

BAHAR SHAHIDI PT, DPT, PHD
CURRICULUM VITAE

Information:

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Education:

INSTITUTION AND LOCATION	DEGREE	YEAR CONFERRED	FIELD OF STUDY
University of California, Berkeley, CA	B.S.	2005	Chemical Biology
University of Colorado Denver, Aurora, CO	D.P.T.	2009	Physical Therapy
University of Colorado Denver, Aurora, CO	Ph.D.	2015	Rehabilitation Science (Neurophysiology)
University of California, San Diego, CA	Post-Doc	2017	Muscle Physiology

Positions and Employment

- 2003-2005 Undergraduate Research Assistant, Dept Chemistry, University of California, Berkeley
- 2008-2009 Work Study Research Assistant, Applied Neuromuscular Physiology Lab, University of Colorado Anschutz Medical Campus
- 2009-2010 Contract Physical Therapist (PRN), Inpatient Rehabilitation, Boulder Community Hospital, Boulder CO
- 2009-2011 Professional Research Assistant, Applied Neuromuscular Physiology Lab, University of Colorado Anschutz Medical Campus
- 2009-2011 Board of Directors, University of Colorado Physical Therapy Program Alumni Association
- 2009-2015 Co-chair, American Physical Therapy Association Research Committee, Colorado Chapter
- 2009-2015 Part Time Physical Therapist, Outpatient orthopedics, Anchor Physical Therapy, Broomfield CO
- 2009-2015 Graduate Teaching Assistant, University of Colorado Physical Therapy Department
- 2011-2015 Graduate Research Assistant, Applied Neuromuscular Physiology Lab, University of Colorado Denver
- 2015-2017 Post-doctoral fellow, Muscle Physiology Lab, University of California, San Diego

- 2016-2017 Visiting post-doctoral fellow, Department of Orthopedic Surgery, University of Balgrist, Zurich, Switzerland.
- 2017-2018 Lecturer, Physical Therapy Program, San Diego State University, San Diego, CA
- 2018- Orthopaedic Research Advisory Council – Member, Department of Orthopaedic Surgery, University of California San Diego, San Diego CA.
- 2018 - Assistant Professor IV. Department of Orthopaedic Surgery, University of California San Diego, San Diego CA.
- 2021 - Orthopaedic Research Space Committee – Member, Department of Orthopaedic Surgery, University of California San Diego, San Diego CA.
- Jun 2021 NIH; Neurobiology of Pain (NURP) Study Section (ad-hoc member)
- Oct 2021 DoD Congressionally Directed Medical Research Program (CDMRP); Pain Management (PM) Study Section (ad-hoc member)

Teaching:

- June 2010 Diagnosis and Treatment of Foot and Ankle Disorders: Colorado Springs, CO: Continuing education course - Clinical Laboratory Assistant
- May 2009-2014 Examination and Evaluation: University of Colorado Denver Physical Therapy Program – Laboratory Assistant
- May 2010- 2014 Surface Palpation: University of Colorado Denver Physical Therapy Program – Laboratory Assistant
- Aug 2010- 2014 Therapeutic Interventions: University of Colorado Denver Physical Therapy Program – Laboratory Assistant
- Jan 2009-2011 Evidence Based Practice for Physical Therapists: University of Colorado Denver Physical Therapy Program (transitional DPT program) - Primary instructor
- July 2010-2011 Balance and Fall prevention - Anchor Physical Therapy: Primary instructor for community integration program for seniors at risk for falls.
- June 2012 Professional Topics I; Doctoring Professions: University of Colorado Denver- Guest lecturer

