

# LOGAN FAUX-DUGAN

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## Research and Professional Mission

To enhance public health outcomes by applying knowledge gained from investigating the influence of structural gearing in the foot-ankle on muscle function and gait across healthy and clinical populations.

## EDUCATION

2022  
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Present

- **The Pennsylvania State University**  
Ph.D. in Kinesiology - Biomechanics 📍 State College, PA  
  
Dissertation: Plantarflexor Structure-Function Relationships in Healthy Individuals and PAD Patients  
  
Advisors: Stephen J. Piazza/David Proctor

2019  
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2022

- **The Pennsylvania State University**  
M.S. in Kinesiology - Biomechanics 📍 State College, PA  
  
Thesis: Relationship between Achilles Tendon Moment Arm and Plantarflexor Muscle Architecture  
  
Advisor: Stephen J. Piazza

2015  
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2019

- **Delaware State University**  
B.S. in Movement Science 📍 Dover, DE  
  
**Presidential Academic Award (Summa Cum Laude - 4.0 GPA)**

## RESEARCH EXPERIENCE

2019  
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Present

- **Graduate Research Assistant, Biomechanics Laboratory**  
The Pennsylvania State University, Biomechanics Laboratory 📍 State College, PA  
  
Principal Investigator: Stephen J. Piazza

2018  
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2019

- **Research Associate Team Captain**  
Delaware State University, Exercise Rehabilitation Laboratory 📍 Dover, DE  
  
Principal Investigator: Von Homer

2018  
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2019

- **Undergraduate Research Assistant**  
University of Delaware, Motion Analysis Laboratory 📍 Newark, DE  
  
Principal Investigators: Lynn Snyder Mackler/Thomas S. Buchanan



*“Nullius in Verba” - The Royal Society of London, circa 1660*

## SKILLS

Experienced in MATLAB/Python/Arduino/R/ImageJ, deep learning, musculoskeletal ultrasonography, motion analysis, and CAD modeling/design fabrication.

Proficient in training/utilizing convolutional neural networks via deep learning to autonomously extract muscle architecture from ultrasonography

Expertise with ultrasonography for 2D/3D muscle architecture acquisition and estimation of functional Achilles tendon moment arms.

*This CV was made with the R package [pagedown](#).*

*Last updated on 2024-08-05.*

- 2016  
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2019
  - Undergraduate Research Assistant**  
 Delaware State University, Biomechanics Laboratory 📍 Dover, DE  
 Principal Investigator: Robert C. Mason
- Summer,  
2018
  - Visiting Undergraduate Research Assistant (>350 hrs.)**  
 University of Delaware, Motion Analysis Laboratory 📍 Newark, DE  
 Principal Investigators: Lynn Snyder Mackler/Thomas S. Buchanan  
  
**First place winner for Biomechanics and Computational Methods category at summer research symposium**

## PROFESSIONAL EXPERIENCE

- 2023  
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present
  - Graduate Research Assistant (funded by American Heart Association grant)**  
 The Pennsylvania State University, College of Health and Human Development 📍 State College, PA
- 2023  
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2024
  - Board Member of Kinesiology Graduate Student Association**  
 The Pennsylvania State University, College of Health and Human Development 📍 State College, PA
- 2021  
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2024
  - Co-Chair of Health and Human Development Graduate Student Council**  
 The Pennsylvania State University, College of Health and Human Development 📍 State College, PA
- 2019  
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2024
  - Graduate Teaching Assistant**  
 The Pennsylvania State University, College of Health and Human Development 📍 State College, PA
- Spring,  
2023
  - Judge for Health and Human Development Undergraduate Research Exhibition**  
 The Pennsylvania State University, College of Health and Human Development 📍 State College, PA
- Fall,  
2022
  - Graduate Student Representative of Ad-Hoc Health and Human Development Academic Integrity Committee**  
 The Pennsylvania State University, College of Health and Human Development 📍 State College, PA
- 2018  
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2019
  - Physical Therapist Job Shadow (~50 hrs.)**  
 Christiana Care, Rehabilitation Services 📍 Middletown, DE
- 2017  
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2019
  - Sports Medicine Intern (~100 hrs.)**  
 Delaware State University, Sports Medicine Facilities 📍 Dover, DE
- 2009  
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2019
  - Outside Sales Representative and Call Center Call Analyst**  
 P.J. Fitzpatrick Inc., Outside Sales Department 📍 New Castle, DE

Summer, 2017 ● **Physical Therapy Technician Intern (~100 hrs.)**  
All Therapy, Physical Therapy and Wellness 📍 Middletown, DE

## TEACHING EXPERIENCE

Fall, 2023 ● **Co-Lead Teaching Assistant (position accepted)**  
KINES 384: Biomechanics, The Pennsylvania State University  
📍 State College, PA

Summer, 2023 ● **Summer Teaching Assistant**  
KINES 384: Biomechanics, The Pennsylvania State University  
📍 State College, PA

2019 | Present ● **Teaching Assistant**  
KINES 384: Biomechanics, The Pennsylvania State University  
📍 State College, PA

Summer, 2019 ● **Mentor/Tutor**  
Finite Math/Trigonometry, Delaware State University  
📍 State College, PA

## PRESENTATIONS

August, 2024 ● **Poster for Annual Meeting, American Society of Biomechanics**  
“Apparatus for Investigation of Isolated Plantarflexor Function with Controlled Gear Ratio”  
📍 Madison, WI  
Faux-Dugan, L. K. and Piazza, S. J.

