

(Updated June 2024)

Katie Ann Butera, PT, DPT, PhD
CURRICULUM VITAE

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EDUCATION

Doctor of Philosophy

***Rehabilitation Science; Neuromuscular Plasticity
Concentration***

University of Florida, Gainesville, FL
Department of Physical Therapy
Conferred May 2020

*Dissertation—Low back pain as a nervous system disease:
validation of sensory, psychological, and motor processing
subgroups*

Doctor of Physical Therapy

University of Florida, Gainesville, FL
Department of Physical Therapy
Conferred May 2011

Bachelor of Science

Physiology; Chemistry Minor

Southern Illinois University, Carbondale, IL
Conferred May 2008

Bachelor of Arts

Psychology

Southern Illinois University, Carbondale, IL
Conferred May 2008

PROFESSIONAL EXPERIENCE

***Assistant Professor
(tenure-track)***

University of Delaware, Newark, DE
College of Health Sciences
Department of Physical Therapy (primary appointment)
Biomechanics and Movement Science Interdisciplinary
Program (secondary appointment)
August 2022-Present

Post-Doctoral Fellow

University of Colorado, Aurora, CO
School of Medicine; Physical Therapy Program
June 2020-August 2022

Pre-Doctoral Fellow

T-32 Neuromuscular Plasticity Training Program
University of Florida, Gainesville, FL
Department of Physical Therapy
January 2018-May 2020

Physical Therapist

UF Health Shands Rehab Hospital, Gainesville, FL
August 2014-May 2020 (PRN)
September 2012-August 2014 (Full-time)

Graduate Research Assistant University of Florida, Gainesville, FL
 Department of Physical Therapy
 August 2014-December 2017

Research Physical Therapist Malcom Randall VA Medical Center, Gainesville, FL
 Brain Rehabilitation and Research Center
 August 2014-May 2018

Research Physical Therapist University of Florida, Gainesville, FL
 Department of Physical Therapy
 February 2014-August 2014

Physical Therapist Tampa General Hospital, Tampa, FL
 August 2011-September 2012

Undergraduate Research Assistant Southern Illinois University, Carbondale, IL
 School of Medicine
 July 2007-May 2008

Undergraduate Lab Assistant Southern Illinois University, Carbondale, IL
 School of Medicine
 August 2006-July 2007

LICENSURE INFORMATION

2023-Present Physical Therapist; Delaware; License #: J1-0014798
 2011-Present Physical Therapist; Florida; License #: PT26553
 2020-2022 Physical Therapist; Colorado; License #: PTL.0017412

RESEARCH SUPPORT AND TRAINING AWARDS

Current Support and Awards

P20 GM103446 PI: Katie Butera 05/24-04/25
 NIH/NIGMS/State of Delaware
 Delaware IDeA Network of Biomedical Research Excellence (DE-INBRE) Pilot Project Award
Neurological-based low back pain subgrouping to advance a personalized care pathway for optimizing patient outcomes

The purpose of this pilot project is to evaluate changes in pain-related neurological responses, as well as their contributions to clinical outcomes. Data from this pilot project will inform a future funding proposal to conduct a large-scale low back pain cohort study that will successfully advance rehabilitation care for individuals with low back pain.

NIH Loan Repayment Program Renewal Award PI: Katie Butera 08/23-07/25
 NIH/NCCIH
Nervous system-driven low back pain subgrouping to enhance treatment and outcomes prediction

The purpose of this study is to determine whether, among adults with LBP, distinct subgroups can be derived from a combination of factors across sensory, psychological, and motor domains and are associated with differential clinical outcomes at 6-months follow-up.

P.E.O. Scholar Award 06/18-05/19
 International Chapter of the P.E.O. Sisterhood
 Financial support awarded to women pursuing doctoral training and conducting research that will make significant contributions in their varied fields of endeavor.
Role: Awardee (Competitive application)

Promotion of Doctoral Studies II Scholarship 09/17-08/18
 Foundation for Physical Therapy Research, Neurology Section Endowment Fund
Pain as a Nervous System Disease
 The overall objective of this study is to identify and validate low back pain subgroups using objective measures of walking, pain-related disability, and movement-evoked pain.
Role: Awardee (Competitive application)

Promotion of Doctoral Studies I Scholarship 09/16-08/17
 Foundation for Physical Therapy Research, Neurology Section Endowment Fund
Integrating the Study of Pain and Movement to Improve Patient Outcomes
 The goal of this project is to examine interactions between sensory, psychological, and motor processing factors and their impact on walking function in individuals with low back pain.
Role: Awardee (Competitive application)

Undergraduate REACH Award 07/07-05/08
 Southern Illinois University Office of Research Development
Cooperation Development in Young Twins
 The goal of this project is to develop a testing protocol to identify and examine cooperative behaviors in young twins.
Role: Awardee (Competitive application)

PROFESSIONAL/RESEARCH/ACADEMIC AWARDS AND RECOGNITIONS

2024 *PURPOSE Annual Meeting Travel Award, NIH HEAL Initiative PURPOSE Network*

2023 *Dorothy Briggs Memorial Scientific Inquiry Award, American Physical Therapy Association*

2023 *PURPOSE Annual Meeting Travel Award, NIH HEAL Initiative PURPOSE Network*

2021 *Rehabilitation Science Outstanding Manuscript Award, Dept. of Physical Therapy, University of Florida*

2020 *Financial Aid/Travel Award, International Association for the Study of Pain*

2020 *Student Travel Award, Biomechanics SIG, Academy of Physical Therapy Research, American Physical Therapy Association*

2019 *Frederick Family Scholarship Award, Dept. of Physical Therapy, University of Florida*

2019 *Graduate Student Council Travel Grant, Graduate Student Council, University of Florida*

2019 *Best Graduate Student Poster, Neuromuscular Plasticity Symposium, University of Florida*

