

**BIOGRAPHICAL SKETCH**

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NAME: Courtney W. Hess, PhD

eRA COMMONS USER NAME (credential, e.g., agency login): C.HESS

POSITION TITLE: Postdoctoral Scholar

EDUCATION/TRAINING:

INSTITUTION AND LOCATION	DEGREE	COMPLETION DATE	FIELD OF STUDY
University of Wisconsin – Milwaukee, Milwaukee WI	B.S.	05/2013	Kinesiology
University of Wisconsin – Milwaukee, Milwaukee WI	M.S.	12/2015	Kinesiology
University of Massachusetts Boston	PH.D.	08/2021	Counseling Psychology
Johns Hopkins University School of Medicine & Kennedy Krieger Institute, Baltimore MD	-	06/2021	Behavioral Pediatric Psychology (Predoctoral Clinical Internship)
Stanford University School of Medicine	-	Ongoing	Pediatric Pain Psychology (Postdoctoral Fellowship)

**A. Personal Statement**

I am a postdoctoral fellow with a 50/50 clinical/research appointment in the department of Anesthesiology, Perioperative, and Pain Medicine. My clinical and research experiences to date have informed my long-term career goal of becoming an independent clinical scientist with a program of study aimed at improving pain care through targeting interpersonal processes in the clinical encounter. I aim to do this through the application of Industrial Organizational psychology theory (i.e., the study of teams). Through this lens, I aim to assess and optimize provider and team-related factors (e.g., provider burnout, team communication) that can facilitate or undermine interpersonal processes central to clinical care (e.g., shared decision-making, patient-provider relationship). I am applying for the proposed K23 mentored career development award (CDA) to support my development in becoming an independent clinical investigator through individualized training and mentorship and execution of the proposed project. At the end of the proposed CDA I will have enhanced foundational skills and developed new skills to successfully transition into research independence and launch my program of study at the intersection of Industrial Organizational psychology and pediatric pain. In the proposed project I will establish an expert mental model of pain and pain treatment for pediatric WMSK pain integrating existing evidence and expert mental models including patients and caregivers. I will also devise a measurement tool to assess mental models and team mental models of pain and pain treatment for pediatric WMSK pain. Study results will most immediately provide insight into the relationship between team mental models and patient experiences in pain care as well as a novel measure to assess individual and team mental models in integrated pain care teams. Study results will also inform the development of a subsequent NIH R-level grant submission aimed at expanding implementation of the measurement tool into the pain care field, and development of interventions to improve alignment in mental models within pain care teams. Moreover, I will continue to examine mental model alignment alongside interpersonal processes within the clinical encounter (e.g., patient-provider relationships, shared decision-making) as they relate to patient experiences and outcomes. Future research will also include the assessment of mental models held by patients and caregivers as well as medical teams and providers outside of pain who will often engage with pediatric pain patients (e.g., oncology, rheumatology).

My previous training experiences have informed my research questions and prepared me to successfully carry out the proposed project. In my master’s degrees in Kinesiology, I specialized in integrated human performance, highlighting the biopsychosocial model of performance and resulted in my examination of integrated rehabilitation teams in sport. Since that time, I have trained clinically within world class academic medical institutions including the Warren Alpert Medical School at Brown University and affiliated Hasbro Children’s Hospital, and the Johns

Hopkins University School of Medicine and affiliated Kennedy Krieger Institute. Throughout my clinical training, I specialized in pediatric psychology, operating daily within integrated care teams for the benefit of patients and families. This training illuminated the complexity of delivering effective integrated care. I observed significant variability in treatment team functioning and the subsequent impact on patients and families. These experiences affirmed the importance of examining provider and team factors as they relate to interpersonal processes within the clinical encounter and patient outcomes.

Within my research training I have consistently applied a biopsychosocial lens to conduct clinical research focused on assessing and improving implementation of evidence-based care [b,c], developing cross-disciplinary interventions to improve physical and mental wellbeing of youth, and have centered patient and stakeholder perspectives to improve clinical uptake of treatments [a,d]. I have also developed expertise in mixed-method and qualitative methodologies and have applied these skills across several areas of research. Since starting my current position in Dr. Simon's Biobehavioral Pediatric Pain Lab in 2021, I have supported the execution of several grant funded studies including an NIH funded qualitative study (Journey in Pain Care; NIAMS K24AR078945) aimed at understanding patient and caregiver experiences navigating pain care. Within this study, we are exploring patient-provider interactions and assessing how care team functioning impacts patient engagement and progress through treatment. I have also supported an NIH funded feasibility randomized control trial (PRVR; NIAMS R21 AR079140) aimed at integrating virtual reality into the clinical flow of outpatient physical therapy to support pain treatment. In the past two years I have continued to be productive in research dissemination. I have authored 6 publications including 3 first author papers, with two additional first author publications in revision. I published a first author invited topical review in PAIN, the leading journal in our field, in which I outline how the science of teams can propel the field of pediatric pain forward. I have also presented nationally and internationally including 10 lectures, symposia, and workshops and 11 posters presentations. My training to date and ongoing mentorship uniquely situates me to carry out the proposed research project and continue toward establishing my independent program of study.

