RUTGERS
School of Health Professions

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

Instructions:
Please fill out the form and return via email to Nipa Sahasrabuddhe (ns1115@shp.rutgers.edu) by **March 31, 2023**. **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:	3/31/2023
Faculty Name:	Andrew Lynch
Department/Program:	Rehabilitation and Movement Sciences, Physical Therapy
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Project Detail:

Project Title: (56 characters max)	Clinical and biomechanical risk factors in high school runners.
Hypothesis:	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. PHYSICAL PERFORMANCE: We hypothesize that runners will demonstrate greater normalized body strength due to a year of physical maturation and training. 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
Description: (Include design, methodology, data collection, techniques, data analysis to be employed, evaluation and interpretation methodology for research component)	This prospective study will collect data on thirty runners from across the state of New Jersey. The study will collect baseline data during June, July and August of 2023. Runners will undergo baseline testing in person during the summer of 2023 and will be followed remotely during their fall cross-country season. Summer interns will participate in the summer data collections including lower extremity functional and total body strength measures (lateral step down and isometric mid-thigh pull) and running biomechanics (instructions and implementation on RunScribe shoe pods). Interns will have the opportunity to continue participation through the remainder of the study. Summary data from baseline assessment will be discussed as a research team to determine the various biomechanical profiles of runners at baseline.
Specific Student Responsibilities:	The student intern will participate in data collection methods and will be further trained in study specific measures of running mechanics and strength including the RunScribe gait analysis system, isometric midthigh pull testing and the lateral step down (frontal plane projection angle testing).
Start / end date of project:	July-August (6-8 weeks, depending on intern's availability)

Educational:

WHAT OTHER EDUCATIONAL OPPORTUNITIES ARE AVAILABLE TO STUDENTS? (e.g., journal club, seminars, clinic, rounds)	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 Joe Zeni, Dr Allison Brown and Dr Rich Ferraro.
WHERE DO YOU PLAN TO PRESENT OR PUBLISH THE FINDINGS WITH THE STUDENT?	It is expected that these findings will be presented at national conferences such as the American Society of Biomechanics Annual Meeting or the American Physical Therapy Association Combined Sections Meeting as well as the SHP poster day

(e.g., national or state meetings, newsletter or journal, SHP poster day)	

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 2021000895__*pending modification*___

IRB approval must be obtained by June 2023

PT, DPT, PhD.

Signature of Department Chair

March 28, 2023
Date

OR-For internal use
Form: (1)
Reviewed date:_____4/4/23_____
Date processed on website:_____