

2024 Catalyst Grant Program Mentorship Grant Application

Funding Opportunity for Innovative Ideas from All Employees

Catalyst Grants fund projects that enhance translational research, foster innovation, and range in cost and complexity.

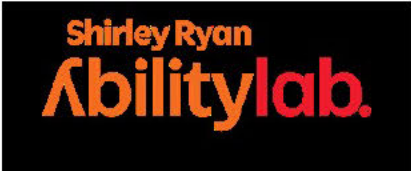
MENTORSHIP GRANT SUMMARY

Grant Description	Funding Amount	Timeline	Final Deliverables
Involves mentorship from experienced researcher to support an applicant's professional research development.	\$10,000- \$25,000	12-18 months	<ul style="list-style-type: none"> ▪ Evidence of research skill development ▪ Plan for future research involvement ▪ Presentation (external) ▪ Publication (highly recommended) <ul style="list-style-type: none"> - Abstract - Manuscript

The Mentorship Grant is intended for individuals who are interested in expanding their research knowledge through structured mentorship while working on a project that impacts patient care. These projects must address a clinical problem or develop a research tool. Their work will be mentored by an experienced researcher, and the goals of this grant are to develop the research skills of the mentee and create a plan for future research activities. Consequently, the mentee will be expected to identify clear and quantifiable mentorship goals and demonstrate evidence of achievement.

Mentorship Grant Application Instructions

- 1) **Every application must include a researcher and non-researcher (clinician or non-clinician).** Applicants do not need to have previous research experience, but must have a research partner. If you need assistance identifying a research partner, please contact Melissa Briody (mbriody@sralab.org).
- 2) The Mentorship Grant Application consists of 6 sections. Please complete all sections with single-spaced Arial 11pt font and follow instructions carefully.
- 3) Application Resources are available at www.sralab.org/CatalystGrant2024
- 4) Applications for all grant types should be submitted as a single PDF file at <https://competitions.fsm.northwestern.edu/grants/CatalystGrant24> by **March 1, 2024, 11:59pm CST.**



1. Cover sheet

Title of project:

Training clinicians to use effective cueing strategies to optimize outcomes for clients with cognitive dysfunction: a study of clinical implementation effectiveness

Grant Applicants

Each team member must be identified by their formal role in the organization.

Team Member	SRALab Position	Department	Role on this project
Mentee(s)			
Kelsey Watters	Clinical Practice Leader for OT	Internal Staff Development	Lead investigator
Mentor(s)			
Miriam Rafferty	Director of Implementation Science	Strength and Endurance Lab	Research Mentor
Jessica Edelstein	Research Scientist	Strength and Endurance Lab	OT Research Collaborator
Additional personnel			
Lindsay Escott	Senior II occupational therapist	Think and Speak Lab	Contributing OT

Total Funding Amount Requested: \$24, 211.53 _____

Signature of primary mentee: Kelsey Watters

Date: 3/15/2024

Signature of primary mentor: Miriam Rafferty

Date: 3/15/2024

2. Research Plan (2-pages maximum; 2a-f)

a. Introduction: Cognitive dysfunction is associated with longer hospitalizations and higher frequency of long-term disability as well as decreased performance of and participation in daily routines (Plante et al., 2021; Stelmokas et al., 2020). Existing evidence suggests that rehabilitation programs with “tailored and intensive treatment[s]” can improve the outcomes of clients with cognitive dysfunction (Mazzola et al., 2018; Patil et al., 2017). An aspect of these complex interventions that supports successful occupational performance is the use of specific cueing strategies that align with a client’s functional cognitive presentation; however, appropriate cueing profiles vary based on client need. For example, the use of direct cues or instructions can support clients with severe cognitive dysfunction when completing specific tasks (Ciro et al., 2014; Skidmore et al., 2017). In contrast, “guided discovery” supports clients who may have less severe cognitive dysfunction to become expert problem solvers by increasing their awareness of errors during a task (Doig et al., 2017; Skidmore et al., 2017). Despite established evidence that supports the use of these cueing strategies, these strategies are inconsistently used by clinicians in clinical practice and clinicians tend to provide too many cues during sessions (Urquhart & Skidmore, 2014).