- a) Hess CW, Meyer BB. [Lived Experiences of an Elite Performance Management Team Through Injury Rehabilitation: An Interpretative Phenomenological Analysis.](#) J Sport Rehabil. 2022 Feb 1;31(2):199-210. doi: 10.1123/jsr.2021-0072. Epub 2021 Nov 15. PubMed PMID: 34784584.
- b) Hess CW, Howland J, Hackman H, Campbell JK, Vannoy S, Hayden L. [Implementation of Concussion Management Policies in High Schools: The Critical Role of School Nurses.](#) J Sch Nurs. 2023 Mar 14;;10598405231160249. doi: 10.1177/10598405231160249. [Epub ahead of print] PubMed PMID: 36916285.
- c) Hess CW, Rosen MA, Simons LE. [Looking inward to improve pediatric chronic pain outcomes: a call for team science research.](#) Pain. 2023 Apr 1;164(4):690-697. doi: 10.1097/j.pain.0000000000002836. Epub 2022 Nov 30. PubMed PMID: 36637136.
- d) Schemer L, Hess CW, Van Orden AR, Birnie KA, Harrison LE, Glombiewski JA, Simons LE. [Enhancing Exposure Treatment for Youths With Chronic Pain: Co-design and Qualitative Approach.](#) J Particip Med. 2023 Mar 9;15:e41292. doi: 10.2196/41292. PubMed PMID: 36892929; PubMed Central PMCID: PMC10037174.

## **B. Positions, Scientific Appointments, and Honors**

2019 – 2022	Teacher of Record, Counseling Psychology, University of Massachusetts Boston
2019 – 2021	Doctoral Psychology Extern, Pediatric Psychology, Warrant Alpert Medical School at Brown University; Hasbro Children's Hospital
2018 – 2019	Doctoral Psychology Extern, Pediatric Psychology, Warren Alpert Medical School at Brown University; Hasbro Children's Hospital
2017 – 2019	Doctoral Teaching Assistant, Counseling Psychology, University of Massachusetts Boston
2016 – 2017	Doctoral Research Fellowship, University of Massachusetts Boston
2013 – 2015	Graduate Teaching Fellowship, University of Wisconsin-Milwaukee

## **Travel and Training Awards**

2021	The Sport Psychologist Young Researcher Award.
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2017 & 2018	Graduate Employee Organization Scholarly Support Award.
2017	Graduate Student Assembly Research Grant Award.
2016	Graduate Student Assembly Professional Development Grant Award.
2013	Undergraduate Research Fellow, Department of Kinesiology, Neuromechanics Laboratory.
2012	Undergraduate Research Fellow, Department of Kinesiology, Neuromechanics Laboratory.
2009-2013	Athletic Academic Scholar. University of Wisconsin-Milwaukee.
2008-2012	Illinois Scholar Award. University of Wisconsin-Milwaukee.

## Professional Memberships

2022-	Canadian Pain Society
2021-	Pain in Child Health Trainee
2021-	International Association for the Study of Pain, SIG membership: <i>Pain in Childhood</i>
2021-	European Pain Federation
2018-	Society of Pediatric Psychology, SIG memberships: <i>Pain; Orthopedic &amp; Sports Medicine (Student Representative)</i>
2016-	American Psychological Association
2013-	Association for Applied Sport Psychology

## C. Contributions to Science

- Applying industrial organizational principles to examine provider characteristics and care team functioning in novel populations.** Following the Institute of Medicine report “To Err is Human” published in 2001, in which teamwork failures were highlighted as a primary contributor to adverse patient outcomes, the way in which teams operate has been studied in many spheres of healthcare. Researchers have applied industrial organizational psychology within diverse healthcare teams including surgical teams and trauma units and their findings have been consistent – the way in which teams operate directly impacts patient care and outcomes. Despite these critical findings, gaps in the understanding of care teams still exist. My research has worked to expand these principles within contexts where the functioning and impact of teams is less well understood. I have authored conceptual papers that have moved the field forward, offering a framework for examining care teams in high performance sport [b], pediatric pain [d], and youth concussion [a]. I have utilized qualitative methodology to examine the lived experiences of a care team through injury and rehabilitation [c] which resulted in identification of a conceptual model inclusive of targets for improving team functioning and outcomes in sport injury rehabilitation. These efforts have resulted in 4 peer-reviewed publications, 1 book chapter, 6 national and international symposia and lectures, and 4 poster presentations at national and international conferences.