2019 *Rehabilitation Science Student Travel Award, Dept. of Physical Therapy, University of Florida*

- 2019 *Young Investigator Travel Award*, American Pain Society
- 2017 *Outstanding Platform Presentation* (co-author), Academy of Acute Care Physical Therapy, American Physical Therapy Association
- 2017 *Rehabilitation Science Student Travel Award*, Dept. of Physical Therapy, University of Florida
- 2016 *North American Pain School Trainee* (inaugural class), ACTION & International Association for the Study of Pain
- 2016 *Rehabilitation Science Student Travel Award*, Dept. of Physical Therapy, University of Florida
- 2015 *Student Travel Award*, Section on Research, American Physical Therapy Association
- 2014-2016 *Dean's Office Scholarship*, College of Public Health and Health Professions, University of Florida
- 2008 *25 Most Distinguished Seniors*, Southern Illinois University
- 2008 *Tommy Yau Outstanding Senior in Physiology*, Dept. of Physiology, Southern Illinois University
- 2008 *James H. McHose Seniors Award*, Dept. of Psychology, Southern Illinois University
- 2008 *People's Choice Award* (Poster Presentation), Undergraduate Research Forum, Southern Illinois University
- 2007 *Outstanding Undergraduate Poster*, Science Day, Southern Illinois University
- 2006 *Tommy Yau Outstanding Junior in Physiology*, Dept. of Physiology, Southern Illinois University
- 2004-2005 *Provost Scholarship*, Southern Illinois University

RESEARCH & CLINICAL MENTORSHIP

Doctoral (PhD) Chair/Primary Advisor

Annie Zarama, MS (2024-Present); PhD in Biomechanics & Movement Science, U of Delaware

Doctoral (PhD) Dissertation Committee Member

Julien Mihy (2022-Present); PhD in Biomechanics & Movement Science, U of Delaware

Samantha Stauffer (2023-Present); PhD in Biomechanics & Movement Science, U of Delaware

Doctoral (PhD) Comprehensive Exam Committee Member

Andy Smith (2022); PhD in Biomechanics & Movement Science, U of Delaware

Undergraduate Mentees

Taryn Fields (2024-Present); U of Delaware; ADaPT Summer Scholar (2024)

Isabelle Botto (2023-Present); U of Delaware; Peter White Fellow (2024)

Carissa Kiessling (2023); U of Delaware

Clinical Doctorate (DPT) Mentorship

Clinical Instructor (2013-2014), UF Health Shands Rehab Hospital, Gainesville, FL

***Underline in subsequent sections indicates research trainee/mentee**

PEER-REVIEWED PUBLICATIONS

<https://www.ncbi.nlm.nih.gov/myncbi/katie.butera.1/bibliography/public/>

1. Johnson AJ, Booker SQ, **Butera KA**, Chimenti RL, Merriwether EN, Knox PJ, Woznowski-Vu A, Simon CB. Commentary to ‘Movement-evoked pain is not associated with pain at rest or physical function in knee osteoarthritis.’ *Eur J Pain*. 2024. [In Press]
2. **Butera KA**, Chimenti RL, Alsouhibani AM, Berardi G, Booker SQ, Knox PJ, Post AA, Merriwether EN, Wilson AT, Simon CB. Through the lens of movement-evoked pain: a theoretical framework of the “Pain-Movement Interface” to guide research and clinical care for musculoskeletal pain conditions. *J Pain*. 2024. [In Press]
3. **Butera KA**, Gustavson AM, Forster JE, Malone D, Stevens-Lapsley JE. Admission cognitive and physical function status predict change in older adults’ physical function during a skilled nursing facility rehabilitation stay. *J Am Med Dir Assoc*. 2024;25(1):17-23.
4. **Butera KA**, Beisheim-Ryan EH (co-first author), Hinrichs LA, Derlein DL, Malone DJ, Holtrop JS, Forster JE, Diedrich D, Gustavson A, Stevens-Lapsley JE. Advancing rehabilitation paradigms for older adults in skilled nursing facilities: a hybrid-I pragmatic clinical trial protocol. *Phys Ther*. 2023;103(9):1-11.
5. Stevens-Lapsley JE, Derlein D, Churchill L, Falvey JR, Nordon-Craft A, Sullivan WJ, Forster JE, Stutzbach JA, **Butera KA**, Burke RE, Mangione KK. High-intensity home health physical therapy among older adult Veterans: A randomized controlled trial. *J Am Geriatr Soc*. 2023;71(9):2855-2864.
6. **Butera KA**, Fox EJ, Bishop MD, Coombes SA, Beneciuk JM, George SZ. Low risk for persistent low back pain-related disability characterized by lower pressure pain sensitivity and higher physical performance. *Phys Ther*. 2022;102:1-9.
7. Clark DJ, Rose DK, **Butera KA**, Hoisington B, DeMark L, Chatterjee SA, Hawkins KA, Otzel DM, Skinner JW, Christou EA, Wu SS, Fox EJ. Rehabilitation with accurate adaptability walking tasks or steady state walking: a randomized clinical trial in adults post-stroke. *Clin Rehabil*. 2021; 35(8):1196-1206.
8. **Butera KA**, Fox EJ, Bishop MD, Coombes SA, George SZ. Empirically derived back pain subgroups differentiated walking performance, pain, and disability. *Pain*. 2021;162(6):1806-1815.
9. **Butera KA**, Bishop MD, Greenfield III WH, Staud R, Wallace MR, Borsa PA, Fillingim RB, George SZ. Sensory and psychological factors predict exercise-induced shoulder injury responses in a high-risk phenotype cohort. *J Pain*. 2021;22(6):669-679.
10. **Butera KA**, George SZ, Lentz T. Psychometric evaluation of the Optimal Screening for Prediction of Referral and Outcome Yellow Flag (OSPRO-YF) tool: factor structure, reliability, and validity. *J Pain*. 2020;21(5-6):557-569.
11. Zeppieri K, **Butera KA**, Iams D, Parvataneni H, George SZ. The Role of Social Support and Psychological Distress in Predicting Discharge: A Pilot Study for Hip and Knee Arthroplasty Patients. *J Arthroplasty*. 2019;34(11):2555-2560.
12. Chatterjee SA, Fox EJ, Wu SS, Daly JJ, Rose DK, Christou EA, Hawkins KA, Otzel DM, **Butera KA**, Skinner JW, Clark DJ (2019). Interpreting prefrontal recruitment during walking after stroke: influence of individual differences in mobility and cognitive function. *Front Hum Neurosci*. 2019;13:194.