To better align clinical practice with the available evidence, pilot training programs were designed for inpatient occupational therapy practitioners (OTPs) at Shirley Ryan AbilityLab (SRALab) to improve the use of effective cueing strategies during therapy sessions. The first training program conducted in 2017 focused on reviewing strategy training (Skidmore et al, 2017) and measured trainee feedback as well as the type and frequency of cues used by OTPs during therapy sessions. Recorded therapy sessions were coded using a deductive coding process and adapted coding rubric (Urquhart & Skidmore, 2014). After the training, clinicians (n = 6) reported improved knowledge of how to appropriately use cues within sessions and decreased the overall frequency of cues used during therapy sessions, however reported limited improvements in their to use the intervention strategies in their practice or share with others. The original training program was redesigned to focus on improving both trainee knowledge and confidence in using specific cueing strategies that optimize outcomes in clients with cognitive dysfunction. The redesigned program was piloted in 2022 with a focus on facilitating knowledge translation and trainees (n = 6) were dubbed “cue champions” as a component of the training included sharing their newly acquired skills with peers and colleagues. Participants self-reported improvements in their knowledge base and confidence to measure change in practice over time, however, there are limitations to measuring the success of such a training program by only using self-report data (no data was recorded on specific cue types used in practice). The proposed third iteration of the training program, and the enclosed application, is an expansion of the previously established training program and aims to more directly measure the effects of the training program on the following areas: (1) OTP knowledge of cueing strategies, (2) confidence in using and teaching others to use the cueing strategies, (3) type and frequency of cues actually used within treatment sessions and (4) client perception of different cueing strategies. Data would be collected immediately before and after the training program as well as at during a five-month, post-training follow up. This work has the potential to improve service delivery provided to clients with cognitive dysfunction, optimize client outcomes, and minimize long-term disability.

b. Specific aim(s): Previous iterations of this work have followed small quality improvement cycles. In this study I am seeking mentorship to advance my ability to apply more rigorous implementation research methods to more precisely describe interventions and outcomes to our staff development activities. As the clinical practice leader for OT, I am positioned well to provide future mentorship to junior colleagues in the future. Completing the proposed aims will improve my ability to rigorously collect data and learn data management.

Aim 1: To capture how the cueing training program changes the type and frequency of cueing strategies used by OTPs within their clinical practice.

Aim 2: To assess client’s experience during treatment sessions when OTPs use different cueing strategies using self-report questionnaires and clinical outcomes, (i.e. Canadian Occupational Performance Measure).

c. Methods: Our implementation intervention will be to conduct a 12-week multi-dimensional training program, which will target up to 10 clinician trainees who will complete pre-work readings, five synchronous sessions and individualized mentoring opportunities (with trainers, peer trainees and non-trained peers). To address Aim 1, we will videotape at least two treatment sessions of a trainee working with a client. Each videotaped session will be coded using an established rubric to determine the type and frequency of cueing strategies used by

trainees during treatment sessions. Additionally, we will gather self-reported knowledge and confidence levels on trained concepts, utilization of strategies in practice, and knowledge translation to other OTPs. This will be collected before the training program (within 1 month), immediately after the training program (within 1 month) and 5 months after the training program. To address Aim 2, we will survey clients receiving OT services from trainees about their experience working with trainees during treatment sessions to measure any changes in their experience as it relates to engagement, collaboration, empowerment and satisfaction as it correlates with the type and frequency of cueing strategies used.

c. Outcomes: The anticipated outcomes from this project are as follows:

