surgeons (Chicago, IL).
9. Lyons D.A., [a]Leonardis J., Olinger T., Giladi A., **Lipps D.B.**, & Momoh A.O. (2018) Upper extremity morbidity following implant-based breast reconstruction: a pilot study. Presented at 2018 American Society of Reconstructive Microsurgery Annual Meeting (Phoenix, AZ)
10. Gross J.P., Sachdev S., Helenowski I.B., **Lipps D.B.**, Hayes J.P., Donnelly E.D., Strauss J.B. (2017) Radiotherapy field design and lymphedema risk following regional nodal irradiation for breast cancer. Podium presentation at 2017 annual meeting of the American Society for Radiation Oncology (San Diego, CA)
11. Oza S, **Lipps D.B.**, Donnelly E.D., Hayes J.P., Strauss J.B. (2017) Radiotherapy dose to upper quadrant musculature from whole breast radiotherapy in the supine and prone positions. Poster presentation at 2017 annual meeting of the American Society for Radiation Oncology (San Diego, CA).
12. **Lipps D.B.**, [a]Leonardis J.M., [b]Diefenbach B., Lyons D., Olinger T., & Momoh A. (2017) Evaluating shoulder stiffness following post-mastectomy breast reconstruction. Poster presentation at 2017 annual meeting of the American Congress of Rehabilitative Medicine (Atlanta, GA).
13. [a]Leonardis, J.M., [b]Desmet D.M. & **Lipps D.B.** (2017) Shoulder posture, torque magnitude, and torque direction highlight the heterogeneous elasticity of the pectoralis major fiber regions. Podium presentation at 2017 annual meeting of the American Society of Biomechanics (Boulder, CO).