13. **Butera KA**, Roff SR, Buford TW, Cruz-Almeida Y. The impact of multisite pain on functional outcomes in older adults: biopsychosocial considerations. *J Pain Res.* 2019;12:1115-1125.
14. Chatterjee SA, Daly JJ, Porges EC, Fox EJ, Rose DK, McGuirk TE, Otzel DM, **Butera KA**, and Clark DJ. Mobility function and recovery after stroke: preliminary insights from sympathetic nervous system activity. *J Neurol Phys Ther.* 2018;42(4):224-232.
15. Hawkins KA, Fox EJ, Daly JJ, Rose DK, Christou EA, McGuirk TE, Otzel DM, **Butera KA**, Chatterjee SA, Clark DJ. Prefrontal over-activation during walking in people with mobility deficits: interpretation and functional implications. *Hum Mov Sci.* 2018;59:46-55.
16. **Butera KA**, George SZ, Borsa PA, Dover GC. Prolonged reduction in shoulder strength after transcutaneous electrical nerve stimulation treatment of exercise-induced acute muscle pain. *Pain Pract.* 2018;18(8):954-968.
17. Fox EJ, Tester NJ, **Butera KA**, Howland DR, Spiess M, Castro-Chapman P, Behrman AL. Retraining walking adaptability following incomplete spinal cord injury. *Spinal Cord Ser Cases.* 2017;3(1): 17091.
18. **Butera KA**, Fox EJ, George SZ. Point of View: Towards a transformed understanding: from pain and movement to pain *with* movement. *Phys Ther.* 2016;96(10):1503-1507.
19. **Butera KA**, Lentz TA, Beneciuk JM, George SZ. Preliminary evaluation of a modified STarT Back Screening Tool across different musculoskeletal pain conditions. *Phys Ther.* 2016;96(8):1251-1261.

PUBLISHED BOOK CHAPTERS

George SZ, **Butera KA**. Low Back Pain. In: Sluka KA, ed. *Mechanisms and Management of Pain for the Physical Therapist*. 2nd ed. Seattle, WA: International Association for the Study of Pain Press; 2016:335-349.

SCIENTIFIC PRESENTATIONS

Peer-Reviewed Abstracts: National/International

1. Smith AK, **Butera KA**, Grävare Silbernagel K. Movement Evoked Pain During Hopping Is a Unique Measure of Pain for Midportion Achilles Tendinopathy. International Association for the Study of Pain 2024 World Congress on Pain. Amsterdam, Netherlands. [Accepted; to be presented August 2024]
2. Zarama A*, Hicks G, **Butera KA**. Investigating Associations Between Neurological Responses and Low Back Pain Outcomes Over Three Months, a Preliminary Study. 2024 PURPOSE Annual Meeting. Washington, DC.
3. Simon C, Merriwether E, Booker S, Chimenti RL, **Butera KA**. Movement-Evoked Pain: Addressing the Complexity and Variability Across Patients, Disciplines, and Settings. 2024 United States Association for the Study of Pain (USASP) Annual Scientific Meeting. Seattle, WA.
4. French MA, **Butera KA**, Leech KA, Miller A, Pozzi F, Schaefer S, Zellers JA. Trainee to Faculty: Navigating Life as a Junior Faculty Member in a Research-Intensive Institution. Education Session. 2024 APTA Combined Sections Meeting. Boston, MA.
5. **Butera KA**, Derlein D, Diedrich D, Braun V, Wang A, Frank J, Stevens-Lapsley J. Higher movement-evoked pain is associated with slower walking speed in older adults undergoing