1. Track and measure metrics of the training program to determine the overall effectiveness of the training program on the frequency of cueing, types of cueing and sustained use of cueing strategies.
2. Improvement in trainee self-reported knowledge of concepts, confidence to use cueing strategies in their treatment sessions and confidence to contributing to knowledge translation to others
3. Change in client’s experience when OTPs use cueing strategies that are more collaborative and focused on problem solving versus more directive (expect to see more positive experience as established during likert scale survey about experience).

d. Project timeline

Month of project→	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Complete IRB application	█																	
Design rubrics for videos and observed sessions	█	█	█															
Collect pre-training #1 data				█														
Conduct training program #1					█	█	█											
Code pre-training videos (#1)					█	█												
Collect post-training data #1 (1 mo)								█										
Code post-training videos #1 and begin data analysis								█	█									
Collect post-training #1 data (5 mos)												█						
Collect pre-training #2 data									█									
Conduct training #2										█	█	█						
Code pre-training videos (#2)										█	█							
Collect post-training data #2 (1 mo)													█					
Data analysis and writing														█	█	█	█	█
Collect post-training #2 data (5 mos)																		█

e. Plan for final deliverables and dissemination

i. Evidence of acquired research skills: For primary applicant, I will advance my implementation science research skills by rigorously documenting the training program using TiDler checklist in preparation for publication. I will also be collecting data on more individuals (trainees and clients) overtime so I will learn data collection and management skills that will also be used to prepare a publication describing study outcomes. For contributing OTP, they will complete video coding and contribute to scientific poster presented at AOTA.

ii. Plan for future research involvement: Plan to expand research of training program beyond inpatient OTPs (i.e OTPs in Day Rehab and alliance sites)

iii. External presentation(s): Plan to submit proposal for presentation at AOTA and ACRM annual conferences

iv. Publication(s) (highly recommended but not required): Submit a first-author manuscript for publication in a peer-reviewed journal, such as the American Journal of Occupational Therapy

3. Mentorship Goals (1 pg max)

a. Identify the primary and secondary mentor(s) if applicable and describe how their areas of expertise will facilitate the mentee's development of research skills

Miriam Rafferty, PhD is an expert in implementation science and knowledge translation within rehabilitation medicine. Her experience as an implementation scientist who is embedded within a clinical setting is key to this project focused on changing and improving clinical practice. She will be instrumental in mentoring Kelsey Watters, CScD to design an effective implementation study that carefully tracks meaningful outcomes from past and the proposed quality improvement efforts.

Jessica Edelstein, PhD, OTR is an expert in occupational therapy-specific health services research and will work with Dr. Rafferty to provide additional mentorship in how to design and execute this study to more effectively capture outcomes that are relevant to the delivery of effective therapy services and result in optimal occupational therapy patient outcomes.

b. Identify 1-3 training goals that will facilitate mentee's development of research skills and/or career

By the end of this mentoring program, the primary mentee will

- Demonstrate the capacity to design a quality improvement research study with the rigor necessary for publication
- Be able to efficiently code and analyze data from video recordings.
- Draft a first-author manuscript describing the outcomes of a quality improvement research project that has built in complexity and rigor over the last 7 years. This manuscript will be submitted for a Baskin research award, as well as for publication in the American Journal of Occupational Therapy.

c. Estimated schedule to meet with mentor(s)

During the initial phases of the project (months 1-3), primary mentee and mentors will meet every 3 weeks to develop and complete the IRB, design the survey and coding rubrics. During the data collection period (months 4-13), meetings will occur once a month to ensure the project is progressing appropriately. In the final phase of the project (months 14-18), after most of the data is collected, meetings will occur every 2-4 weeks to ensure data analysis and interpretation and facilitate efficient completion of manuscript.

d. Signed letter of support from mentor (please attach at end of application)