Feb 2013	Sports Injury Prevention and Concussion management- what coaches need to know: Broomfield Youth Soccer Coaches Symposium; Broomfield Soccer Club- Lecturer
Feb 2013	Sports Injury Prevention and Concussion management- what athletes need to know: Broomfield Youth Soccer Parents and Athletes Educational session; Broomfield Soccer Club- Lecturer
July 2013	Histology: University of Colorado Denver Physical Therapy Program - Primary instructor
Nov 2013	Educational Methods; Foundations of Therapeutic Exercise: University of Colorado Denver - Guest lecturer
Aug 2013-2014	Patient Care Seminar I: University of Colorado Denver Physical Therapy Program - Instructor
Aug 2013-2014	Patient Care Seminar II: University of Colorado Denver Physical Therapy Program - Instructor
Aug 2014	Evidence Based Practice: University of Colorado Denver - Primary instructor
Nov 2014-2015	Patient Care Seminar III: University of Colorado Denver Physical Therapy Program - Instructor
Apr 2015-2017	Anatomy of the musculoskeletal system: University of California, San Diego, Pharmacy Program – Laboratory Assistant
Feb 2016	“Characterization of muscle fatty infiltration in chronic low back pain”: University of California San Diego Center for Musculoskeletal Research & Department of Orthopaedic Surgery – Invited Speaker
Mar 2016-2017	Neurophysiology of Pain: San Diego State University, Physical Therapy Program – Guest Lecturer
Jan-May 2017	Psychosocial Aspects of Rehabilitation: San Diego State University, Physical Therapy Program – Instructor
Sep 2017 - 2018	Musculoskeletal Orthopedics I & II, Assessment and Treatment: San Diego State University, Physical Therapy Program -Instructor
Jun 2015-	Statistics for clinicians: University of California, San Diego Orthopaedic Surgery Residency Program – Guest Lecturer
Dec 2016-	Musculoskeletal Anatomy: University of California San Diego, Medical School – Laboratory Assistant

Aug 2020-2021	Advanced Experimental Methods/Biology (BGGN 271,114): UC San Diego Dept Biology – Instructor
Aug 2019-2021	Research Discussion (BGRD 200; 174): UC San Diego Dept Biology - Instructor
Dec 2020	Chicanx/Latinx for Community Medicine/Intersectional Health Project San Diego – Panelist for healthcare careers in Occupational and Physical Therapy
May 2021	Neuromuscular Physiology and Biomechanics (BENG233): UC San Diego, Department of Bioengineering – Guest Lecturer

Professional Memberships:

2007 – present	American Physical Therapy Association member Orthopedic section member Research section member
2009 – present	Colorado Licensed Physical Therapist (active #10517)
2010 – present	International Association for the Study of Pain member
2012 - present	International Society for Electrophysiology and Kinesiology member
2013 – present	Society for Neuroscience member
2015 - present	Orthopaedic Research Society member
2018 – present	California Licensed Physical Therapist (active #295023)

Awards/Honors

Aug 2011	Foundation for Physical Therapy; Florence P. Kendall Scholarship
Feb 2012	Combined Sections Meeting of the American Physical Therapy Association Orthopaedic Section Best Poster Award Nominee
Aug 2012	Foundation for Physical Therapy; Promotion of Doctoral Studies I Scholarship
Aug 2013	Foundation for Physical Therapy; Promotion of Doctoral Studies II Scholarship
Feb 2013-2015	American Physical Therapy Association; Marilyn Gossman Graduate Research Award
June 2014	Neurobiology of Stress Workshop Travel award
June 2014	Hirs Travel Award for Graduate Students
June 2018,2021	Basic Science Research Award: UCSD Department of Orthopaedic Surgery

Sep 2020

National Center of Leadership in Academic Medicine Awardee

Mar 2021

Scoliosis Research Society: Candidate Fellowship

Peer-reviewed Publications & Manuscripts:

Full publication list can be found at:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/1TWa5rcixfvkt/bibliography/42575124/public/?sort=date&direction=ascending>