- skilled nursing facility rehabilitation. Poster Presentation. 2023 United States Association for the Study of Pain (USASP) Annual Scientific Meeting. Durham, NC.
6. Chimenti RL, **Butera KA**, Woznowski-Vu A, Hicks GE, George SZ. Movement-Evoked Pain: What Is It, How Do We Evaluate, and When to Target with Treatment? Education Session. 2023 APTA Combined Sections Meeting. San Diego, CA.
 7. Bechard L, Pontillo M, Gorczynski S, **Butera K**, Williams L, Farrokhi S. Relationship between resting, recall, and movement-evoked pain and self-reported function in patients with knee pain. Oral Presentation. 2023 APTA Combined Sections Meeting. San Diego, CA.
 8. Beisheim-Ryan EH, Hinrichs LA, **Butera KA**, Derlein DL, Malone DJ, Stevens-Lapsley JE. Clinician-reported feasibility, acceptability, and adoption of high-intensity rehabilitation in skilled nursing facilities. Oral Presentation. 2023 APTA Combined Sections Meeting. San Diego, CA.
 9. Hinrichs LA, Beisheim-Ryan EH, **Butera KA**, Derlein DL, Malone DJ, Nearing KA, Stevens-Lapsley JE. Blending learning and implementation science to create, evaluate, and optimize continuing education in rehabilitation. 2023 APTA Combined Sections Meeting. San Diego, CA.
 10. **Butera KA**, Fox EJ, Bishop MD, Coombes SA, George SZ. Characterizing movement-evoked pain responses to functional tasks in a sample of adults with low back pain. Oral Presentation. Pain, Mind and Movement Satellite/Pre-Conference Meeting for the International Association for the Study of Pain 2022 World Congress on Pain. Toronto, Canada.
 11. **Butera KA**, George SZ, Patel J, Bishop MD, Coombes SA, Fox EJ. Chronic low back pain is associated with altered walking performance and reduced walking capacity. Poster Presentation. International Association for the Study of Pain 2022 World Congress on Pain. Toronto, Canada.
 12. **Butera KA**, Fox EJ, Bishop MD, Coombes SA, George SZ. Characterizing movement-evoked pain in a sample of community-dwelling adults with low back pain. Poster Presentation. International Association for the Study of Pain 2022 World Congress on Pain. Toronto, Canada.
 13. Beisheim-Ryan EH, Hinrichs LA, **Butera KA**, Derlein DL, Malone DJ, Holtrop JS, Forster JE, Diedrich D, Stevens-Lapsley JE. Improving functional outcomes in skilled nursing facilities nationwide: a hybrid I effectiveness-implementation pragmatic clinical trial approach. Oral Presentation. Medical Rehabilitation Research Resource Network 2022 Annual Scientific Retreat. Virtual Conference.
 14. **Butera KA**, Derlein D, Diedrich D, Braun V, Wang A, Frank J, Stevens-Lapsley JE. Identifying multifactorial older adult patient subgroups and associations with post-hospitalization rehabilitation outcomes. Poster Presentation. Translational Science 2022. Chicago, IL.
 15. **Butera KA**, Gustavson AM, Forster JE, Malone D, Stevens-Lapsley JE. Predictors of change in older adults' physical function following a skilled nursing facility rehabilitation stay. Oral Presentation. 2022 American Physical Therapy Association Combined Sections Meeting. San Antonio, TX.
 16. **Butera KA**, George SZ, Patel J, Bishop MD, Coombes SA, Fox EJ. Altered walking performance is associated with higher perceived low back pain intensity and disability. Oral Presentation. 2022 American Physical Therapy Association Combined Sections Meeting. San Antonio, TX.

17. **Butera KA**, Fox EJ, Freeborn P, Patel J, Bishop MD, Coombes SA, George SZ. Low Back Pain Subgroups Classified by Psycho-sensorimotor Factors Demonstrate Differences in Walking Function, Pain, and Disability. Poster Presentation. 2021 World Congress on Pain. International Association for the Study of Pain. Virtual Meeting.
18. **Butera KA**, Fox EJ, Bishop MD, Coombes SA, Beneciuk JM, George SZ. Lower pain sensitivity and higher physical performance contribute to low risk Start Back Tool classification. Oral Presentation. 2021 American Physical Therapy Association Combined Sections Meeting. Virtual Meeting.
19. Rauzi MR, Seidler KJ, Hare K, **Butera KA**, Stevens-Lapsley JE. Stakeholder Engagement to Inform a Telehealth Program Bridging Rehabilitation and Community Exercise for Veterans. Poster Presentation. 2021 American Physical Therapy Association Combined Sections Meeting. Virtual Meeting.
20. **Butera KA**, George SZ, Freeborn P, Patel J, Bishop MD, Coombes SA, Fox EJ. Low back pain-related walking impairments are associated with pain sensitivity, movement-evoked pain, and psychological factors. Oral Presentation. 2020 American Physical Therapy Association Combined Sections Meeting. Denver, CO.
21. Patel JH, **Butera KA**, Vistamehr A, Freeborn P, Fox EJ. Correlations between clinical pain measures and lower extremity kinematics among individuals with low back pain. Poster Presentation. 2020 Meeting of the American Society of Biomechanics. Virtual Meeting.
22. **Butera KA**, George SZ, Freeborn P, Bishop MD, Coombes SA, Fox EJ. Pain-related sensory and psychological factors may contribute to walking impairment in adults with low back pain. Oral Presentation. 2019 Pain Science in Motion III. Savona, Italy.
23. **Butera KA**, George SZ, Lentz T. Psychometric assessment of the Optimal Screening for Prediction of Referral and Outcomes Yellow Flag (OSPRO-YF) tool: item number and factor structure. Poster Presentation. 2019 American Pain Society Annual Scientific Meeting. Milwaukee, WI.
24. Na A, **Butera KA**, Simon C, Lundberg M. Pain with Movement: Transforming Theoretical Models to Physical Therapy Practice. Educational Session. 2019 APTA Combined Sections Meeting, Washington DC.
25. Chatterjee SA, Fox EJ, Rose DK, Daly J, Christou E, Hawkins KA, McGuirk T, **Butera KA**, Otzel DM, Skinner J, Clark DJ. Prefrontal activity during walking post-stroke: insights from the CRUNCH framework. Oral Presentation. 2019 APTA Combined Sections Meeting. Washington DC.
26. **Butera KA**. Identification and initial validation of low back pain nervous system processing subgroups using performance-based measures. Oral Presentation. Pain, Mind and Movement Satellite/Pre-Conference Meeting for the IASP 2018 World Congress on Pain. Boston, MA.
27. **Butera KA**. Sensory and psychological factors contributing to motor outcomes for high-risk healthy individuals experiencing exercise-induced muscle injury. Oral Presentation. Pain, Mind and Movement Satellite/Pre-Conference Meeting for the International Association for the Study of Pain 2018 World Congress on Pain. Boston, MA.
28. **Butera KA**, Bishop MD, Fox EJ, Coombes SA, Fillingim RB, George SZ. Sensory and psychological factors contributing to motor outcomes for high-risk healthy individuals experiencing exercise-induced muscle injury. Poster Presentation. IASP 2018 World Congress on Pain. Boston, MA.