4. Literature References

- Ciro, C. A., Poole, J. L., Skipper, B., & Hershey, L. A. (2014). Comparing differences in ADL outcomes for the STOMP intervention for dementia in the natural home environment versus a clinic environment. *Austin Alzheimers Parkinsons Disease, 1*(1). <https://www.ncbi.nlm.nih.gov/pubmed/28261703>
- Doig, E., Fleming, J., Ownsworth, T., & Fletcher, S. (2017). An occupation-based, metacognitive approach to assessing error performance and online awareness. *Australian Occupational Therapy Journal, 64*(2), 137-148. <https://doi.org/10.1111/1440-1630.12322>
- Engel, L., Chui, A., Goverover, Y., & Dawson, D. R. (2019). Optimising activity and participation outcomes for people with self-awareness impairments related to acquired brain injury: An interventions systematic review. *Neuropsychological Rehabilitation, 29*(2), 163-198. <https://doi.org/10.1080/09602011.2017.1292923>
- Mazzola, P., Merla, L., Guerini, V., Cappuccio, M., Bellelli, G., & Annoni, G. (2018). Cognitive performances and rehabilitation outcomes: Focus on patients with cognitive impairment. *Innovation in Aging, 2*(suppl_1), 503-504. <https://doi.org/10.1093/geroni/igy023.1871>
- Patil, M., Gupta, A., Khanna, M., Taly, A. B., Soni, A., Kumar, J. K., & Thennarasu, K. (2017). Cognitive and functional outcomes following inpatient rehabilitation in patients with acquired brain injury: A prospective follow-up study. *Journal of Neurosciences in Rural Practice, 8*(3), 357-363. https://doi.org/10.4103/jnrp.jnrp_53_17
- Plante, J., Latulippe, K., Kroger, E., Giroux, D., Marcotte, M., Nadeau, S., Doyle, E., & Rockwood, K. (2021). Cognitive impairment and length of stay in acute care hospitals: A scoping review of the literature. *Canadian Journal on Aging, 40*(3), 405-423. <https://doi.org/10.1017/S0714980820000355>
- Schmidt, J., Lannin, N., Fleming, J., & Ownsworth, T. (2011). Feedback interventions for impaired self-awareness following brain injury: a systematic review. *Journal of Rehabilitation Medicine, 43*(8), 673-680. <https://doi.org/10.2340/16501977-0846>
- Skidmore, E. R., Butters, M., Whyte, E., Grattan, E., Shen, J., & Terhorst, L. (2017). Guided training relative to direct skill training for individuals with cognitive impairments after stroke: A pilot randomized trial. *Archives of Physical Medicine and Rehabilitation, 98*(4), 673-680. <https://doi.org/10.1016/j.apmr.2016.10.004>
- Stelmokas, J., Rochette, A. D., Hogikyan, R., Kitchen Andren, K. A., Reckow, J., Sciaky, A., Bieliauskas, L., & Alexander, N. B. (2020). Influence of cognition on length of stay and rehospitalization in older veterans admitted for post-acute care. *Journal of Applied Gerontology, 39*(6), 609-617. <https://doi.org/10.1177/0733464819853989>
- Stephens, J. A., Williamson, K. N., & Berryhill, M. E. (2015). Cognitive rehabilitation after traumatic brain injury: A reference for occupational therapists. *OTJR: Occupation, Participation and Health, 35*(1), 5-22. <https://doi.org/10.1177/1539449214561765>
- Urquhart, J.R. & Skidmore, E.R. (2014). Guided and Directed Cues: Developing a Standardized Coding Scheme for Clinical Practice. *OTJR, 34*(4), 202-208. doi:10.3928/15394492-20141006-05.

b. Budget Justification

The primary investigator and mentee (KW) will be responsible for the following

- Leading the IRB application and approval (25 hours)
- Development of coding rubrics and revision to training materials (15 hours)
- Conducting and revising the two cue training programs (40 hours)
- Conducting coding of recorded videos for two training cycles (60 hours) – coder #1
- Leading data analysis (30 hours)
- Writing the results within a manuscript (30 hours)