14. [a]Leonardis J.M., [b]Diefenbach B., Lyons D., Olinger T., Momoh A., & **Lipps D.B.** (2017) Post-mastectomy breast reconstruction surgeries compromise passive shoulder stiffness. Podium presentation at 2017 annual meeting of the American Society of Biomechanics (Boulder, CO).
15. [b]Luciani B., [b]Desmet D.M., Alkayyali A., & **Lipps D.B.** (2017) Spatial tuning of muscle elasticity and electromyography activity for the sternocleidomastoid muscles. Podium presentation at 2017 Midwest Biomechanics meeting (Grand Rapids, MI) and poster presentation to 2017 annual meeting of the American Society of Biomechanics (Boulder, CO).
16. Eckner J.T., O'Connor K.L., **Lipps D.B.**, Yablon C., Franco L., Ashton-Miller J.A., Jacobson J. (2017). Reliability and validity of sonographic cervical muscle cross-sectional area measurements. Poster presentation at 2017 American Institute of Ultrasound in Medicine meeting (Orlando, FL)
17. [a]Leonardis, J.M., [b]Desmet D.M. & **Lipps D.B.** (2017) The heterogeneity of the elastic properties of the pectoralis major fiber regions across postures and volitional contractions. Podium Presentation at the International Society of Biomechanics, Brisbane, Australia (July 2017) and podium presentation at 2017 Midwest Biomechanics meeting (Grand Rapids, MI).
18. Sohn M.H., Baillargeon E.M., **Lipps D.B.**, & Perreault EJ. (2016) Stretch reflexes in shoulder muscles are described best by heteronymous pathways. Submitted to International Conference on Neurorehabilitation, Segovia, Spain.
19. **Lipps D.B.** & Strauss, J. (2016) Quantifying the radiation dose delivered to individual shoulder muscles during breast cancer radiation therapy treatments. Poster presentation at Annual Meeting of the American Society of Biomechanics, Raleigh, NC.
20. Sohn M.H., Baillargeon E.M., **Lipps D.B.**, & Perreault EJ. (2016) Heteronymous models are needed to describe shoulder stretch reflexes. Podium presentation at XVI Congress of the International Society of Electrophysiology and Kinesiology, Chicago, IL.
21. **Lipps D.B.**, Lee S., Wang B., & Perreault E.J. (2015). The effect of skin motion on dynamic ultrasound of the vastus lateralis. Poster presentation at the Annual Meeting of the American Society of Biomechanics, Columbus, Ohio.
22. **Lipps D.B.**, Baillargeon E., Ludvig D., & Perreault E.J. (2015). Identification of multidimensional shoulder impedance with passive and active muscles. Podium presentation at the Annual Meeting of the American Society of Biomechanics, Columbus, Ohio.
23. **Lipps D.B.**, Baillargeon E., Ludvig D., & Perreault E.J. (2015). Identification of multidimensional shoulder impedance with passive and active muscles. Invited podium presentation at the 17th IFAC Symposium on System Identification, Beijing, China.
24. **Lipps D.B.**, Lee S., Wang B., & Perreault E.J. (2014). The effect of skin motion on dynamic musculoskeletal ultrasound. Poster presentation at the Annual Meeting of the Biomedical Engineering Society, San Antonio, TX.
25. **Lipps D.B.**, Baillargeon E., Lee S., Wang B., Perreault E.J., & Sandercock T.G. (2014). Shear wave elastography provides a measure of active muscle stiffness in the feline soleus. Poster presentation at the 7th World Congress of Biomechanics, Boston, MA.
26. **Lipps D.B.**, Baillargeon E., Sandercock T.G., & Perreault E.J. (2013). Myofascial contributions to the human quadriceps during passive hip flexion and knee extension. Podium presentation at the Annual Meeting of the Biomedical Engineering Society, Seattle, WA.
27. Oh Y.K., Beaulieu M.L., **Lipps D.B.**, Wojtys E.M., & Ashton-Miller J.A. (2013). Is the strain concentration at the femoral enthesis a risk factor for anterior cruciate ligament injury? Podium presentation at the Annual Meeting of the American Society of Biomechanics, Omaha, NE.
28. **Lipps D.B.**, Baillargeon E., Sandercock T.G., & Perreault E.J. (2013). The passive contributions of the vastus medialis and vastus lateralis to knee extension and hip flexion. Poster presentation at the Annual Meeting of the American Society of Biomechanics, Omaha, NE.
29. **Lipps D.B.**, Wojtys E.M., & Ashton-Miller J.A. (2012). On the fatigue life of the anterior cruciate ligament during a simulated pivot landing. Podium presentation at the Annual Meeting of the American Society of Biomechanics, Gainesville, FL.
30. **Lipps D.B.**, Oh Y.K., Ashton-Miller J.A., & Wojtys E.M. (2012). Influence of knee morphological characteristics on peak ACL strain during simulated pivot landings. Podium presentation at the ACL Research Retreat VI, Greensboro, NC.
31. **Lipps D.B.**, Wilson A., Ashton-Miller J.A., & Wojtys E.M. (2012). Posterior tibial slope measurements are not all alike. Poster presentation at the Annual Meeting of the Orthopaedic Research Society, San Francisco, CA.
32. Bush C.J., **Lipps D.B.**, Ashton-Miller J.A., & Wojtys E.M. (2012). Intercondylar notch width and ACL cross-sectional area predict peak ACL strain. Poster presentation at the Annual Meeting of the Orthopaedic Research Society, San Francisco, CA.

