

**Todd Leutzinger**  
**CURRICULUM VITAE**  
**University of Nebraska at Omaha**

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# ACADEMIC HISTORY

## EDUCATION

May 2017	Bachelor of Science	University of Nebraska-Lincoln
	Major: Nutrition, Exercise, and Health Science	
	Lincoln, Nebraska	
	GPA: 3.894	
May 2019	Master of Science	University of Nebraska at Omaha
	Major: Biomechanics	
	Omaha, Nebraska	
	GPA: 3.958	
December 2021	Doctor of Philosophy	University of Nebraska at Omaha
	Major: Biomechanics	
	Omaha, Nebraska	
	Current GPA: 3.984	

## ACADEMIC APPOINTMENTS

### **Faculty Course Instructor**

Spring 2022-present Department of Biomechanics

### **Adjunct Faculty Course Instructor**

Summer 2020 and Summer 2021 Department of Biomechanics

### **Graduate Teaching Assistant**

August 2017 – June 2018 Department of Biomechanics

### **Graduate Research Assistant**

July 2018 – present Department of Biomechanics

## TEACHING ACTIVITY

2017-2018	Human Anatomy and Physiology 1	Laboratory Section
2018	Human Anatomy and Physiology 2	Laboratory Section
2020, 2022-present	Human Anatomy and Physiology 2	Lecture Instructor
2021	Biomechanics	Lecture Instructor



5. Dziewaltowski, A. C., Hedrick, E. A., **Leutzinger, T. J.**, Remski, L. E., & Rosen, A. B. (2021). The Effect of Split-Belt Treadmill Interventions on Step Length Asymmetry in Individuals Poststroke: A Systematic Review With Meta-Analysis. *Neurorehabilitation and Neural Repair*, 15459683211011226. \*The first four authors of this manuscript are considered first coauthors, order selection was based on alphabetical order
6. Shoemaker, M. E., Gillen, Z. M., McKay, B. D., **Leutzinger, T. J.**, Mustad, V. A., & Cramer, J. T. (2020). Endogenous versus exogenous carbohydrate oxidation measured by stable isotopes in pre-pubescent children plus <sup>13</sup>C abundances in foods consumed three days prior. *Metabolism open*, 7, 100041.
7. Gillen, Z. M., Mustad, V. A., Shoemaker, M. E., McKay, B. D., **Leutzinger, T. J.**, Lopez-Pedrosa, J. M., ... & Cramer, J. T. (2021). Impact of slow versus rapid digesting carbohydrates on substrate oxidation in pre-pubertal children: A randomized crossover trial. *Clinical Nutrition*, 40(6), 3718-3728.
8. Gillen, Z. M., Miramonti, A. A., McKay, B. D., Jenkins, N. D., **Leutzinger, T. J.**, & Cramer, J. T. (2018). Reliability and sensitivity of the power push-up test for upper-body strength and power in 6–15-year-old male athletes. *The Journal of Strength & Conditioning Research*, 32(1), 83-96.
9. Gillen, Z. M., Miramonti, A. A., McKay, B. D., **Leutzinger, T. J.**, & Cramer, J. T. (2018). Test retest reliability and concurrent validity of athletic performance combine tests in 6–15-year-old male athletes. *The Journal of Strength & Conditioning Research*, 32(10), 2783-2794.
10. McKay, B. D., Miramonti, A. A., Gillen, Z. M., **Leutzinger, T. J.**, Mendez, A. I., Jenkins, N. D., & Cramer, J. T. (2018). Normative reference values for high school-aged american football players. *Journal of Strength and Conditioning Research*,
11. Mendez, A. I., Miramonti, A. A., Gillen, Z. M., McKay, B. D., **Leutzinger, T. J.**, & Cramer, J. T. (2018). Stature, body mass, and body mass index in high school american football players: Appropriate determinants of obesity prevalence? *The Journal of Strength & Conditioning Research*, 32(11), 3119-3126.

## **POSTER PRESENTATIONS**

1. Buster TW, Burnfield JM, Irons SL, Nelson CA, Trejo LH, **Leutzinger TJ** (2016). Pediatric walking vs. training on a prototype motor-assisted elliptical: kinematic and EMG

comparisons at self-selected fast speeds presented at 2016 Annual Meeting Gait and Clinical Movement Analysis Society. Memphis, TN, May 17-20, 2016.