  - Hayden L, **Hess CW**, Broadhead S, Gould K. A school-based multidisciplinary response to student-athletes mild traumatic brain injury. *Journal of Multidisciplinary Research*. 2018; 9(3):17-31.
  - Hess CW**, Gnacinski SL, Meyer BB. A review of the sport injury and rehabilitation literature: From abstraction to application. *The Sport Psychologist*. 2019; 33:232-243. doi: 10.1123/tsp.2018-0043.
  - Hess CW**, Meyer BB. [Lived Experiences of an Elite Performance Management Team Through Injury Rehabilitation: An Interpretative Phenomenological Analysis](#). *J Sport Rehabil*. 2022 Feb 1;31(2):199-210. doi: 10.1123/jsr.2021-0072. Epub 2021 Nov 15. PubMed PMID: 34784584.
  - Hess CW**, Rosen MA, Simons LE. [Looking inward to improve pediatric chronic pain outcomes: a call for team science research](#). *Pain*. 2023 Apr 1;164(4):690-697. doi: 10.1097/j.pain.0000000000002836. Epub 2022 Nov 30. PubMed PMID: 36637136.
- Evaluating the implementation of evidence into clinical practice and intervention delivery.** Despite the development of high quality and effective interventions in healthcare, implementation of those interventions has historically been understudied resulting in variability in care that has been identified as an important gap in understanding suboptimal health outcomes. Additionally, variability in the application of policy and practice has been linked to systematic disparities in care, thereby consistently disadvantaging

specific populations. In my research, I have adopted a translational lens to understand how evidence-based interventions and policy are practiced in clinical care. I have examined the translation of evidence-based practice and policy into clinical care in several areas of healthcare. I partnered with public health policy and school nurses to examine the implementation of concussion management policies in schools [c,d], which illuminated gaps between established guidelines for management of concussion, and the day-to-day practices on the ground. This work also highlighted systematic disparities in the application of concussion policies, highlighting the importance of taking a disparities lens when examining policy translation in concussion. I have also examined the integration of evidence-based care into clinical practice guidelines for depression [a], which highlighted the absence of physical-activity based recommendations for managing mild-moderate depression, despite evidence of its effectiveness in the literature. Recently I have worked to support the implementation of virtual reality technology into clinical care, examining the barriers and facilitators to implementation given established benefits of virtual reality and yet to be examined feasibility to implementation into clinical care [d].

- a. **Hess CW**, Karter J, Cosgrove L, Hayden L. [Evidence-based practice: a comparison of International Clinical Practice Guidelines and current research on physical activity for mild to moderate depression](#). *Transl Behav Med*. 2019 Jul 16;9(4):703-710. doi: 10.1093/tbm/iby092. PubMed PMID: 30321410.
- b. Campbell J, Howland J, **Hess C**, Nelson K, Stern RA, Torres A, Olshaker J. [Disparities in baseline neurocognitive testing for student concussion management in Massachusetts high schools](#). *BMJ Open Sport Exerc Med*. 2020;6(1):e000752. doi: 10.1136/bmjsem-2020-000752. eCollection 2020. PubMed PMID: 32537243; PubMed Central PMCID: PMC7264696.
- c. **Hess CW**, Howland J, Hackman H, Campbell JK, Vannoy S, Hayden L. [Implementation of Concussion Management Policies in High Schools: The Critical Role of School Nurses](#). *J Sch Nurs*. 2023 Mar 14;;10598405231160249. doi: 10.1177/10598405231160249. [Epub ahead of print] PubMed PMID: 36916285.
- d. Simons LE, **Hess CW**, Choate ES, Van Orden AR, Tremblay-McGaw AG, Menendez M, Boothroyd DB, Parvathinathan G, Griffin A, Caruso TJ, Stinson J, Weisman A, Liu T, Koeppen K. [Virtual Reality-Augmented Physiotherapy for Chronic Pain in Youth: Protocol for a Randomized Controlled Trial Enhanced With a Single-Case Experimental Design](#). *JMIR Res Protoc*. 2022 Dec 12;11(12):e40705. doi: 10.2196/40705. PubMed PMID: 36508251; PubMed Central PMCID: PMC9793297.