29. Chatterjee SA, Albert CM, Fox EJ, Daly JJ, Rose DK, Christou EA, Hawkins KA, Otzel DM, **Butera KA**, Clark DJ. Increased prefrontal cortical activation during typical walking is associated with greater dual-task costs after stroke: an fNIRS study. Poster Presentation. 2018 APTA Combined Sections Meeting. New Orleans LA.
30. **Butera KA**, George SZ, Borsa PA, Dover GC. Prolonged reduction in shoulder strength after transcutaneous electrical nerve stimulation treatment of exercise-induced acute muscle pain. Oral Presentation. 2017 APTA Combined Sections Meeting. San Antonio, TX.
31. Zeppieri K, **Butera KA**, Parvataneni H, Iams D, George SZ. Predictive tools in inpatient disposition outcomes: a pilot study for hip and knee arthroplasty patients. Oral Presentation. 2017 APTA Combined Sections Meeting. San Antonio, TX.
32. Chatterjee SA, Rose DK, Porges EC, Fox EJ, Daly JJ, Christou EA, Otzel DM, **Butera KA**, Clark DJ. Quantifying the perceived challenge of walking after stroke by measuring sympathetic activation: a pilot study. Poster Presentation. 2017 APTA Combined Sections Meeting. San Antonio, TX.
33. Hawkins KA, Fox EJ, Daly JJ, Rose DK, Christou EA, Nadeau SE, Otzel DM, **Butera KA**, Chatterjee SA, Rajaravivarma R, Ring SA, Emery H, Clark DJ. Thinking about walking: functional neuroimaging demonstrates increased demand for executive control of walking in adults with mobility deficits. Oral Presentation. 2017 APTA Combined Sections Meeting. San Antonio, TX.
34. Hawkins KA, Fox EJ, Daly JJ, Rose DK, Christou EA, Otzel DM, **Butera KA**, Chatterjee SA, Clark DJ. Quantifying the executive demand of walking with fNIRS neuroimaging. Oral Presentation. 2017 World Congress of International Society of Posture and Gait Research. Fort Lauderdale, FL.
35. **Butera KA**, Lentz TL, Beneciuk JB, George SZ. Use of a modified STarT Back Screening Tool across different anatomical regions of musculoskeletal pain. Oral Presentation. 2016 APTA Combined Sections Meeting, Anaheim, CA.
36. Hawkins KA, Fox EJ, Daly JJ, Rose DK, Christou EA, Nadeau SE, Otzel DM, **Butera KA**, Chatterjee SA, Rajaravivarma R, Ring SA, Emery H, Clark DJ. Executive control of walking in adults with mobility deficits quantified by fNIRS neuroimaging. Poster Presentation. Society for Neuroscience 2016. San Diego, CA.
37. Sutor TW, Tester NJ, Fuller D, Streeter K, **Butera KA**, Fox EJ. Locomotor-respiratory coupling after incomplete spinal cord injury and the effects of locomotor rehabilitation. Poster Presentation. Society for Neuroscience 2016. San Diego, CA.
38. **Butera KA**, Fox EJ, George SZ. Studying pain with movement. Oral Presentation. 2016 North American Pain School, Montebello, Quebec, Canada.
39. **Butera KA**, Fox EJ, George SZ. Integrating nervous system pain processing and resultant motor behavior: a conceptual model. Poster Presentation. 2015 APTA Section on Research Pain Retreat, Smithfield, RI.
40. **Butera KA**, George SZ. Assessing balance in geriatric orthopedic and neurologic populations using two standard measures. Poster Presentation. 2012 APTA Combined Sections Meeting, Chicago, IL.
41. **Butera KA**, DiLalla LF. Cooperation development in young twins. Poster Presentation. 2008 Behavior Genetics Association Meeting, Louisville, KY.
42. **Butera KA**, Melby A, Bell K, Wonderlich SJ, Long S, Phillips A, DiLalla LF. The effects of siblings on twins and singletons in theory of mind tasks. Poster Presentation. 2008 Behavior Genetics Association Meeting, Louisville, KY.

Invited Presentations: National/International

1. **Butera KA**, Beisheim-Ryan EH. Invited Presentation. “Pain management strategies.” VA Geriatrics Scholars: Conference on Geriatric Physical Function, 2024, Virtual Conference.
2. **Butera KA**, Simon C. Invited lead for March 2023 Duke MSK Journal Club. Presentation and discussion of recent publication: Butera et al. Through the lens of movement-evoked pain: a theoretical framework of the “Pain-Movement Interface” to guide research and clinical care for musculoskeletal pain conditions, *J Pain*, 2024.
3. **Butera KA**. Invited Panelist. “Session four: Interventions to address joint pain and disease.” Understanding and Restoring Whole Joint Health in Pain Management: An NIH HEAL Initiative Workshop, 2023, Virtual Workshop.
4. **Butera KA**. Invited Speaker. “Integrating pain and movement science to advance clinical practice.” 2022 Program in Physical Therapy Research Seminar, Washington University School of Medicine, 2022, Virtual Seminar.
5. **Butera KA**, Beisheim-Ryan EH. Invited Presentation. “Pain management strategies.” VA Geriatrics Scholars: Conference on Geriatric Physical Function, 2022, Virtual Conference.