2. Gillen, Z.M., Miramonti, A.A., McKay, B.D., **Leutzinger, T.J.**, Cramer, J.T. "Age-related Differences in Agility Drill Performances Among Youth Athletes: Influences of Growth and Development" presented at the NSCA National Conference. Las Vegas, NV, July 12-15, 2017
3. **Leutzinger, T.J.**, Gillen, Z.M., Miramonti, A.A., McKay, B.D., Mendez, A.I., Cramer, J.T. "Athletic Performance Combine Test Results Among High School American Football Players" presented at the University of Nebraska Lincoln Spring Undergraduate Research Fair, Lincoln, NE, April 4, 2017
4. Miramonti, A.A., Gillen, Z.M., McKay, B.D., **Leutzinger, T.J.**, Mendez, A.I., Cramer, J.T. "Competitive youth soccer participation improves sprint and broad jump performance" presented at the NSCA National Conference. Las Vegas, NV, July 12-15, 2017
5. Miramonti, A.A., Cramer, J.T., Jenkins, N.D., Gillen, Z.M., McKay, B.D., **Leutzinger, T.J.** "Effects of Speed and Agility Training on Combine Performance in Young Male Athletes" presented at the ACSM National Conference. Denver, CO, June 2, 2017
6. Gillen, Z.M., Cramer, J.T., Miramonti, A.A., Jenkins, N.D., McKay, B.D., **Leutzinger, T.J.** "Power Push-up Tests Performed from the Knees and Toes in Young Male Athletes" presented at the ACSM National Conference. Denver, CO, June 2, 2017
7. **Leutzinger, T.J.**, Myers, S.A., Pipinos, I. "Individuals with Peripheral Artery Disease Alter Spatiotemporal Gait Parameters When Walking With Pain versus Without Pain" presented at the University of Omaha Student Research and Creative Activities Fair and the Human Movement Variability Conference Omaha, NE, March 2, 2018 and May 17, 2018
8. **Leutzinger, T.J.**, Hassan, M., Despiegelaere, H., Casale, G., Pipinos, I., Myers, S.A. "Propulsion Force Symmetry During Walking In Patients With Peripheral Artery Disease" presented at The American Society of Biomechanics Conference. Rochester, MN, August, 9, 2018
9. **Leutzinger, T.J.**, Christensen, J., Christiansen, C., Knarr, B.A, Stevens-Lapsley, J. "Subject-Specific Strength and Knee Alignment Angle to Improve Knee Joint Contact Force Predictions in Individuals Post Total Knee Arthroplasty" presented at the University of Omaha Student Research and Creative Activities Fair Omaha, NE. March 6, 2020
10. **Leutzinger, T.J.**, Christensen, J., Christiansen, C., Knarr, B.A, Stevens-Lapsley, J. "Subject Strength and Knee Alignment to Investigate Knee Joint Contact Forces Post Total Knee Arthroplasty" presented at the 2021 American Physical Therapy Association Combined Sections Meeting. virtually, February 24-27, 2021

11. **Leutzinger, T.J.**, Kingston, D.C, Wellsandt, E, Dinkel, D, Knarr, B.A “The Effect Of Unilateral Handrail Use On Normalized Peak Knee Kinetics In Obese And Healthy Weight Individuals During Stair Negotiation” presented at the Great Plains American Society of Biomechanics Regional Conference, Omaha, NE., May 18, 2022

## **PODIUM PRESENTATIONS**

1. **Leutzinger, T.J.**, Pipinos, I., Johanning, J., Mukherjee, M., Hassan, M., Despiegelaere, H., Myers, S.A. “Single Session Walking Adaptations to an Ankle Foot Orthosis in Patients with Claudication and Peripheral Artery Disease” presented at the 2019 University of Nebraska Omaha Research and Creative Activities Fair on March 1, and the 4<sup>th</sup> Annual Human Movement Variability Conference on May 16. Presented at the International Society of Biomechanics Conference July 31-August 4.
2. **Leutzinger, T.J.**, Christensen, J., Christiansen, C., Knarr, B.A, Stevens-Lapsley, J. “Subject-Specific Strength and Knee Alignment Angle to Improve Knee Joint Contact Force Predictions in Individuals Post Total Knee Arthroplasty” to be presented at the Annual Human Movement Variability Conference in conjunction with The Great Plains Regionals ASB Conference Omaha, NE. May 14, 2020

## **CONFERENCES ATTENDED**

Human Movement Variability Conference in conjunction with The Great Plains Regionals ASB Conference May 17-18, 2022