3. **Partnering with and centering patient and stakeholder voices to assess and improve clinical uptake of evidence-based interventions.** Clinical uptake of established interventions and development of effective, context relevant interventions, relies on engagement from and with end-users, to optimize intervention effectiveness and ensure the utility and importance of the intervention by those it intends to support. Often, development of interventions does not include key stakeholders who need to use or implement the intervention. Across my research training I have consistently engaged in research that amplifies stakeholder voices in the process of intervention design, development, and refinement. This has included collaborating with diverse youth to develop and refine a physical activity-based intervention for socioemotional development to ensure the physical activity was relevant and engaging to youth, resulting in a shift from sport-based play to an art-based physical movement intervention [a]. I have also collaborated with primary care physicians, neuroscientists, and aging adults to evaluate the utility of a self-report and self-administered objective assessment of cognitive functioning including implementation of the tool into primary care [b]. Finally, in the context of pain I have collaborated with youth and their caregivers to inform the refinement of an established graded exposure treatment intervention [b] and have continued to center patient and caregiver voices in the Journey in Pain Care study, as well as through my engagement in the BETTER panel, a patient partner panel in the Biobehavioral Pediatric Pain Lab, where I have ongoing meetings to with youth and caregivers to inform the development of my program of research.

- a. Levy I, **Hess CW**, Elber A, Hayden L. Hip hop as dance therapy: A community-based framework towards decolonizing counseling spaces. *Journal of Creativity in Mental Health*. 2020; 16(2):212-230. doi: 10.1080/15401383.2020.1762816.
- b. **Hess C**, Levy B, Hashmi AZ, Hogan J, Greenspan S, Elber A, Falcon K, Driscoll DF. [Subjective Versus Objective Assessment of Cognitive Functioning in Primary Care](#). *J Am Board Fam*

Med. 2020 May-Jun;33(3):417-425. doi: 10.3122/jabfm.2020.03.190265. PubMed PMID: 32430373.

- c. Schemer L, **Hess CW**, Van Orden AR, Birnie KA, Harrison LE, Glombiewski JA, Simons LE. [Enhancing Exposure Treatment for Youths With Chronic Pain: Co-design and Qualitative Approach](#). J Particip Med. 2023 Mar 9;15:e41292. doi: 10.2196/41292. PubMed PMID: 36892929; PubMed Central PMCID: PMC10037174.

4. **Development of context relevant assessment tools for improving targeted interventions.** The implementation of interventions should be based on evidence-based assessments. Moreover, assessments should be tailored to meet the population and context of interest. Across my training, I have supported the development, evaluation, and implementation of assessment tools to improve identification of treatment targets. My research in this area has spanned a variety of populations and treatment targets. In my earlier research, I focused on assessing the use of psychology skills across diverse performance domains including understanding the skills needed to optimize performance in firefighting [a] and how to assess readiness to engage in psychological skills training among elite athletes [b]. I have also supported the development and evaluation of novel assessment tools in the context of pediatric chronic pain. In collaboration with physiotherapists and neuroscientists, we evaluated the implementation and utility of the Concept of Pain tool, an assessment aimed at identifying patient and caregiver knowledge as it relates to pain neuroscience in order to identify educational targets [d]. I am currently collaborating with interdisciplinary team of researchers to execute a grant funded international multi-site study aimed at validating the painDETECT, a screening for Complex Regional Pain Syndrome and Neuropathic pain in support of early detection and improved targeted treatment.

- a. Gnacinski SL, Meyer BB, **Hess CW**, Cornell DJ, Mims J, Zamzow A, Ebersole KT. The psychology of firefighting: An examination of psychological skills use among firefighters. Journal of Performance Psychology. 2016; 47:812. doi: 10.1249/01.mss.0000478954.25339.e6.
- b. Gnacinski SL, Massey WV, **Hess CW**, Nai M, Arvinen-Barrow M, Meyer BB. Examining stage of change differences in NCAA student-athletes' readiness for psychological skills training. The Sport Psychologist. 2017; 31:356-368.
- c. Pate JW, Harrison LE, **Hess CW**, Moseley GL, Rush G, Heathcote LC, Simons LE. [Targeting Pain Science Education in Youth With Chronic Pain: What Are the Sticking Points for Youth and Their Parents?](#). Clin J Pain. 2023 Feb 1;39(2):60-67. doi: 10.1097/AJP.0000000000001088. PubMed PMID: 36453624.
- d. **Hess CW**, Van Orden AR, Mesaroli G, Jennifer S, Borsook D, Simons LE. Application of PainDETECT in pediatric chronic pain: How well does it identify neuropathic pain and its characteristics?. Pain reports. Forthcoming.

**Complete List of Published Work in MyBibliography:**

<https://www.ncbi.nlm.nih.gov/myncbi/courtney.hess.1/bibliography/public/>