

# COURAGE KENNY RESEARCH CENTER

Winter 2023

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Welcome to the Winter edition of the Courage Kenny Research Center newsletter! We aim to share news about what is happening with some of our research studies and our ongoing collaborations with Courage Kenny Rehabilitation Institute clinicians, leaders, and staff. Read on for selected highlights of our new research therapists, a newly-initiated project, current studies, and dissemination.

## In This Issue



Research  
Therapist 2024



Beyond Performance



Research Meets Practice



2023 to Date

## Research Therapists

*We would like to thank Natalie and Carolyn for all of their efforts & dedication to the Research Center this year.*



As we wrap up the 2nd year of the research therapist program at CKRC, we asked our 2023 cohort to reflect on their experiences. We look forward to seeing this program continue to flourish in 2024.

### Carolyn Holm, PT, DPT

***What research experience did you have prior to your appointment as a 2023 CKRC Research Therapist?***

During PT school at the U of MN, I was involved in a research project studying motor task performance under various cognitive conditions in participants with stroke. Additionally, during a neuro residency program after PT school, I worked with faculty on several research projects involving neuro populations.

***What CKRC projects were you involved in?***

While in the research therapist role, I was primarily involved in the Courage Kenny fibrosis grading scale study led by Dr. Laura Gilchrist and Dr. Maggie Weightman. I also assisted

Maggie with work on her studies in the TBI population and a Research Meets Practice talk on Dual-task Assessment in the Neuro population.

***What surprised you most about the research therapist role or CKRC?***

I gained a true appreciation for all that goes into completing a research study. The team in the research center was really great about involving me in many aspects of research and provided an incredible learning opportunity.

***Part of the CKRC goal's is considering how research meets practice. What research experiences do you look forward to implementing in your practice?***

After the research therapist program, I have become much more efficient in reading, summarizing, and appraising research articles. I hope to continue the practice of staying up to date on research and implementing what I find into my practice in the future.

***Based on your experiences this year, do you have interest in pursuing research in the future?***

Yes! I will stay involved in ongoing projects over the next few months and plan to pursue future research opportunities as well.

## Natalie Becker, M.S., CCC-SLP

### *What research experience did you have prior to your appointment as a 2023 CKRC Research Therapist?*

Very minimal. My most recent exposure to research was the research methods class in graduate school approximately 13 years ago.

### *What CKRC projects were you involved in?*

I've primarily been involved in Katy O'Brien's research, including Reading after TBI study, Reading after ABI, and reviewing reading levels of various hospitals' TBI education materials. I have also been involved in Natalie Covington's Personalized Rehab and Cognitive Effort studies. I assisted with consents for Mary Radomski's Post-Concussion Compass Course study.

### *What surprised you most about the research therapist role or CKRC?*

I was surprised by how much of what I've learned this year is directly applicable to my clinical work. I used to perceive a wide gap between clinical practice and research, and this experience has helped to break down that barrier.

I was also surprised by the complexity of the logistics and preparation needed to conduct research. The process of obtaining funding, specifying protocols, interacting with IRB, creating surveys and databases, recruiting participants, etc. was more complicated than I imagined.

### *Part of the CKRC goal's is considering how research meets practice. What research experiences do you look forward to implementing in your practice?*

I have learned so much over this year that is directly applicable to my clinical work. I increasingly rely on research literature to guide my clinical work and ensure I am providing best patient care—e.g., discontinuing commonly used "traditional" approaches that have been disproven, investigating newer approaches that are less familiar, etc. Searching for and reviewing research feels much less intimidating than it did before my experience with CKRC.

### *Based on your experiences this year, do you have interest in pursuing research in the future?*

Absolutely! Being involved with CKRC has not only helped to demystify the research process, also to appreciate that having a clinical background can be a strength in the research setting. I would be very interested in continuing efforts to bridge the gap between clinical practice and research.

## 2024 Research Therapists:

Courage Kenny Research is pleased to announce **Ryan Brutger (PT, Mercy)** and **Caitlin Klukas (SLP, TRP)** will spend the next year working one day a week with CKRC at the Abbott Northwestern campus. We received 10 applications this year and it was a difficult decision. We are looking forward to an exciting year with Ryan and Caitlin! And we thank all of our applicants for their interest in working with us.