American Physical Therapy Association Combined Sections Meeting February 1-February 28, 2021 (virtually)

Human Movement Variability Conference in conjunction with The Great Plains Regionals ASB Conference September 1, 2020 (virtually)

International Society of Biomechanics July 31 – August 4, 2019

American Society of Biomechanics, August 8–August 11, 2018

Human Movement Variability Conference, June 1, 2017

Human Movement Variability Conference, May 17, 2018

Human Movement Variability Conference, May 16, 2019

Big Ten Recreational Sports Conference May 17-May 20, 2016

## **SEMINARS ATTENDED**

Dr. Fred Choobineh’s presentation on Nebraska EPSCoR Funding and Educational Opportunities.

Dr. James Van Etten “Fifty Years of Fun Being a Scientist”

Dr. Song-Young Park “Attenuated Oxygen Transport Capacity and Vascular Mitochondrial Dysfunction in Aging and Disease”

Dr. Sara Myers “Peripheral Artery Disease, Productivity, and Priorities”

Dr. Vivien Marmelot “A Journey Through Complexity: Healthy Behavior is Not Normal”

Dr. Frederick Hamel “Doing Research at the VA Nebraska-Western Iowa Health Care System”

Dr. Scott Tashman “Dynamic Joint Function Assessment for Enhancing Understanding and Treatment of Musculoskeletal Injury and Disease”

Dr. Julie Liss “Tracking speech motor control as a window to neurological health”

Dr. Li-Shan Chou “Attention and Gait: Dual-Task Gait Paradigms”

Dr. Jorge Zuniga “The development of 3D printed prostheses and anatomical models for children”

Dr. Philippe Malcolm “Exoskeleton actuation inspired by informing biomechanics”

Dr. Stefania Fatone “The NU-FlexSIV Socket: Development, Research, and Dissemination”

Dr. Catherine Lang “Dose in stroke rehabilitation: The value of explicit hypothesis testing”

Dr. Nate Hunt “Cognitive biomechanics of arboreal locomotion”

Dr. Marco Santello “A new model of sensorimotor control”

Dr. Jenna Yentes “Breathing and Walking Coupling in Pulmonary Disease”

Mr. John Tencer “National Strategic Research Institute”

Dr. Jennifer Larsen “Promoting Your Science: The Art of The ‘Elevator Pitch’”

Dr. Andrew Hansen “Development of Adaptive Technologies for Veterans with Disabilities”

Dr. Mark Riley “Biological Monitoring Challenges and Solutions”

Dr. Conor Walsh “Soft Wearable Robots for Everyday Wear”

Dr. Robert Full “Nature’s Extremes in Motor Control-Gripping Geckos, Leap’N Lizards, Compressed Cockroaches, and Sprinting Spiders”.

Dr. Greg Sawicki “Biologically-Inspired Concepts Guiding Lower-Limb Exoskeleton Design”.

Dr. Andrew Kern “Quantitative Analysis of Intra-Articular Fractures, Foot Mechanics, and Foot Thermography: Potential for Improved Treatment?”

Dr. William Marras “Understanding Causal Pathways for Spine Disorders”

Dr. Kharma Foucher “Walking Toward Better Total Hip Replacement Outcomes”

Dr. Cary Savage “Cognitive Neuroscience of Obesity”

Dr. Aaron Likens “Multiscale Characteristics of Human Performance”

Dr. Scott Vincent “Biomechanical and Clinical Implications of the Unstable Spine”

Dr. Jenni Buckley “Engineering Change: Strategic Action to Achieve Gender Diversity in Engineering and Medicine”

Dr. Thomas Bulea “Innovative Approaches for Evaluation and Device-Based Treatment of Gait Disorders in Children with Cerebral Palsy”

Dr. Braden Fleming “Strategies for Minimizing Posttraumatic Osteoarthritis After Joint Injury”

Dr. Luis Silva “Interpretation of the Surface Electromyography in Dynamic Skills”

## **MEMBERSHIPS**

Founding member of Biomechanics United at the University of Nebraska Omaha

Member of the American Society of Biomechanics

Member of National Society of Collegiate Scholars (NSCS)

