

Form Name:	Instructional Development Fund
Submission Started:	September 14, 2021 2:32 pm
Browser:	Chrome 93.0.4577.63 / Windows
IP Address:	147.129.145.193
Unique ID:	860272380
Request ID:	#4
Submission Completed:	September 16, 2021 6:47 am
Process Time:	1 day(s), 16 hour(s), 14 minute(s), 57 second(s)
Participant(s):	Julie Dorsey, Linda Petrosino
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## Applicant Information

First Name	Shannon
Last Name	Scott
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Department	Occupational Therapy
Title of Project	Upper Extremity Motor Recovery Boot Camp
Duration of Project	Two days
Amount Requested	\$1230

## Project Description

### Project Description

This proposed project is a two-day immersive supplemental experiential learning opportunity for graduate OT students enrolled in OTMS 65100 Advanced Adult Evidence Based Practice, otherwise not feasible in the current course format. Students will learn to apply and implement advanced evidence-based evaluations and interventions (modified constraint induced movement therapy) with local community participants with upper extremity (UE) motor impairments secondary to stroke. The benefit for local stroke survivors will be two days of intensive UE programming and provision of a home program at no cost.

### Central Issue/Concept

Stroke is a leading cause of disability with nearly 795,000 people experiencing stroke annually in the United States (US, Centers for Disease Control [CDC], 2021). It is estimated that there are roughly 7 million people in the US living with stroke with nearly two thirds experiencing disability (Stroke Awareness Foundation, 2021).

UE impairment following stroke is a common primary symptom affecting 50-80% of survivors with 40-50% experiencing residual impairments after the acute phase (Rafsten et al., 2019). Impaired UE motor control and function negatively impact independence in daily activities, participation, and quality of life often leading to physical and psychosocial sequelae.

Evidence-based UE motor recovery interventions, based on cortical plasticity and motor relearning principles, involve task-oriented approaches that require highly repetitive use and practice of the affected UE during meaningful and familiar task performance. The "gold standard" of repetitive task practice, which has been well supported by the literature since the EXCITE multi-site clinical trials (Wolf et al., 2006) is constraint-induced movement therapy (CIMT). The CIMT protocol is an intensive two week, six hour per day program (Wolf et al., 2006) which can be a barrier to implementation in traditional rehabilitation settings. Modified constraint-induced movement therapy (mCIMT), also supported by the literature, was developed as an alternative for use in everyday clinical practice and there are several different mCIMT protocols (Fleet et al., 2014). Both CIMT and mCIMT require restraint of the unaffected limb to foster repetitive use of the involved side for prolonged periods of time during the day. Barriers to adoption of CIMT and mCIMT by practitioners in clinical practice persist (Scott et al., 2020; Viana & Teasell, 2012) and result in a gap in evidence-based practice. Despite being well-known by practitioners, CIMT and mCIMT are not the first intervention of choice, even for survivors who are candidates for the program (Scott et al., 2020). While a majority of practitioners learn about CIMT/mCIMT in entry level OT programs, most learn through didactic methods and do not have the opportunity to observe or engage in hands-on experiential learning, which may in turn contribute to some of the reported barriers to use in practice

(Scott et al., 2020). If practitioners are not consistently utilizing evidence based approaches when working with stroke survivors in the clinic, survivors in turn, may not be receiving optimal care and/or opportunities for UE recovery.

In Tompkins County, there are 70/10,000 individuals hospitalized per year for stroke and there are limited neurorehabilitation services available in the area after discharge from Cayuga Medical Center, a designated stroke center. Though Ithaca College (IC) currently offers community programming to local stroke survivors through various faculty-student led clinics, like the Center for Life Skills, the multifaceted nature of stroke and resultant student educational needs often means that the ability to provide the intensive UE motor recovery programming needed to foster cortical plasticity and improvement in UE function is not feasible.

Graduate OT students taking OTMS 65100 Advanced Adult Evidence Based Practice learn about contemporary evidence-based UE motor recovery interventions via didactic methods during the lecture portion of the course. Some students have additional experiential learning opportunities to apply aspects of contemporary UE interventions during the lab portion of this course when working with community participants at the Center for Life Skills at Longview. However, again, given the multifaceted needs of community participants, participants varying levels of UE involvement, and limited time, not all students have the same educational opportunities to apply evidence-based methods such as CIMT.

### Project Scope

The goal is for 3-4 students to work with one community participant over the course of two days, though this will depend on the number of students and community members who participate. Ideally, the goal is to secure 6-8 participants. Under faculty supervision, students will evaluate each participants' UE function and use utilizing a variety of evidence-based assessments to include subjective (Motor Activity Log) and objective (Action Research Arm Test and Box and Block Text) measures, as well as subjective quality of life scales both at baseline and after the two day program. This provides students with the opportunity to learn to administer assessments not typically included in OTMS 65100 . Additionally, as consent is provided, participants pre and posttest UE abilities will be video-taped for use as learning resources later in the course. Students, utilizing motor relearning principles and mCIMT protocols, will plan and implement individual and group treatment interventions that promote repetitive task practice of the participants affected UE. Interventions will be based on individual client needs and interests, and will involve making a simple meal (based on personal food choices) each day for lunch. Scheduled breaks with refreshments, and breaks as needed, will be implemented throughout as well as adherence to measures that ensure the safety of all participants.