## **Snapshot: Beyond Performance: Characterizing Cognitive Effort after Traumatic Brain Injury**



Natalie Becker, SLP; Will Schaefer, SLP; Natalie Covington, PhD, CCC-SLP; Olivia Vruwink, SLP; Nikki Demmer, SLP

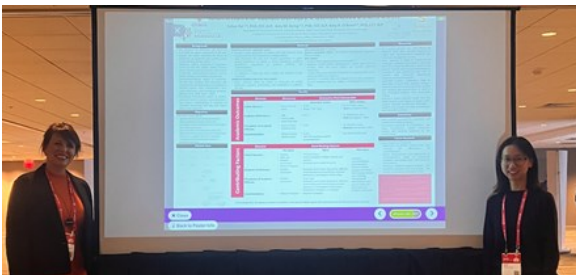
After traumatic brain injury (TBI), memory impairments are common, but there is significant variability in the nature and degree of memory impairment across individual patients. Memory impairments impact a person's ability to learn and remember in their daily lives but can also impact their success in rehabilitation. In this study, we are interested in how individual differences in the nature and degree of memory impairment are related to response to intervention approaches that differ in their memory demands. This project is funded by the Minnesota Office of Higher Education TBI Grant program. Adults with a history of moderate-severe TBI will complete an initial memory assessment with team members including **Natalie Becker, SLP, Nikki Demmer, SLP, Will Schaefer, SLP, and Olivia Vruwink, SLP**. The assessment will characterize the nature and degree of participants' memory impairments using experimental measures that principal investigator **Natalie Covington, PhD CCC-SLP** and collaborators at Vanderbilt University and the University of Illinois have been developing over the past 7 years. We will investigate whether a person's performance on these novel memory measures is predictive of their response to intervention strategies that rely more or less heavily on a particular memory system. We hope that results of this study will help to inform data-driven approaches to matching individual patients to particular intervention approaches, based on their unique profile of memory impairment.

## A Look at 2023 Research Activity



**Maria Spencer PT, DPT, NCS** and **Jennifer Theis, MS, OT** presented their poster at Academy of Spinal Cord Injury Professionals (ASCIP) in San Diego, CA on September 3-6, 2023. The conference drew a variety of attendees across professional disciplines. As the researchers had numerous people stop to ask about our work. We used an updated poster format to draw attention from attendees as well as giving ourselves talking points. The poster covered our experiences creating and implementing technology guidelines for people with spinal cord injury. We were able to attend thanks to an Allina Health Foundation Grant!

**Natalie Covington, PhD CCC-SLP**, attended the Academy of Neurological Communication Disorders and Sciences (ANCDs) annual meeting and the American Speech-Language-Hearing Association (ASHA) Convention in Boston in November. **Olivia Vruwink, M.S. CCC-SLP**, a PhD student completing an academic experience at CK Research also attended both meetings. Dr. Covington and Olivia presented the preliminary results of a qualitative study investigating patient and clinician preferences related to outcome measurement in traumatic brain injury rehabilitation. Olivia received a competitive ASHA Research Mentoring-Pair Travel Award, for which Dr. Covington served as the faculty mentor. Dr. Covington also served as a faculty mentor for the ANCDs student fellows program.



**Dr. Katy O'Brien's** doctoral students, Amy Kemp and Yalian Pei, presented results from their dissertation projects at the American Congress of Rehabilitation Medicine in Atlanta, Georgia last month. These projects examined

return to learn after concussion and feasibility of a cognitive intervention for older adults to prevent falls. Dr. O'Brien also attended several task force meetings as part of the Cognitive Rehabilitation and Rehabilitation Treatment Specification System work groups. Next year's conference will be held in Dallas, TX at the end of October.

## Newly funded research

Did you know that the Bioness Integrated Therapy System (BITS) subtests used for the Community Access Screen use the same pass/fall criteria from the Dynavision subtests without any research to support equivalency of the measures? A new study, "Score agreement of two devices that assess readiness for the behind-the-wheel assessment" will address this gap. Participants will do both sets of subtests on the Dynavision and BITS during the Community Access Screen to measure agreement between scores. Data collection will occur at sites that still have both devices, specifically: ANW, United and Stillwater. PI: **Sharon Gowdy Wagener, OTD, OTR/L** and Co-PI: **Alisa Kocian, MA, OTR/L**.

## Courage Kenny Research Center Holiday Festivities

On December 5, staff from Courage Kenny Research and Neuroscience Research came together to celebrate the season and collect



gift cards to support two families through Way to Grow. We were able to raise enough to support both families, including one family of six and one family of three.

## Thank you to all of our clinical partners

As 2023 comes to a close, we would like to recognize the time and dedication of all of our therapists and clinical partners. A special thank you goes out to the clinics and therapists who have been so welcoming to our staff collecting data for the SENSE study. Alisa Kocian expressed participation appreciation for support from our Mercy, Edina, and Plymouth sites. We look forward to continuing our many partnerships through our future Research.