Member of Phi Eta Sigma Honor Fraternity

Member of Alpha Lambda Delta Honor Sorority

Member of Golden Key International Honor Society

Member of Phi Upsilon Omicron Honor Society

Member of the National Society of Leadership and Success

## **PUBLIC SERVICE AND VOLUNTEER ACTIVITIES**

2023-present	Academic Advisor for Biomechanics United student group at the University of Nebraska at Omaha
2023-present	Academic Advisor for Maverick Club Swim student group at the University of Nebraska at Omaha
2020	Inaugural president of Biomechanics United student group at the University of Nebraska at Omaha
2019	Nebraska Robotics Expo
2018	“Lights on Afterschool” Outreach Event
2018	Platinum Tour for Jim Kuester, the Directory of Military & Veteran Affairs for Nebraska Senator Ben Sasse
2018	Platinum Tour for Chuck Hagel, previous Nebraska Senator and former Secretary of Defense for President Obama
2018	Omaha Public Schools tours
2018	Eureka! STEM Camp tours
2018	La Petite Academy tour
2018	NE State Science Meet Outreach Event
2018	STEM University Outreach Event
2018	National Biomechanics Day Outreach Event
2018	Tour for a Nebraska State Senator
2017	“Lights on Afterschool” Outreach Event
2016-2017	Member of the Campus Recreation Advisory Council at the University of Nebraska-Lincoln
2016	Risk Manager of Phi Kappa Theta Fraternity Nebraska Pi Chapter
2016	Member of Phi Kappa Theta Fraternity Nebraska Pi Chapter Housing Corporation
2016	Member of Phi Kappa Theta Fraternity Nebraska Pi Chapter Executive Council
2015-2016	Philanthropy Chairman of Phi Kappa Theta Fraternity Nebraska Pi Chapter
2014-2017	Mentor with Teammates Mentoring Program
2014 & 2016	Volunteer at the University of Nebraska-Lincoln’s Big Event
2013	Volunteer at the Boys and Girls Club of Lincoln

## **INSTRUMENTATION COMPETENCIES**

Cortex Motion Capture System  
Visual 3D  
Qualysis  
Skin Fold Caliper Measurements



Biodex Isokinetic Muscular Function Testing  
Parvo Medics True One 2400 Metabolic Cart

## **COMPUTER COMPETENCIES**

Matlab  
SPSS statistical package  
OpenSim  
Microsoft Excel

## **CERTIFICATIONS**

2017-present Collaborative Institutional Training initiative training, University of Nebraska  
Medical Center  
2016-2020 American College of Exercise Certified Personal Trainer  
2018-2019 Without Compensation Employee of the Veterans Association Omaha Medical  
Center  
2017-2019 Collaborative Institutional Training initiative training, Department of Veterans'  
Affairs

## **UNPAID INTERNSHIPS**

2014-2016 Volunteer Research Assistant at Madonna Rehabilitation Hospital  
2015 Volunteer Research Assistant at the University of Nebraska at Omaha  
Department of Biomechanics  
2017 Intern at Bryan Lifepointe Wellness Center

## **RELEVANT COURSEWORK**

Graduate GPA: 3.984  
Quantitative GRE score: 153  
Verbal Reasoning GRE score: 158  
Analytical Writing GRE score: 4

### **Motor Control/Biomechanics**

NUTR 384 Biomechanics of Human Movement  
BMCH 8450 Advanced Biomechanics  
BMCH 9460 Advanced Biomechanics II  
BMCH 8420 Motor Development  
BMCH 8100 Nonlinear Analysis  
BMCH 8400 Motor Learning  
BMCH 8646 Orthopedic Biomechanics  
BMCH 8206 Methods in Biomechanics I  
BMCH 8216 Methods in Biomechanics II  
BMCH 9411 Motor Control

### **Mathematics**

MATH 106 Calculus I  
MATH 107 Calculus II  
MATH 208 Calculus III  
MATH 2350 Differential Equations

**Physics**

PHYS 211 General Physics I

**Statistics/Research Design**

EDPS 459 Statistical Methods

HPER 8030 Research in HPER

PE 8040 Advanced Statistics

BMCH 8030 Biostatistics

KINS 9300 Meta-Analysis

BMCH 9910 Doctoral Seminar

**Computers**

BSEN 130 Computer Aided Design

BMCH 8200 MATLAB

**Exercise Science**

BIOS 213 Human Physiology

BIOS 214 Human Anatomy

NUTR 486 Exercise Testing and Exercise Programming

NUTR 302 Science, Media, and the Consumer

NUTR 484 Physiology of Exercise

**Psychology**

PSYC 428 Health Psychology

**REFERENCES**

Brian Knarr, PhD  
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Omaha, NE 68182-0216  
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