All faculty, students, and participants will adhere to IC and Longview Health and Safety Protocols which include wearing a mask at all times, wearing gloves during meal preparation, and not sharing meals. Frequent hand washing will be practiced, and equipment will be sanitized after each use.

## Implementation

The project will be an intensive two-day mCIMT program which will occur over a weekend in early November 2021, from 10 am -2 pm on a Saturday and Sunday. The timing is designed to enable students to apply concepts addressed in prior lectures. This opportunity would be available to all 25 graduate students enrolled in the course and who are interested and able to attend, but will not be a course requirement. Participants will be required to meet the movement criteria for CIMT and will need to be able to safely tolerate the two day program (based on cardiovascular status, endurance, and pain) and be able to attend and follow verbal/visual instructions, with cuing if needed. The number of participants will depend on the number of students attending the program and the level of participant interest. Faculty supervision will be provided on both days by the two instructors who teach this course (to include myself).

All assessment tools, except one, that students will use to evaluate participants are either available free on-line or assessments that the IC OT Department currently owns. It is anticipated that most of the materials and supplies used during the intervention phase of the program will also be readily available from current IC OT Department supplies.

Anticipated costs for the program include purchasing the Action Research Arm Test, an evidence-based reliable assessment of UE function status post stroke (Pike et al., 2018), constraint mitts for the participants' unaffected limb, food and beverages for daily refreshments and lunch, and miscellaneous therapeutic supplies. The program will be located in CHS 208, and meals will be prepared in CHS 204, the OT Department's kitchen.

Program outcomes will be measured in multiple ways.

1. Student outcomes will be measured via a pre and post questionnaire rating knowledge, skill level, and confidence in utilization of mCIMT . Additionally, a post-program evaluation will be completed.
2. Participant outcomes will be measured via the pre, and posttest measures previously identified. Additionally, participant satisfaction with the program will be evaluated.

## Costs - itemized costs

Action Research Arm Test <http://saliarehab.com/>  
\$595 + \$95 shipping= \$690

Mitts/Gloves Genmine Finger Control Mitts

Amazon.com

12.99/mitt x 8 participants (+tax/shipping) = \$120

Refreshments & Snacks, \$5/person/day x 8 x 2 days= \$80

Food for meals (lunch), \$15/person/day x 8 x 2 days= \$240

Misc. Therapeutic Supplies= \$100

Total Estimated Costs \$1230

Note: Costs for food, misc. supplies, and tax/shipping on mitts are grossly estimated.

### Expected Outcomes

Though this intensive two-day modified CIMT UE motor recovery program is designed as a supplemental learning opportunity for graduate students enrolled in the Fall 2021 semester, it is intended to also be a pilot that may inform future programming such as a weeklong CIMT camp, an annual neurorehabilitation UE clinic, or a graduate elective course. This type of additional programming would provide future opportunities for supplemental experiential learning for students at all levels, interprofessional education, and faculty-student research, while also fostering IC-community engagement by providing much needed neurorehabilitation services to local stroke survivors. It is hoped that by offering this program for current graduate students, it will promote enhanced knowledge, skills, and confidence in utilizing evidence based interventions, such as CIMT and mCIMT, in clinical practice after they graduate to better meet the recovery and participation needs of stroke survivors.

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<b>Select Department Chair</b>	jdorsey@ithaca.edu
<b>Select Dean</b>	lpetrosino@ithaca.edu
<b>Current CV</b>	<a href="https://ithacaedu-my.sharepoint.com/:b:/g/personal/cmatisco_ithaca_edu/EUnyhHqDZGuzgEp51BXkIBcjJgqofY610Pj8QjgJ9N7Q?name=/94700577_94700516__110908616_S.ScottCV092021.pdf">https://ithacaedu-my.sharepoint.com/:b:/g/personal/cmatisco_ithaca_edu/EUnyhHqDZGuzgEp51BXkIBcjJgqofY610Pj8QjgJ9N7Q?name=/94700577_94700516__110908616_S.ScottCV092021.pdf</a>
<b>Letter of support from colleague</b>	<a href="https://ithacaedu-my.sharepoint.com/:b:/g/personal/cmatisco_ithaca_edu/EcxDC91e4dHm8d5niy3FwUBCd6DC50FkC0m2d_xkA1Zsg?name=/94700577_94700516__110908617_ScottIDFletter_MAC_2021.09.14.pdf">https://ithacaedu-my.sharepoint.com/:b:/g/personal/cmatisco_ithaca_edu/EcxDC91e4dHm8d5niy3FwUBCd6DC50FkC0m2d_xkA1Zsg?name=/94700577_94700516__110908617_ScottIDFletter_MAC_2021.09.14.pdf</a>

**Applicant Signature (type name): If this grant is awarded, your signature on this proposal authorizes the Center for Faculty Excellence to share this application with your colleagues at Ithaca College to assist them in writing future proposals.** Shannon L. Scott

### Department Chair or Program Director Approval

<b>As Department Chair or Program Director, I approve of the proposed project</b>	yes
<b>Department Chair or Program Director Signature</b>	Julie Dorsey
<b>Comments, optional</b>	This will be a valuable experience for our students and for the clients involved.

### Dean Approval

<b>As Dean, I approve of the proposed project</b>	yes
<b>Dean Signature</b>	Linda A Petrosino