



## SHP Student Interns for Research and Scholarly Activities Application of Project Proposal Form

### Instructions:

Please fill out the form and return via email to Michele Sisco ([mcoral@shp.rutgers.edu](mailto:mcoral@shp.rutgers.edu)) by **March 25, 2024**. Please fill each box to the right of each required field. If you are sending attachments, please ensure your contact information is added to all your forms.

### Faculty Contact Information:

Date submitted:	3/25/24
Faculty Name:	Allison Brown, PT, PhD
Department/Program:	RMS/Physical Therapy
Telephone number:	972 972-2141
E-mail:	Brown46@shp.rutgers.edu

### Project Detail:

Project Title: (56 characters max)	Clinical and biomechanical risk factors in high school runners.
Hypothesis:	<p>Running related injuries occur at a remarkable rate, yet the majority of research into running injury risk factors has been done on the adult runner. Little is known about the influence that strength, flexibility, training factors and running mechanics have on the injury rate of high school runners. Further, the physical body of a high school runner changes as the adolescent develops and thus monitoring of these changes, as well as the individual's clinical-biomechanical measures as predictors of injury is important. Previous work by our group has examined pre-season and in-season data on a cohort of 56 high school runners. The purpose of this project is to invite back the returning runners for an additional pre-season data collection and then in-season injury monitoring.</p> <p>PHYSICAL PERFORMANCE: We hypothesize that runners will demonstrate greater normalized body strength due to a year of physical maturation and training.</p> <p>INJURY CHARACTERISTICS: As compared to healthy runners, we hypothesize that runners who go on to sustain injury in the cross country season will demonstrate (1) Altered running patterns potentially including longer strides and fewer strides per minute (decreased cadence) (2) Increases in loading parameters such as braking force and impact compared to their peers who complete the season without injury. (3) Decreases in total body strength and lower body neuromuscular control</p>

<p><b>Description:</b> (Include design, methodology, data collection, techniques, data analysis to be employed, evaluation and interpretation methodology for research component)</p>	<p>This study collected data on 86 runners from across the state of New Jersey in the summer and fall of 2022 and 2023. Runners underwent baseline testing and were followed remotely during their fall cross-country seasons. Data collection included lower extremity functional and total body strength measures (lateral step down and isometric mid-thigh pull) and running biomechanics (RunScribe).</p>
<p><b>Specific Student Responsibilities:</b></p>	<p>Summer interns will participate in data reduction and analysis for calf raise measures and running biomechanics (data from the RunScribe shoe pods). If time permits, we will move on to the beginning of article preparation. In this case, the summer intern will assist with the introduction/literature review and methodology component of the manuscript and depending on effort/input may be eligible for co-authorship on the manuscript or poster/platform presentations.</p>
<p><b>Start / end date of project:</b></p>	<p>July-August (6-8 weeks, depending on intern's availability)</p>

**Educational:**

<p><b>WHAT OTHER EDUCATIONAL OPPORTUNITIES ARE AVAILABLE TO STUDENTS?</b> (e.g., journal club, seminars, clinic, rounds)</p>	<p>The student will have opportunities to collaborate with and participate in a lab-meeting/journal club with members of summer research interns working with Dr Andrew Lynch and Dr Rich Ferraro.</p>
<p><b>WHERE DO YOU PLAN TO PRESENT OR PUBLISH THE FINDINGS WITH THE STUDENT?</b> (e.g., national or state meetings, newsletter or journal, SHP poster day)</p>	<p>These data are planned to be submitted to the APTA Combined Section Meeting for 2025 as well as preparing for manuscript submission in competitive Journals (eg. JOSPT).</p>

**CHECK ALL APPROPRIATE BOXES BELOW AND PROVIDE REQUESTED INFORMATION.**

This project is:  clinical     laboratory     behavioral     survey     educational  
 Other: please specify \_\_\_\_\_

This project involves the use of human subjects (including chart review, retrospective studies and questionnaires).

Pending       Approved       IRB Protocol Number \_Pro2021000895\_

***IRB approval must be obtained by June 2024***

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 PT, DPC, PhD.

March 26, 2024

\_\_\_\_\_  
Signature of Department Chair

\_\_\_\_\_  
Date

OR-For internal use

**Form: (1)**

**Reviewed date:** \_\_\_\_\_

**Date processed on website:** \_\_\_\_\_