## 2023 Presentations and Publications

### Publications year-to-date:

- Antonellis, P., **Weightman, M.M.**, Fino, P.C., Chen, S., Lester, M.E., Hoppes, C.W., ... & King, L.A. (2023). Relationship between cognitive assessment and clinical physical performance measures after mild traumatic brain injury. *Archives of Physical Medicine and Rehabilitation*.
- Fino P.C., **Michielutti P.**, Pelo R., Parrington L., Dibble L.E., Hoppes C.W., Lester M., **Weightman M.M.**, King L.A. (2023). A hybrid assessment of clinical mobility test items for evaluating individuals with mild traumatic brain injury. *J Neurol Phys Ther.* Apr 1;47(2):84-90.
- Kemp, A.M., Neese, M., Norton, G., & **O'Brien, K.H.** (2023). Applying the Common-Sense Self-Regulation Model to Understand Illness Representations of Mild Traumatic Brain Injury in College Students. *The Journal of Head Trauma Rehabilitation*, 10-1097.
- Kemp, A.M., Norton, G., Neese, M., Pei, Y., & **O'Brien, K.H.** (2023). A theory-based exploration of psychosocial factors influencing concussion health seeking intentions in college students. *Journal of American College Health*. Online ahead of print.
- Kemp A.M., Wallace T., **O'Brien K.H.** (2023). Reconceptualizing recovery after concussion: A phenomenological exploration of college student experiences. *American Journal of Speech-Language Pathology*, 32(2S), 867-882.
- O'Brien, K.H.**, Pei, Y., Kemp, A.M., Gartell, R., & Wallace, T. (2023). Pilot testing the SUCCESS peer mentoring program for students with concussion: the role of personas in mobile technology development. *Disability and Rehabilitation: Assistive Technology*, 1-16.
- O'Brien, K.H.**, Wallace, T., Kemp, A.M., Pei, Y. (2023). The SUCCESS peer mentoring program for college students with concussion: Preliminary results of a mobile technology delivered intervention. *International Journal of Environmental and Public Health*. Online ahead of print.
- Pei Y., Kemp A.M., **O'Brien K.H.** (2023). A systematic review and meta-analysis of student perspectives and outcomes following return to learn after concussion. *Journal of School Health*, 93(7), 594-620.
- Pei Y., **O'Brien K.H.** (2023). Development and Initial Validation of the Sources of Reading Self Efficacy Scale for College and University Students (SOURCES-C). *Journal of Research in Reading*, 46(3), 225-246.
- Radomski, M. V., Anheluk, M.**, Carroll, G. L., **Kath, K., Kreiger, R., & Zola, J.** (2023). Feasibility of a Group-Based Purpose Renewal Intervention for Cancer Survivors Via Zoom. *OTJR: Occupational Therapy Journal of Research*, 15394492231156119.
- Radomski, M. V., Anheluk, M.**, Carroll, G. L., **Kath, K., Kreiger, R., & Zola, J.** (2023). Feasibility of a Group-Based Purpose Renewal Intervention for Cancer Survivors Via Zoom. *OTJR : occupation, participation and health*, 43(3), 399-407.
- Weightman, M.M.**, King, L.A., Fino, P.C., Dibble, L.E., Pelo, R., **Michielutti, P.G.**, ... & Hoppes, C. W. (2023). Reconsidering vestibular/ocular motor screening cutoff scores for concussion. *Military medicine*, usad394.
- Weston A.R., Antonellis P., Fino P.C., Hoppes C.W., Lester M.E., **Weightman MM**, Dibble LE, King LA. (2023). Quantifying Turning Tasks with Wearable Sensors: A Reliability Assessment. *Phys Ther.* Epub ahead of print. PMID: 37802908.

### Selected presentations:

- Vruwink, O.**, Grabowski, A., McCurdy, R., Duff, M., **Covington, N. V.** (2023, November). "Measuring What Matters: Converging and Diverging Perspectives of Clinicians and Adults with TBI," American Speech-Language Hearing Association Convention, Boston, Massachusetts.
- Covington, N. V., Vruwink, O.** (2023, November). Large Language Models in Higher Education: Performance of ChatGPT in Undergraduate Neuroscience," American Speech-Language Hearing Association Convention, Boston, Massachusetts.
- Pei, Y. & **O'Brien, K. H.** (2023, October). Return to learn after mild traumatic brain injury (mTBI): A systematic review and meta-analysis. American Congress of Rehabilitation Medicine. Atlanta, GA.

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### Courage Kenny Research Center Staff

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#### Mission:

Our mission is to conduct innovative, relevant clinical research that advances the field and improves rehabilitative care provided to people served by Courage Kenny Rehabilitation Institute and Allina Health.