33. **Lipps D.B.**, Oh Y.K., Ashton-Miller J.A., & Wojtys E.M. (2011). ACL cross-sectional area and medial tibial plateau geometry provide insights on the gender difference in peak ACL strain. Podium presentation at the Annual Meeting of the American Society of Biomechanics, Long Beach, CA.
34. **Lipps D.B.**, Oh Y.K., Ashton-Miller J.A., & Wojtys E.M. (2011). Gender helps determine peak ACL strain. Poster presentation at Annual Meeting of the American Orthopaedic Society for Sports Medicine, San Diego, CA.
35. Oh, Y.K., **Lipps D.B.**, Ashton-Miller J.A., & Wojtys E.M. (2011). The effect of axial tibial rotation and varus or valgus loading on ACL strain during a simulated jump landing. Caubaud Award Memorial Presentation at Annual Meeting of the American Orthopaedic Society for Sports Medicine, San Diego, CA.
36. **Lipps D.B.**, Oh Y.K., Ashton-Miller J.A., & Wojtys E.M. (2011). The effect of ACL cross-sectional area on ACL strain under compound impulsive loading. Short talk and poster presentation at the Annual Meeting of the Orthopaedic Research Society, Long Beach, CA.
37. Richardson J.K., Eckner J.T., Kim H., **Lipps D.B.**, & Ashton-Miller J.A. (2010). Can a clinical measure of reaction time predict a sport-specific functional response? Podium presentation and NCAA Research Award at the Annual Meeting American Medical Society for Sports Medicine, Cancun, Mexico.
38. **Lipps D.B.**, Eckner J.T., Richardson J.K., & Ashton-Miller J.A. (2009). The effect of gender and perceived threat on the reaction and movement times of young adults performing a simulated sport-protective response. Podium presentation at The Annual Meeting of the American Society of Biomechanics, State College, PA.
39. **Lipps D.B.**, Eckner J.T., Richardson J.K., Galecki A., & Ashton-Miller J.A. (2009). On gender differences in the reaction times of sprinters at the 2008 Beijing Olympics. Poster presentation at The Annual Meeting of the American Society of Biomechanics, State College, PA.
40. Linsenmeier R.A., Pazos P., **Lipps D.B.**, & Dwyer K.L. (2007). Work in Progress: Assessment of an electronic learning management system in bioengineering. Podium presentation at 2007 Frontiers in Education Conference, Milwaukee, WI.
41. **Lipps D.B.**, Florine E.M., Anderson R.C., & Overby D.R. (2007). A computational model of dynamic applanation tonography. Poster presented at the 2007 Biomedical Engineering Society Annual Fall Meeting, Los Angeles, CA.
42. **Lipps D.B.** & Wen H. (2006). Anatomically guided spatial filters in displacement encoded MR imaging of the heart. Poster presentation at 2006 NIH Summer Research Student Poster Day, Bethesda, MD.

GRANT FUNDING:

Ongoing

R03 HD097704-0 (Lipps, PI) 4/10/2019 – 3/30/2021
Eunice Kennedy Shriver National Institute of Child Health and Development $298,063 (direct + indirect cost)
Improving the assessment and diagnosis of shoulder morbidity following mastectomy with breast reconstruction
This study will use ultrasound shear wave elastography to relate stiffness of the pectoralis major muscle with post-operative functional outcomes in breast cancer patients undergoing mastectomy with immediate or delayed breast reconstruction.

C-Cubed (Lipps, Mierzwa, co-PI) 5/01/2018 – 4/30/2019
University of Michigan $50,000 (direct cost)
Improving diagnostic assessment of neck function in head and neck cancer patients treated with definitive chemoradiation
This study will prospectively assess neck morbidity and develop diagnostic criteria to identify and refer patients for rehabilitation services.

Completed

Marie Hartwig Research Fund (Lipps, PI) 7/1/2017 - 6/30/2018
University of Michigan $25,000 (direct cost)
Uncovering proprioceptive deficits of the shoulder following post-mastectomy breast reconstruction
This study will evaluate upper extremity proprioception in breast cancer patients undergoing mastectomy and breast reconstruction.

Cancer Center Idea Grant (Lipps, Momoh, co-PI) 2/1/2017 - 1/31/2019
University of Michigan $40,000 (direct cost)
Evaluation of Shoulder Morbidity in Post-Mastectomy Implant-Based Breast Reconstruction Patients
This study will quantify how the shoulder and its underlying musculature are impacted by post-mastectomy breast reconstructions utilizing the pectoralis major or latissimus dorsi to house an implant in the chest.

Pilot Research Grant (Momoh, PI; Lipps, co-I) 7/1/2017 - 6/30/2018
Plastic Surgery Foundation $10,000 (direct cost)
Upper Extremity Biomechanics Following Breast Reconstruction
This study will correlate how changes in shoulder stiffness following post-mastectomy breast reconstructions are correlated to patient-report outcomes measures of upper extremity function.