Peer-Reviewed Abstracts: Local/Regional

1. Zarama A*, Hicks G, **Butera KA**. Are neurological responses associated with low back pain outcomes across three months? A preliminary study. 2024 InnovatHER: Research Showcase. University of Delaware. Newark, DE.
2. Zarama A*, Hicks G, **Butera KA**. Are neurological responses associated with low back pain outcomes across three months? A preliminary study. 2024 College of Health Sciences Research Day. University of Delaware. Newark, DE.
3. Smith AK, **Butera K**, Silbernagel K. Movement Evoked Pain During Hopping Is a Clinically Meaningful Measure of Pain for Midportion Achilles Tendinopathy. 2024 College of Health Sciences Research Day. University of Delaware. Newark, DE.
4. **Butera KA**, Fox EJ, Bishop MD, Coombes SA, George SZ. Characterizing movement-evoked pain responses to functional tasks in a sample of adults with low back pain. 2023 College of Health Sciences Research Day. University of Delaware. Newark, DE.
5. Pisegna J, Hinrichs L, Beisheim-Ryan E, **Butera K**, Derlein DL, Magnusson D, Stevens-Lapsley J. High-intensity rehabilitation training priorities of occupational therapy practitioners working with older Veterans with medical complexity in rural post-acute care settings. Poster Presentation. 2023 Partnerships for Veteran & Military Health Conference-Networking to Address the Gaps in Healing. Aurora, CO.
6. **Butera KA**, George SZ, Freeborn P, Patel J, Bishop MD, Coombes SA, Fox EJ. Nervous system factor-driven subgrouping of individuals with low back pain and validation using measures of walking, pain, and disability. 2020 Neuromuscular Plasticity Symposium. University of Florida. (Symposium canceled due to COVID-19 pandemic)
7. **Butera KA**, George SZ, Freeborn P, Bishop MD, Coombes SA, Fox EJ. Pain-related sensory and psychological factors may be associated with greater walking impairments in individuals with low back pain. Poster Presentation. 2019 Annual Neuromuscular Plasticity Symposium, Gainesville, FL.
8. **Butera KA**, Fox EJ, Hatcher CC, Bishop MD, Coombes SA, George SZ. Initial validation of low back pain nervous system processing subgroups using performance measures: a protocol. Poster Presentation. 2018 University of Florida College of Public Health and Health Professions Research Day, Gainesville, FL.

9. **Butera KA**, Fox EJ, Hatcher CC, Bishop MD, Coombes SA, George SZ. Initial validation of low back pain nervous system processing subgroups using performance-based measures of walking and movement-evoked pain: a protocol. Poster Presentation. 2018 Annual Neuromuscular Plasticity Symposium, Gainesville, FL.
10. Chatterjee SA, Albert C, Fox EJ, Daly JJ, Rose DK, Christou EA, Hawkins KA, Otzel DM, **Butera KA**, Clark DJ. Increased prefrontal cortical activity during walking is associated with greater dual-task costs after stroke. Poster Presentation. 2018 University of Florida College of Medicine Celebration of Research. Gainesville, FL.
11. **Butera KA**, Greenfield III WH, Bishop MD, George SZ. Recovery of function and pain dissipation in men versus women following exercise-induced shoulder muscle injury. Poster Presentation. 2017 University of Florida College of Public Health and Health Professions Research Day, Gainesville, FL.
12. **Butera KA**, Greenfield III WH, Bishop MD, George SZ. Sex comparisons of strength, disability, and pain, following an exercise-induced shoulder muscle injury. Poster Presentation. 2017 Annual Neuromuscular Plasticity Symposium, Gainesville, FL.
13. Albert C, Fox E, Daly J, Rose D, Christou E, Hawkins K, Otzel D, **Butera KA**, Chatterjee S, Clark D. Prefrontal cortical activation during walking predicts dual-task costs after stroke. Poster Presentation. 2017 University of Florida College of Medicine Celebration of Research. Gainesville, FL.
14. **Butera KA**, George SZ, Borsa PA, Dover GC. Prolonged reduction in shoulder strength after acute pain and inhibitory TENS application. Poster Presentation. 2016 University of Florida College of Public Health and Health Professions Research Day, Gainesville, FL.
15. **Butera KA**, George SZ, Borsa PA, Dover GC. Prolonged reduction in shoulder strength after exercise-induced acute muscle pain and inhibitory TENS application. Poster Presentation. 2016 Annual Neuromuscular Plasticity Symposium, Gainesville, FL.
16. Hawkins K, Fox EJ, Daly JJ, Rose DK, Christou EA, Nadeau SE, Otzel DM, **Butera KA**, Chatterjee SA, Rajaravivarma R, Ring SA, Emery H, Clark DJ. Functional neuroimaging during walking quantifies demand for executive locomotor control. Poster Presentation. 2016 Neuromuscular Plasticity Symposium, Gainesville, FL.
17. Sutor TW, Tester NJ, Fuller D, Streeter KA, **Butera KA**, Fox EJ. Locomotor-Respiratory Coupling After Incomplete Spinal Cord Injury in Humans. Poster Presentation. 2016 Neuromuscular Plasticity Symposium, Gainesville, FL.
18. Chatterjee SA, Daly JJ, Rose DK, Porges EC, Fox EJ, Christou EA, Otzel DM, **Butera KA** and Clark DJ. Sympathetic nervous system activity as a physiological assessment of the perceived challenge of walking after stroke. Poster Presentation. 2016 Annual Spotlight on Aging Research, University of Florida, Gainesville, FL.
19. Hawkins K, Fox EJ, Daly JJ, Rose DK, Christou EA, Nadeau S, Otzel D, **Butera KA**, Chatterjee S, and Clark DJ. Functional neuroimaging during walking quantifies demand for executive locomotor control. Poster Presentation. 2016 Annual Spotlight on Aging Research, University of Florida, Gainesville, FL.
20. **Butera KA**, Fox EJ, Nystrom DL, Garner JS, Coloso N, Tester NJ. Adaptive locomotor training intervention post spinal cord injury: a case series. Poster Presentation. 2015 University of Florida College of Public Health and Health Professions Research Day, Gainesville, FL.