August, 2023 ● **Podium for Annual Meeting, American Society of Biomechanics**  
“Reliability of Three Extrapolation Methods for Ultrasound-Based Estimation of Gastrocnemius Fascicle Lengths”  
📍 Knoxville, TN  
Faux-Dugan, L. K. and Piazza, S. J.

July, 2023 ● **Podium for World Congress, International Society of Biomechanics**  
“Correlations between Achilles Tendon Moment Arm and Plantarflexor Muscle Architecture”  
📍 Fukuoka, Japan  
Faux-Dugan, L. K., Piazza, S. J.

May, 2019 ● **Poster for Annual Meeting, American College of Sports Medicine**  
“Evaluating Collagen Matrix Degradation after ACL Reconstruction using Quantitative MRI”  
📍 Orlando, FL  
Faux-Dugan, L. K., Williams, J. R., Neal, K., Khandha, A., and Buchanan, T. S.

April,  
2019

● **Poster for Research Day, Delaware State University**

"Evaluating Collagen Matrix Degradation after ACL Reconstruction using Quantitative MRI"

📍 Dover, DE

**Faux-Dugan, L. K.**, Williams, J. R., Neal, K., Khandha, A., and Buchanan, T. S.

October,  
2018

● **Poster for Mid-Atlantic Regional Conference, American College of Sports Medicine**

"Evaluating Collagen Matrix Degradation after ACL Reconstruction using Quantitative MRI"

📍 Harrisburg, PA

**Faux-Dugan, L. K.**, Williams, J. R., Neal, K., Khandha, A., and Buchanan, T. S.

July,  
2018

● **Poster for Summer Research Symposium, Delaware State University**

"Evaluating Collagen Matrix Degradation after ACL Reconstruction using Quantitative MRI"

📍 Dover, DE

**Faux-Dugan, L. K.**, Williams, J. R., Neal, K., Khandha, A., and Buchanan, T. S.



## PEER-REVIEWED PUBLICATIONS

TBD

● **PLOS ONE**

**Faux-Dugan, L.;** Piazza, S. (in review) "Correlations between Achilles Tendon Moment Arm and Plantarflexor Muscle Architecture Variables," *PLOS ONE*.

August,  
2024

● **American Society of Biomechanics Conference Proceedings**

**Faux-Dugan, L.;** Piazza, S. "Apparatus for Investigation of Isolated Plantarflexor Function with Controlled Gear Ratio," *Proceedings of the 2024 American Society of Biomechanics Conference*.

August,  
2023

● **American Society of Biomechanics Conference Proceedings**

**Faux-Dugan, L.;** Piazza, S. "Reliability of Three Extrapolation Methods for Ultrasound-Based Estimation of Gastrocnemius Fascicle Lengths," *Proceedings of the 2023 American Society of Biomechanics Conference*.

July,  
2023

● **International Society of Biomechanics Conference Proceedings**

**Faux-Dugan, L.;** Piazza, S. "Correlations between Achilles Tendon Moment Arm and Plantarflexor Muscle Architecture," *Proceedings of the 2023 International Society of Biomechanics Conference*.

May 10,  
2019

## International Journal of Exercise Science

**Faux-Dugan, L.**; Williams, J.; Neal, K.; Khandha, A.; and Buchanan, T. (2019) "Evaluating Collagen Matrix Degradation after ACL Reconstruction using Quantitative MRI," *International Journal of Exercise Science: Conference Proceedings*: Vol. 9 : Iss. 7 , Article 28. Available at: <https://digitalcommons.wku.edu/ijesab/vol9/iss7/28>



## AWARDS

2015  
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2019

### President's List

Delaware State University

📍 Dover, DE

2015  
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2019

### First Place Winner in Biomechanics and Computational Methods for Poster Presentation

Summer Research Symposium, Delaware State University

📍 Dover, DE



## AFFILIATIONS

2022  
|  
Present

### International Society of Biomechanics

Student Member

2019  
|  
Present

### American Society of Biomechanics

Student Member

2018  
|  
Present

### American College of Sports Medicine

Student Member

2018  
|  
2019

### Alpha Chi Honor Society

Delaware State University Chapter

📍 Dover, DE

2018  
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2019

### Phi Epsilon Kappa Honor Fraternity

Delaware State University Chapter

📍 Dover, DE

2016  
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2019

### National Society of Leadership and Success

Delaware State University Chapter

📍 Dover, DE

2015  
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2019

### Health and Fitness Leaders Organization

Delaware State University Chapter

📍 Dover, DE



## VOLUNTEER EXPERIENCE

2015  
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2019

### Food Pantry (>1000 hrs.)

Cedars Church of Christ

📍 Pike Creek, DE

2015  
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2019

### Shoe Soles for Souls Shoe Drive

P.J. Fitzpatrick Inc.

📍 New Castle, DE

Summer,  
2018



**Alumni Mentor**

Conrad Schools of Science

📍 Wilmington, DE

Summer,  
2017



**Haiti Missions**

United Redeemed

📍 Elkton, MA

Summer,  
2013



**Relay for Life**

American Cancer Society

📍 Bear, DE



REFERENCES



**Upon request, I will happily provide references.**