PDF15329262 (Lipps, PI) 7/14/2015 – 7/13/2017 (NCE 7/13/2018)
Susan G. Komen $120,000 (direct cost)
Uncovering mechanisms responsible for shoulder morbidity following radiotherapy
This study will quantify the time progression and pathophysiology of shoulder stiffness in breast cancer patients treated with whole breast radiotherapy with and without nodal fields.

MCubed (Lipps, Smith, Jolly, co-PI) 12/1/2015 - 11/30/2017
University of Michigan $60,000 (direct cost)
Evaluation of cervical, thoracic, and scapular dysfunction in cancer survivors
This study developed diagnostic tools to evaluate shoulder and neck morbidity in cancer survivors.

T32 HD07418 (Perreault, PI) 05/01/13-04/30/15
Eunice Kennedy Shriver National Institute of Child Health and Development
Pathophysiology and Rehabilitation of Neural Dysfunction
The major goals on this institutional training grant were to develop ultrasound tools to investigate the link between muscle structure and function and to investigate shoulder mechanics using robot-assisted biomechanical measures.
Role: Postdoctoral Trainee

INVITED PRESENTATIONS:

1. Department of Orthopaedic Surgery, University of Michigan Medical School, Ann Arbor, MI (October, 2019). 'The biomechanical implications of managing breast cancer on shoulder and muscle mechanics.'
2. Department of Kinesiology, University of Waterloo, Waterloo, ON, Canada. (January, 2019). 'The biomechanical implications of breast cancer management: appreciating the link between tissue mechanics and shoulder stability'
3. Joint Biomedical Engineering Department, University of North Carolina and North Carolina State University, Chapel Hill, North Carolina (December, 2014). 'Appreciating the link between tissue structure and joint function.'
4. School of Kinesiology, University of Michigan, Ann Arbor, MI (November, 2014). 'Appreciating the link between tissue structure and joint function: Implications for breast cancer rehabilitation.'
5. Sensory Motor Performance Program Seminar, Rehabilitation Institute of Chicago, Chicago, IL (December, 2011). 'Effect of gender-related differences in knee morphology and quadriceps stiffness on peak anterior cruciate ligament strain during pivot landings.'

TEACHING

University of Michigan – Primary Instructor

Evaluation Questions (1: Strongly Disagree to 5: Strongly Agree):
Q1: Overall, this was an excellent course
Q2: Overall, the instructor was an excellent teacher

MOVESCI 330 Biomechanics of Human Movement
Undergraduate lecture and lab course on musculoskeletal biomechanics

Winter 2018 (72 students):	Median Scores - Q1 = 4.0, Q2 = 4.0
Winter 2018 (66 students):	Median Scores - Q1 = 4.3, Q2 = 4.6
Fall 2017 (66 students):	Median Scores - Q1 = 4.0, Q2 = 4.0
Fall 2016 (76 students):	Median Scores - Q1 = 3.8, Q2 = 3.9
Fall 2015 (66 students):	Median Scores - Q1 = 3.8, Q2 = 4.1

MOVESCI 438 Musculoskeletal Imaging
Undergraduate and graduate lecture course on musculoskeletal imaging and injury.

Fall 2018 (20 students):	Median Scores - Q1 = 4.2, Q2 = 4.2
Winter 2016 (18 students):	Median Scores - Q1 = 4.3, Q2 = 4.1

Northwestern University – Co-Instructor (Searle Teaching Certificate Program)

BME 307 Quantitative Experimentation & Design, Department of Biomedical Engineering
Undergraduate lecture & laboratory course for biomedical engineers
Spring 2014

MENTORSHIP

University of Michigan

Ph.D. Dissertation Committees

Chair

Joshua Leonardis	Kinesiology	Expected Graduation: April 2020
Whitney Wolff	Movement Science	Expected Graduation: 2022

Research Staff

Amani Alkayyali		Summer 2016 – Summer 2018
Brian Diefenbach	Movement Science Graduate	Winter 2018 – Summer 2018
Julie Hahn		Winter 2019 – Summer 2019
Athena (Michelle) Prine		Summer 2019 - Present

Masters Students

Chong Shen	Biomedical Engineering	Research Rotation: Fall 2017
Jiaqi Wang	Movement Science	Winter 2018
Thomas Scott	Movement Science	Fall 2019 – Present
Alex Denton	Movement Science	Fall 2019