21. **Butera KA**, Tester NJ, Coloso N, Fox EJ. Restoring gait adaptability in adults with incomplete spinal cord injuries: a pilot study. Poster Presentation. 2015 Annual Neuromuscular Plasticity Symposium, Gainesville, FL.
22. **Butera KA**, George SZ. Assessing balance in geriatric orthopedic and neurologic populations using two standard measures. Oral Presentation. 2011 Florida Physical Therapy Association Annual Conference, Orlando, FL.
23. **Butera KA**, DiLalla LF. Cooperation development in young twins. Poster Presentation. 2008 Southern Illinois University Undergraduate Research Forum, Carbondale, IL.
24. **Butera KA**, Phillips A, Elam K, DiLalla LF. Genetic influence on cooperation in preschoolers. Poster Presentation. 2007 Southern Illinois University Science Day Sigma Xi Poster Session, Carbondale, IL.

Invited Presentations: Local/Regional

1. **Butera KA**. Integrating pain and movement science to advance clinical practice. Oral presentation. 2023 JIN Podcasts. Junior Investigators Network, Delaware CTR & Delaware INBRE. Virtual Meeting.
2. **Butera KA**. The Impact of Sensory and Psychological Factors on Walking Function in Adults with Low Back Pain. Oral Presentation. 2019 Annual Neuromuscular Plasticity Symposium, Gainesville, FL.
3. **Butera KA**. Sensory and psychological factors may impact walking function in individuals with low back pain. Oral Presentation. 2019 Neuromuscular Plasticity Nines Seminar Series, Gainesville, FL.
4. **Butera KA**. PhD in Rehabilitation Science/Studying Pain with Movement. Oral Presentation. 2018 University of Florida College of Public Health and Health Professions Advisory Board Meeting, Gainesville, FL.
5. **Butera KA**. Preliminary investigation of muscle activation and walking performance in individuals with low back pain. Oral Presentation. 2018 Neuromuscular Plasticity Noons Seminar Series, Gainesville, FL.
6. **Butera KA**. Pain as a Nervous System Disease. Oral Presentation. 2018 Annual Neuromuscular Plasticity Symposium, Gainesville, FL.
7. **Butera KA**, George SZ, Borsa PA, Dover GC. Prolonged reduction in shoulder strength after exercise-induced acute muscle pain and inhibitory transcutaneous electrical nerve stimulation. Oral Presentation. 2016 Neuromuscular Plasticity Noons Seminar Series, University of Florida, Gainesville, FL.
8. **Butera KA**, George SZ, Borsa PA, Dover GC. Prolonged reduction in shoulder strength after exercise-induced acute muscle pain and inhibitory TENS application. Oral Presentation. 2016 Pain Research and Intervention Center of Excellence Data Blitz, Gainesville, FL.
9. **Butera KA**, Fox EJ, George SZ. The relationship between nervous system pain processing and motor behavior: a new conceptual model. Oral Presentation. 2015 Neuromuscular Plasticity Noons Seminar Series, University of Florida, Gainesville, FL.
10. **Butera KA**, Fox EJ, George SZ. Integrating nervous system pain processing and resultant motor behavior: a conceptual model. Poster Presentation. 2015 University of Florida Pain Research Day, Gainesville, FL.
11. **Butera KA**, Fox EJ, Howarth JN, Nystrom D, Garner JS, Coloso N, Tester NJ. Gait adaptability post spinal cord injury: New approaches. Poster Presentation. 2014 Annual Brooks Research Day, Brooks Rehabilitation Hospital, Jacksonville, FL.

12. **Butera KA**, George SZ. Assessing balance in geriatric orthopedic and neurologic populations using two standard measures. Oral Presentation. 2011 University of Florida College of Public Health and Health Professions Advisory Board Meeting, Gainesville, FL.

TEACHING EXPERIENCE

Course Coordinator

- 2024 PHYT 809: Psychosocial Aspects of Health and Disease; Doctor of Physical Therapy Program, University of Delaware

Course Instructor

- 2023 PHYT 805: Rehabilitation (Spinal Cord Injury Unit); Doctor of Physical Therapy Program, University of Delaware

Clinical Expert/Teaching Assistant

- 2022 PHYT 809: Psychosocial Aspects of Health and Disease; Doctor of Physical Therapy Program, University of Delaware
- 2021 PHYT 805: Rehabilitation (Spinal Cord Injury Unit); Doctor of Physical Therapy Program, University of Delaware
- 2014-2019 PHT 6761C: Neurorehabilitation I; Doctor of Physical Therapy Program, University of Florida
- 2014-2015 PHT 6605: Evidence-Based Practice I; Doctor of Physical Therapy Program, University of Florida

Guest Lecturer

- 2024 BMSC 865: Seminar; Biomechanics and Movement Science Program, University of Delaware; 1 hour lecture, Spring 2024
- 2023 BMSC 865: Seminar; Biomechanics and Movement Science Program, University of Delaware; 1 hour lecture, Spring 2023
- 2020-2021 PHT 6761C: Neurorehabilitation I; Doctor of Physical Therapy Program, University of Florida
- *Spinal Cord Injury Medical Considerations and Acute Management* (synchronous didactic lecture)
 - *Wheelchair Prescription for Patients with Spinal Cord Injury* (asynchronous online lecture)
- 2017 Physical Therapy Assistant Program; Santa Fe Community College
- *Spinal Cord Injury Medical Considerations and Acute Management* (synchronous didactic lecture and hands-on skills training)

CEU Course Instructor

- 2023-2024 *Geriatric Scholars Program*. VA Offices of Rural Health, Denver, CO (virtual)
- Co-speaker; Presentation: Special Topic in Pain; Developed content and learning objectives
- 2019 *Ameliorate or Deteriorate: Understanding the Interface between Movement-Evoked Pain and the Human Experience*; Elon University, Elon, NC
- Co-speaker; Developed content and learning objectives

