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

Instructions:
Please fill out the form and return via email to Lisa Adams at kla90@shp.rutgers.edu and Michele Sisco at mcoral@shp.rutgers.edu by April 1, 2020. 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:

<table>
<thead>
<tr>
<th>Date submitted:</th>
<th>03/31/2020</th>
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</thead>
<tbody>
<tr>
<td>Faculty Name:</td>
<td>Gerard G Fluet</td>
</tr>
<tr>
<td>Department/Program:</td>
<td>Rehab and Movement Sciences / DPT North</td>
</tr>
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<td>Telephone number:</td>
<td>(973) 972 - 8529</td>
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<td>E-mail:</td>
<td><a href="mailto:fluetge@shp.rutgers.edu">fluetge@shp.rutgers.edu</a></td>
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Project Detail:

<table>
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<tr>
<th>Project Title: (56 characters max)</th>
<th>Validation of the Leap Motion Controller for remote motor control testing</th>
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<tr>
<td>Hypothesis:</td>
<td>There will be a strong correlation between finger position and movement measurements collected by the LMC array and finger position measurements collected by the Optitrack in healthy persons and persons with stroke.</td>
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Description:
This will be an observational study of two cohorts. Upon IRB approval we will recruit 20 healthy people and 20 people with chronic strokes. Healthy subjects will be recruited on the RBHS - Newark campus. Subjects with chronic strokes will be recruited from subject lists from our previous studies of persons with stroke, our department’s community stroke exercise group and the stroke support group at University Hospital. Data Collection: Subjects will have 16 active markers attached to bony landmarks on the joints of their hands. They will assume a set of 10 hand positions ten times and perform 3 movements with their hands 10 times. All movements will be performed in an array of Optitrack cameras and within an array of two leap motion cameras (See Figure 1).
Statistical Analysis: (See Table 5 for a summary of all planned comparisons) Our outcome measures will be used to compare differences in important measurements of wrist and hand range of motion and movement. Data will be evaluated for normality and transformed if necessary for evaluation.

Specific Student Responsibilities:
- Subject recruitment, initial screening and consent.
- Assist with data collection, equipment maintenance and equipment calibration.
- Assist with data entry and quality control.
- Perform literature searches to support dissemination efforts.

Start / end date of project:
- June 15, 2020 / August 30, 2020

Educational:

WHAT OTHER EDUCATIONAL OPPORTUNITIES ARE AVAILABLE TO STUDENTS? (e.g., journal club, seminars, clinic, rounds)
- Our lab is conducting two NIH funded clinical trials of upper extremity rehabilitation for persons with strokes. There are many opportunities to observe and assist.

WHERE DO YOU PLAN TO PRESENT OR PUBLISH THE FINDINGS WITH THE STUDENT? (e.g., national or state meetings, newsletter or journal, SHP poster day)
- SHP poster day.

CHECK ALL APPROPRIATE BOXES BELOW AND PROVIDE REQUESTED INFORMATION.

This project is:
- [ ] clinical
- [ ] laboratory
- [x] behavioral
- [ ] survey
- [ ] educational
- [ ] Other: please specify

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

Pending [ ] Approved [x] IRB Protocol Number Pro2019000644
IRB approval must be obtained by June 2020

3/31/2020