Undergraduate Honors Thesis Students

Evie Chodock	Movement Science	Graduated: Winter 2019

Undergraduate Student Researchers

Amanda Sharp	Biomedical Engineering	Fall 2015 – Winter 2016
Bhillie Luciani	Movement Science	Winter 2016 – Summer 2017
David Desmet	Movement Science	Summer 2016 – Summer 2017
Sandy Mouch	Mechanical Engineering	Fall 2016 – Winter 2017
Brian Diefenbach	Movement Science	Winter 2016 – Fall 2017
Shira Lehmann	Biomedical Engineering	Summer 2017 – Winter 2018
Raina Coflin	Mechanical Engineering	Fall 2017 – present
Lindsay Hendrickson	Movement Science	Fall 2017 – Winter 2018
Cassidy Bouse-Eaton	Movement Science	Winter 2018
Madison Kulik	Movement Science	Summer 2018 - present
Cheryl Setlock	Movement Science	Summer 2018 – present
Haleigh Rowe	Movement Science	Fall 2018 – Winter 2019
Sophia Mordini	Movement Science	Fall 2018 – Winter 2019
Katie Wei	Biomedical Engineering	Fall 2018 – Winter 2019
Eryn Brazil	Movement Science	Fall 2018 – Winter 2019
Alexa Chapman	Movement Science	Fall 2019 – present
Ana Martinez	Movement Science	Fall 2019 – present

SERVICE

Professional Conference Service and Leadership

American Society of Biomechanics

2019	Founding Member, Early Career Faculty Affinity Group
2017	Session Co-Chair, Shoulder
2016 – 2017	Awards Committee
2013	Session Co-Chair, Lower Extremity: ACL

Biomedical Engineering Society

2014	Session Co-Chair, Orthopaedic and Rehabilitation Engineering

International Society of Electrophysiology and Kinesiology

2016	Co-Fundraising Chair

Journal Editorial Service

2018 – present	Scientific Reports
2017 – present	Journal of Motor Behavior
2016 – present	Journal of Biomechanics
2015 – present	Sports Biomechanics
2013 – present	PLoS ONE
2013 – present	Journal of Orthopaedic Research
2013 – present	American Journal of Sports Medicine
2012 – present	Journal of Applied Biomechanics

Grant Review Service

2016	NSF Graduate Research Fellowship Program, Biomedical Engineering Panel
2016	National Athletic Trainers Association, ad hoc reviewer
2013 - 2015	National Defense Science & Engineering Graduate Fellowship, Biosciences Panel

Professional Organizations

2016 – present	International Society of Biomechanics
2016 – 2018	International Society of Electrophysiology and Kinesiology
2015 – 2017	Biomedical Engineering Society
2008 – present	American Society of Biomechanics

University Service

2019	Facilitator, *IPE in Action, U-M Center for Interprofessional Education*
2018	Advisory Group member, *Precision Healthy Initiative - Cohort Development*
2018	Member, *Biosciences Initiative - Restorative Neuroengineering Proposal*
2018	Panelist, *Enriching Scholarship: Teaching in a Team-Based Learning Classroom*
2017	Panelist, *Cancer Control and Population Sciences Survivorship Retreat*

School Service

2019	Strategic Hiring Initiative Proposal (Accepted), *Exercise and Cancer* (Co-Leader with Andrew Ludlow)
2016, 2017	Biomechanics Faculty Search Committee

CROSS-CAMPUS COLLABORATIONS

University of Michigan

Adeyiza Momoh, M.D.	Section of Plastic Surgery
Sean Smith, M.D.	Physical Medicine and Rehabilitation
Reshma Jagsi, M.D.	Radiation Oncology
Lori Pierce, M.D.	Radiation Oncology
James Hayman, M.D.	Radiation Oncology
Shruti Jolly, M.D.	Radiation Oncology
Michelle Mierzwa, M.D.	Radiation Oncology
Paul Swiecicki, M.D.	Medical Oncology
Deanna Gates, Ph.D.	Movement Science