The senior II OT (LE) will be responsible for the following:

- Contributing to IRB and revisions (10 hours)
- Contributing to revisions of the two cue training programs (10 hours)
- Conducting coding of recorded videos for two training cycles (60 hours) – coder #2
- Contributing to data analysis (10 hours)
- Contributing to the manuscript (10 hours)

6. Biosketch

Biographical sketch, resume, or CV for each team member. Biographical sketches must be formatted to NIH requirements. Template and examples are located at <http://grants.nih.gov/grants/forms/biosketch.htm>

March 5th, 2024

Dear Kelsey,

We are writing to express our enthusiastic support for your **Mentorship Grant Application in the 2024 Catalyst Grant Program** to further your research and mentorship in the project titled **“Training clinicians to use effective cueing strategies to optimize outcomes for clients with cognitive dysfunction: A study of clinical implementation effectiveness.”** As the Director of Implementation Science at Shirley Ryan AbilityLab (SRALab) and a Research Scientist I, we are thrilled to serve as mentors on your research project. Your clinical background as an occupational therapist and leadership position in the Department of Internal Staff Develop will undoubtedly lead to a successful research project.

As your mentors, we have had the privilege of closely working with you and witnessing your exceptional leadership, dedication, and passion for improving clinical outcomes in the field of cognitive dysfunction. Throughout your tenure in the Department of Internal Staff Development, you have consistently demonstrated profound commitment to advancing evidence-based practices and enhancing the quality of care provided to clients with cognitive impairments. As we continue to mentor your knowledge of implementation research, Dr. Edelstein will serve as a first line mentor, providing weekly input on your project. Dr. Rafferty will meet with you and Dr. Edelstein at least monthly, or more often during busy times of project development and analysis as needed.

Your proposed project, aimed at training occupational therapists to employ effective cueing strategies, reflects your innovative thinking and deep understanding of the complexities involved in optimizing outcomes for individuals with cognitive dysfunction. Your approach not only addresses a critical gap in current clinical practices but also has the potential to significant impact the lives of countless individuals and their families.

Furthermore, we believe that by providing mentorship to you, we are not only supporting your professional growth but also investing in the future growth and research expertise of SRALab. You are well-positioned in the Department of Internal Staff Development to share the skills and insights gained from the mentorship grant with other occupational therapists at SRALab. You are already an exceptional leader and by demonstrating to others your drive to continue to learn and grow by applying for the mentorship grant will help to foster a culture of perpetual learning and improvement at SRALab, which will ultimately help our clients achieve the best possible outcomes.

We firmly believe that investing in your professional development through the Mentored grant will not only yield significant contributions to the field of Occupational Therapy but also empower you to continue to make meaningful advancements in clinical research and practice. Your dedication, intellect, and unwavering commitment to improving the lives of individuals with cognitive dysfunction make you a truly deserving candidate for Mentored grant.

In conclusion, we strongly endorse your application and urge the reviewers to give it full consideration. Should the reviewers require any further information or clarification regarding your qualifications or the proposed project, please tell them to contact us directly.

Sincerely,

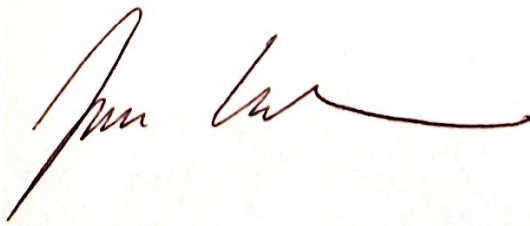


Miriam Rafferty PT, DPT, PhD, NCS

Director of Implementation Science, Research Scientist II, Shirley Ryan AbilityLab, Assistant Professor, Northwestern University Feinberg School of Medicine, Department of Physical Medicine and Rehabilitation, Department of Psychiatry and Behavioral Science, and Department of Medical Social Sciences

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