1. **Shahidi B**, Johnson C, Everett-Curran D, Maluf K. Reliability and Group Differences in Cervicothoracic Impairment Measures in Individuals With and Without Chronic Neck Pain. *BMC Musculoskeletal*, 13:215. 2012. PMID: 23114092
2. **Shahidi B**, Haight A, Maluf K. Differential Effects of Mental Concentration and Acute Psychosocial Stress on Cervical Muscle Activity and Posture. *J. Electromyogr. Kinesiol.* 23(5): 1082-9. 2013. PMID: 23800438
3. **Shahidi B**, Sannes T, Laudenslager M, Maluf KS. Cardiovascular responses to acute psychosocial stressor are associated with the cortisol awakening response in individuals with chronic neck pain. *Physiol Behav.* 150:93-8. 2015. PMID: 25662023
4. **Shahidi B**, Everett-Curran D, Maluf K. Psychological, Physical, and Neurophysiological Risk Factors for Development of Chronic Neck Pain: A Prospective Inception Cohort Study. *J Pain.* 16(12):1288-1299. 2015. PMID: 26400680
5. **Shahidi B**, Parra C, Berry D, Hubbard JC, Gombatto S, Zomislic V, Allen RT, Hughes-Austin J, Garfin SR, Ward SR. Contribution of lumbar spine pathology and age to paraspinal muscle size and fatty infiltration. *Spine.* 42(8): 616-623. 2017. PMID: 27517512
6. Berry DB, Rodriguez-Soto A, Su J, Gombatto SP, **Shahidi B**, Palombo L, Chung C, Jensen A, Kelly KR, Ward SR. Lumbar Spine Postures in Marines During Simulated Operational Positions. *JOR.* 35(10): 2145-2153. 2017. PMID: 28052435
7. **Shahidi B**, Maluf KS. Adaptations in evoked pain sensitivity and conditioned pain modulation after development of chronic neck pain. *BioMed Res Int.* 2017. PMID: 28484718
8. **Shahidi B**, Hubbard JC, Gibbons MC, Ruoss S, Zlomislic V, Allen RT, Garfin SR, Ward SR. Lumbar multifidus muscle degenerates in individuals with chronic degenerative lumbar spine pathology. *JOR.* 2017. PMID: 28480978
9. **Shahidi B**, Esparza M, Shah S, Head B, Ward SR. Skeletal muscle atrophy and degeneration in a mouse model of traumatic brain injury. *J Neurotrauma.* 2017. PMID: 28895461

10. Berry DB, Padwal J, Johnson SJ, Parra CL, Ward SR, **Shahidi B**. Methodological considerations in region of interest definitions for paraspinal muscles in axial MRIs of the lumbar spine. *BMC Musculoskeletal Disorders*. 2018. PMID: 29734942
11. Berry, DB, **Shahidi B**, Rodriguez-Soto AE, Hughes-Austin J, Kelly KR, Ward SR. Lumbar Muscle Structure Predicts Operational Postures in Active Duty Marines. *JOSPT*. 2018. PMID: 29772956
12. **Shahidi B**, Ward SR. Selective fatty replacement of paraspinal muscles in facioscapulohumeral muscular dystrophy. *JOSPT*. 2019. PMID:31151375
13. Berry DB, Padwal J, Johnson S, Englund EK, Ward SR, **Shahidi B**. The effect of high-intensity resistance exercise on lumbar musculature in patients with low back pain. *BMC Musculoskeletal disorders*. 2019. PMID: 31208400
14. Onodera K, Berry DB, **Shahidi B**, Kelly KR, Ward SR. Intervertebral disc kinematics in active-duty marines with and without lumbar spine pathology. *JOR-Spine*. 2019. PMID: 31463467
15. **Shahidi B**, Fisch KM, Gibbons MC, Ward SR. Increased fibrogenic gene expression in multifidus muscles of patients with chronic versus acute lumbar spine pathology. *Spine*. 2019. PMID: 31513095
16. **Shahidi B**, Gibbons MC, Esparza MC, Zlomislic V, Allen RT, Garfin SR, Ward SR. Cell populations and muscle fiber morphology associated with acute and chronic muscle degeneration in lumbar spine pathology. *JOR Spine*. 2020; e1087. PMID: 32613162
17. Berry DB, Rodriguez-Soto AE, Englund EK, **Shahidi B**, Parra C, Frank LR, Kelly KR, Ward SR. Multiparametric MRI characterization of level dependent differences in lumbar muscle size, quality, and microstructure. *JOR-Spine*. 2020 8;3(2): e1807. PMID: 32613159
18. Padwal J, Berry DB, Hubbard JC, Zlomislic V, Allen RT, Garfin SR, Ward SR, **Shahidi B**. Regional differences between the superficial and deep lumbar multifidus in patients with chronic lumbar spine pathology. *BMC Musculoskeletal Disorders*. 2020. Nov 20;21(1):764. PMID: 33218321
19. **Shahidi B**, Bursch R, Carmel J, Carranza A, Cooper KS, Lee JV, O'Connor C, Sorg SF, Schiehser D, Maluf KS. Greater severity and functional impact of post-traumatic headache in veterans with comorbid neck pain following traumatic brain injury. *Mil Med*. 2020. Dec 11:usaa532. doi: 10.1093/milmed/usaa532. PMID: 33218321
20. **Shahidi B**, Schenk S, Raiszadeh R. Analgesic medication use during exercise-based rehabilitation in individuals with low back pain: a call to action. *Physical Therapy*. 2021. Mar 3;101(3):pzab011. <https://doi.org/10.1093/ptj/pzab011>. PMID: 33454784
21. Raiszadeh K, Tapicer J, Taitano L, Wu J, **Shahidi B**. In-clinic versus online multidisciplinary exercise-based rehabilitation for treatment of low back pain: a prospective clinical trial in an integrated practice unit model. *J Med Internet Res*. 2021. 23(3):e22548. Doi:10.2196/22548. PMID:33734088

