Date: 5/8/2013

Name of Investigators: Dana Judd, PT, DPT; Jennifer Stevens-Lapsley, PT, PhD

Name of Grant: Multi-component Rehabilitation Following Total Hip Arthroplasty

Award Period: 5/7/2012 to 5/6/2013 (Initial award date is the date that the award was made to your institution)

Current Year of Award completed (circle one): 1st, 2nd, no-cost extension year (3rd)

Progress reports are due no later than 1 year plus 10 days after the initial award date. Failure to submit a timely progress report may result in the termination of your award.

1. Summary of accomplishments in the past year:
   Study design, testing protocols, and treatment protocol details were finalized in July 2012. Final IRB approval for minor study changes was received shortly thereafter. Recruitment for the study was initiated in October 2012 and the first participant enrolled that same month. A total of 9 participants have enrolled to date. Average enrollment rate has been approximately 1.5 participants per month. Assuming the same enrollment rate and the ongoing participation of 2 surgical groups, the rest of the proposed number of participants (11) will be enrolled by January 2014. The intervention is being conducted in a double-blinded manner. There are no significant findings to report.

2. Provide a one-paragraph summary of results or abstract suitable for posting on the Orthopaedic Section website.

**Summary Abstract**

Over 200,000 total hip arthroplasties (THAs) are performed annually in the United States to alleviate osteoarthritis-related pain and disability. This number is projected to exceed 500,000 per year by 2030. Though patients report pain reduction following surgery, deficits in muscle strength, neuromuscular control, and functional performance remain pronounced years after surgery. Although these residual deficits in muscle strength and functional performance are well documented, no evidence-based rehabilitation guidelines for THA exist. In fact, rehabilitation after THA is rarely prescribed, despite potential benefits. To date, most THA rehabilitation studies have been small-scale and have restricted recruitment to younger patients. Furthermore, despite the multifaceted deficits reported after THA and evidence that combined strength and neuromuscular control training improve outcomes in THA and in other populations, no studies have combined strength, neuromuscular control, and functional performance training into one intervention following THA. Therefore, investigating the effects of a multi-component rehabilitation program after THA on muscle strength, neuromuscular control and functional performance is warranted. Thus, the proposed exploratory investigation will compare the efficacy, feasibility, and safety of a comprehensive, multi-component (CMC) intervention with a control (CON) intervention. The CMC intervention will involve strength, neuromuscular control and functional training to improve muscle coordination around the hip and pelvis to enhance functional performance. The CON group will receive education and functional training. Intervention (2x/week for 8 weeks) will begin 2 weeks after THA. The stair climbing test (SCT; primary outcome) will assess functional performance before THA and 10 and 28 weeks after THA. Additional functional performance (Aim 1), lower extremity muscle strength (Aim 2), and safety (Aim 3) assessments will occur at the same time points. This study has high potential to shift current clinical practice and have an immediate impact because the CMC intervention can be easily implemented in most rehabilitation clinics.
3. Attach a list of your publications published or accepted during the past year, or currently being written. Send reprints when available. List presentations made and abstracts accepted for presentation based on this work. Indicate with an asterisk (*) those publications supported by Orthopaedic Section funding.

a. Publications during the past year:


b. Presentations and Abstracts:


4. Provide a budget, using the original approved budget. Indicate total funds spent to date per major categories. If there was > 25% deviation (greater or less spent) of use of funds for any of the budget category, please BRIEFLY indicate the rationale.

<table>
<thead>
<tr>
<th>EXPENSE CATEGORY</th>
<th>AMOUNT REQUESTED</th>
<th>Year One Requested</th>
<th>Year One Spent</th>
<th>Year 1 Balance</th>
<th>Year Two Requested</th>
<th>Total Budget for year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel</td>
<td>$11,496</td>
<td>$5,674</td>
<td>$1,800.00</td>
<td>$3,874.00</td>
<td>$5,822</td>
<td>$9,696.00</td>
</tr>
<tr>
<td>Supplies</td>
<td>$1,360</td>
<td>$1,360</td>
<td>$90.19</td>
<td>$1,269.81</td>
<td>$0</td>
<td>$1,269.81</td>
</tr>
<tr>
<td>Other</td>
<td>$2,140</td>
<td>$1,120</td>
<td>$427.00</td>
<td>$693.00</td>
<td>$1,020</td>
<td>$1,713.00</td>
</tr>
<tr>
<td><strong>Total projected costs</strong></td>
<td><strong>$14,996</strong></td>
<td><strong>$8,154</strong></td>
<td><strong>$2,317.19</strong></td>
<td><strong>$5,836.81</strong></td>
<td><strong>$6,842.00</strong></td>
<td><strong>$12,678.81</strong></td>
</tr>
</tbody>
</table>

**Deviations:**

**Personnel:** Dana Judd (PI) received a T32 pre-doctoral training award: Center Aging Training Grant T32-AG000279 which covers her salary. Josh Winters replaced Jennifer Palmer. The effort for both Josh and Michelle Reynolds were covered by different funding sources for year 1. However, we will use the remaining personnel funds for their year 2 effort.

**Supplies:** We were able to secure temporary use of some exercise equipment and supplies at no cost for year 1. We plan to use some of the supply budget for year 2, as outlined for year 1. We would like to request any additional supply budget be transferred to cover Personnel costs in year 2.

**Other:** Our enrollment began in October 2012 (see summary of accomplishments for details). We will use the remaining budget, as outlined, in year 2.

5. Objectives for the next year:
The objectives for the following year are 1) complete subject enrollment by January 2014, 2) complete all treatment and data collection, 3) complete data analysis, 4) completion of manuscript for publication by May 2014, and 5) initiate NIH grant preparation.

Return to:
Tara Fredrickson, Executive Associate
Orthopaedic Section, APTA, Inc.
2920 East Avenue South, Suite 200
LaCrosse, WI 54601-7202

[Signature and Date] 05/08/2013