**SUMMARY**

Seeking a graduate program specifically in the areas of muscle research. My undergraduate thesis entitled *OPTIMAL FASCICLE LENGTH CHANGES BASED ON SUBMAXIMAL FORCE OR ACTIVATION* used ultrasound imaging and EMG to estimate the force-length curve of the First Dorsal Interosseous. For examples of academic research refer to [*https://github.com/zack0179/ZackaryScalyer*](https://github.com/zack0179/ZackaryScalyer)*.*

**EDUCATION**

Penn State University, Berks Campus Expected: May 2018

Bachelor of Science in Kinesiology, Exercise Science Option

Cumulative GPA: 3.72

**AWARDS**

Franco Undergraduate Research Award ($1,500) January 2017

Science Peer Tutor Award: Kinesiology June 2017

Outstanding Internship/Co-op Student Award June 2017

Science Peer Tutor Award: Mathematics June 2016

US Marine Corps Certificate of Commendation July 2010

**ACADEMIC EXPERIENCE**

**Physics Department Independent Studies August 2017 to Present**

Faculty Adviser: Dr. Alexei Prokudin

* Data analysis and visualization with Python.

**PSU Berks Funded Engineering Research May 2017 to Present**

Faculty Adviser: Dr. Joseph M. Mahoney

* *Design, Calibration and Validation of an Inexpensive Balance Board for Quiet Stance Testing* – Abstract submitted October, 2017
* *Validation of Simple Automated Step Counting Methods During Treadmill Walking* – Abstract pending
* Data collection with Python, data integration, analyzation, and visualization with MATLAB.

**PSU Berks Chemistry Research Internship June 2016 to Present**

Faculty Adviser: Dr. Katie E Amaral

* Data cleaning and exploration with programing language R for statistical modeling Participated in Biennial Conference on Chemistry Education (BCCE), Dr. Amaral’s presentation on Linear and Generalized Linear Modeling of Organic Chemistry II Grade

**PSU Berks Biomechanics Research Internship June 2016 to August 2017**

Faculty adviser Dr. Benjamin W Infantolino

* *Optimal Fascicle Length Changes Based On Submaximal Force Or Activation*

Poster presentation, publication working

* Ultrasound imaging, EMG, load cell data collection, and data processing with MATLAB.

Faculty Adviser: Dr. Allison R Altman-Singles

* Vicon Nexus II Motion Analysis System, Bertec Force-Plate Gate Analysis

**PSU Berks Math, Chemistry, and Statistics tutor January 2016 to May 2017**

* Stat 100 Student Mentor: Presented introduction to probability
* Peer Academic Leader: The Neurobiology of Motor Control and Development

**National Science Foundation (NSF) Engineering Ahead Program July 2016, July 2017**

Faculty Adviser: Dr. Ryan Hassler

* Program assistant, student mentor and math tutor

**STEM Conference Student Instructor March 2016, March 2017**

Faculty Adviser: Dr. Ryan Hassler

* Real-World Data Analysis Using R

Faculty Adviser: Dr. Benjamin W Infantolino

* Ultrasound and muscle anatomy

**PRESENTED RESEARCH**

**41st American Society of Biomechanics Annual Conference August 2017**

Poster presentation: Optimal Fascicle Length Changes Based On Submaximal Force Or Activation

**18th Annual Undergraduate Research & Creativity Conference April 2017**

Poster presentation: Organic Chemistry Predicting Outcomes

**Biennial Conference on Chemistry Education (BCCE) June 2017**

Podium presentation by Dr. Katie E Amaral: Linear and Generalized Linear Modeling of Organic Chemistry II Grade

**MILITARY ACADEMICS**

**Corporals Leadership Course August 2012**

46 hours in-class instruction. Topics included: public speaking, mentoring, leadership

**Marine Corps Martial Art Black Belt Instructor August 2012**

158 hours of instructing, certified 39 students

**PROFESSIONAL AFFILIATIONS 2015 - Present**

American Society of Biomechanics (ASB)

National Strength and Conditioning Association (NSCA)

American College of Sports Medicine (ACSM)