- 2014 *Wheelchair Inservice Part II: a hands-on approach.* UF Health Shands Rehab Hospital, Gainesville, FL
- Co-speaker; Developed content and learning objectives
- 2013 *Wheelchair Inservice Part I: a hands-on approach.* UF Health Shands Rehab Hospital, Gainesville, FL
- Co-speaker; Developed content and learning objectives

TEACHING & MENTORING DEVELOPMENT

Certificates/Workshops/Seminars

- 2024 *Optimizing Mentorship to Ensure a Bright Future for Pain Research*
United States Association for the Study of Pain
- 4-hour mentorship workshop
 - Experiential training designed to optimize the practice of mentorship with highlights on the issues encountered in pain research mentorship
 - Didactic instruction as well as interaction, discussion, and self-reflection activities to develop tools and strategies to enhance mentorship with pain research mentees
- 2023-2026 *Adult Mental Health First Aid USA Certified*
University of Delaware; Office of Human Resources
- 2021-2022 *Teaming for Early Career Researchers*
Colorado Clinical and Translational Sciences Institute
- Self-paced online course followed by 12 hours of synchronous training
 - Formal training to build capacity for participating in and leading effective interdisciplinary and translational scientific teams
 - Acquired skills related to building team relationships, setting team expectations, building a shared language/vision, creating collaborative knowledge, change management and conflict resolution, and team leadership
- 2021-2022 *CO-Mentor Training Program*
Colorado Clinical and Translational Sciences Institute
- 4-day training workshop to build practical skills for mentoring success
 - Increasing knowledge of evidence-based strategies to create and maintain mentoring relationships
 - Developing communication strategies based on knowledge of various personalities and communication styles
 - Acquiring skills for career mapping, creating career development plans, and writing effective mentor letters
- 2021 *Transforming Your Research into Teaching*
The Center for the Integration of Research, Teaching, & Learning Network
- 7-week workshop including synchronous peer discussions and training
 - Designed a syllabus for a unique, pain-specific course
 - Developed an integrated course sequence with strong alignment across learning objectives, instructional methods, and assessment approaches
 - Acquired knowledge of effective teaching strategies and methods for improving diversity and inclusion in the classroom

Completed Doctoral-Level Coursework

- 2016 *RSD6940 Supervised Teaching*; 3 credits, University of Florida
2015 *RSD6900 College Classroom Teaching*; 3 credits, University of Florida

PROFESSIONAL/SCIENTIFIC SERVICE & LEADERSHIP

National Leadership Positions

- 2021-2024 *Nominating Committee*; Biomechanics Special Interest Group, Academy of Physical Therapy Research, American Physical Therapy Association
2021-2023 *Co-Chair*; Pain, Movement, and Rehabilitation Science Special Interest Group, United States Association for the Study of Pain

National Service

- 2023-Present *Ad-Hoc Reviewer*
 • Pain Medicine
2022-Present *Ad-Hoc Reviewer*
 • Pain
 • Journal of Manual and Manipulative Therapy
 • European Journal of Pain
2021-Present *Ad-Hoc Reviewer*
 • Journal of Pain
 • Physiotherapy Theory and Practice
2020-Present *Ad-Hoc Reviewer*
 • Experimental Brain Research
 • Physical Therapy

College of Health Science Service—University of Delaware

- Poster judge for College of Health Sciences Research Day (2023-2024)
- Member of ad-hoc working groups
 - BIOMS Seminar Working Group
- Mentor to undergraduate trainees interested in physical therapy and research
- Mentor to PhD trainees in the Biomechanics and Movement Science program

Department of Physical Therapy Service—University of Delaware

- Volunteer to participate in ad-hoc working groups
 - Lead for Pain Curriculum Working Group (Spring 2024-Present)
 - Member of Neuro Curriculum Working Group (Fall 2023-Present)
 - Member of Professionalism Curriculum Working Group (Fall 2023-Present)
 - Member of Community Building Working Group (Spring 2024-Present)
- Interview DPT candidates and provided feedback to admissions committee
- Plan and facilitate annual UDPT Community Building Workshops
- Participate in faculty panel during UDPT interview days
- Participate in tenure-track faculty interviews and provide feedback to search committee
- Advise UDPT DEI committee for workshop development
- Participate in student-led UDPT DEI committee activities
- Participate in student-led UDPT fundraising committee activities

Graduate & Undergraduate Student Leadership Positions

- 2017-2018 *Graduate Study Council Representative*; Department of Physical Therapy, University of Florida
- 2010-2011 *Student Conclave Planning Group Marketing Director*; Student Physical Therapy Association, Department of Physical Therapy, University of Florida
- 2009-2010 *Secretary*; Student Physical Therapy Association, Department of Physical Therapy, University of Florida
- 2008-2011 *Member*; Student Physical Therapy Association, University of Florida
- 2007 *Student Orientation and Registration Leader*; Southern Illinois University
- 2005 *Student Life Advisor*; Southern Illinois University
- 2004-2005 *Leadership Council*; Southern Illinois University

PROFESSIONAL MEMBERSHIPS

- 2023-Present ***NIH HEAL Initiative's PURPOSE (Positively Uniting Researchers of Pain to Opine, Synthesize, & Engage) Network***
- 2020-Present ***United States Association for the Study of Pain***
- Pain, Movement, and Rehabilitation Science Special Interest Group
 - Pain Epidemiology Special Interest Group
- 2016-Present ***International Association for the Study of Pain***
- Pain, Mind, and Movement Special Interest Group
- 2009-Present ***American Physical Therapy Association***
- Academy of Physical Therapy Research (2015-Present)
 - Academy of Neurologic Physical Therapy (2015-Present)
 - Academy of Orthopaedic Physical Therapy (2018-Present)
 - Delaware Chapter (2022-Present)
 - Colorado Chapter (2020-2022)
 - Florida Chapter (2009-2020)
- 2017-2019 ***American Pain Society***