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Analysis of Lower Extremity Strength Values in Club-Level Collegiate Hockey Players

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RCEU 2023 Project Proposal

Project Title

Analysis of lower extremity strength values in club-level collegiate hockey players

Faculty Information

Name: Dr. Paul N. Whitehead, CSCS*D

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Proposal ID RCEU23-KIN-pNw-01

Instructions are on the last page.

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I. Project Description

The purpose of the study is to assess lower extremity strength values in club-level hockey players at UAH. It is believed that the restricted range of motion created by the rigid boot of a hockey skate results in diminished relative ankle strength in hockey players, which could lead to injurious situations away from hockey. There is little doubt that hockey players have strong legs, but we will be able to see if the restricted range of motion in hockey manifests in diminished ankle strength relative to other sports.

The student researcher for this project will be responsible for recruiting participants from the UAH Club Hockey Team, conducting strength testing sessions, and analyzing the data. Furthermore, the student will be able to compare values of the club hockey players to existing values for other sports and competition levels. The student researcher will gain experience in all facets of the research process, with the ultimate aim of this study being publication of a research manuscript related to work on this project.

II. Student Duties, Contributions, and Outcomes

a. Specific Student Duties

The student will be expected to work closely with the faculty mentor to perform the following duties for the full ten-week program: preparation of study documents, subject recruitment, and conducting training sessions; maintenance, calibration, and utilization of equipment; conducting familiarization and data collection sessions with the equipment; analysis of results related to the study; dissemination of results in written and poster format.

b. Tangible Contributions by the Student to the Project (10% of Review)

The primary benefits to the students are: hands-on learning with various laboratory techniques involved in human performance testing; opportunity to grasp the research process, from hypothesis generation to data collection, ultimately ending with a dissemination of findings; creation of manuscript draft for submission and poster for presentation.

c. Specific Outcomes Provided by the Project to the Student (30% of Review)

The student will be an experienced human performance researcher following the RCEU program with knowledge of a novel testing approach and experience conducting a research study. The student will be well-equipped with knowledge and experience to conduct future research studies, and they will have extensive experience with scientific writing.

III. Student Selection Criteria

Students should be in junior or senior standing and exhibit excellent time-management skills. While it is preferred students be Kinesiology majors, the faculty mentor is open to students from

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related fields applying. Experience in human performance testing and interaction with human research participants is ideal.

IV. Project Mentorship

(30% of Review)

The faculty mentor on this project has a history of success with RCEU work in the past, evidenced by students having presentation opportunities at regional and national conferences. Previous RCEU students in the Department of Kinesiology have been given tremendous independence and responsibility, providing for a worthwhile and lasting summer experience that equips them for success beyond the RCEU.

Kinesiology faculty mentors will provide daily supervision. In addition, the student will be expected to update the project mentor during weekly progress report meetings. The weekly meetings will be used to monitor progress of the program, allow for discussion of ongoing efforts related to the study and other research-related tasks, highlight any current issues, and establish plans for the following week. The faculty mentor will provide feedback for each report and provide feedback on the writing, scientific progress, and quality of work. Further, discussions of current data, analysis of results, and actions to correct any issues that arise will occur in an ongoing manner. The faculty mentor will provide detailed instructions for the ongoing work and offer suggestions for improvement, as necessary.