22. Berry DB, Grant CD, Farnsworth CL, Englund EK, Newton PO, **Shahidi B**. The influence of 3D curve severity on paraspinal muscle fatty infiltration in patients with Adolescent Idiopathic Scoliosis. *Spine Deformity*. Jul; 9(4):987-995. 2021 PMID:33751482
23. **Shahidi B**, Behun J, Berry DB, Raiszadeh K, Englund EK. Intravoxel Incoherent Motion Imaging predicts exercise-based rehabilitation response in individuals with low back pain. *NMR Biomed*. Jul 29:e4595. DOI: 10.1002/nbm.4595. PMID: 34327758
24. Englund EK, Reiter DA, **Shahidi B**, Sigmund EE. Intravoxel Incoherent Motion MRI in skeletal muscle: Systematic review and future directions. *JMRI*. Aug 2021. DOI: 10.1002/jmri.27875. PMID: 34390617
25. **Shahidi B**, Yoo, A, Farnsworth C, Newton PO, Ward SR. Paraspinal muscle morphology and composition in adolescent idiopathic scoliosis: a histological analysis. *JOR-spine* (In Press)
26. **Shahidi B**, Schuepbach R, Behun J, Ting G, Berry DB, Englund EK, Zlomislic V, Allen RT, Garfin SR, Farshad M, Ward SR. Increased paraspinal muscle fatty infiltration in individuals with acute versus chronic lumbar spine pathology. *JOR-Spine* (In Revision).
27. Ratnayake R, Mundis GM, **Shahidi B**, Akbarnia B, Malone H, Bruffey J, Eastlack RK. Assessment of Impact of Single Photon Emission Computed Tomography (SPECT) on Management of Degenerative Cervical and Lumbar Disease: A Multi-Institution Survey of Spine Surgeons. *NMR Biomed* (In Review).
28. Behun JJ, Anderson B, Englund EK, Berry DB, Oh Y, **Shahidi B**. Changes in Intervertebral Disc Hydration with Lumbar Extension Resistance Exercise. *J Biomech* (In Review)
29. **Shahidi B**, Lee E, Xu R, Padwal J. Adherence to a high intensity exercise-based rehabilitation program in individuals with low back pain. *Archives PM&R*. (In Review).
30. Eastlack RK, Malone H, Akbarnia BA, Collier M, Elsebaie HB, Monjazez B, **Shahidi B**, Mundis GM. A Novel Intervertebral Fusion Classification System for the Advent of Bioactive Interbody Implants. *J Neurosurgery* (In Review).
31. Englund EK, Behun J, Berry DB, Frank LR, Ward SR, **Shahidi B**. Methodological considerations in using intravoxel incoherent motion for evaluating muscle blood flow (In preparation).
32. Englund EK, Behun J, Berry DB, **Shahidi B**. Changes in lumbar extensor muscle blood flow following moderate and high intensity exercise using intravoxel incoherent motion (In preparation).
33. **Shahidi B**, Tomiya A, Su JJ, Regev G, Garfin S, Kim C, Lieber R, Ward SR. The effect of fatty infiltration and revision surgery on passive mechanical properties of the lumbar multifidus muscle. (In preparation)

Non-peer reviewed publications/ book chapters:

1. Invited Commentary by **Shahidi B**: Hon Kit Siu E, Tai Wing Chiu T. The relationship between cervical range of motion, head-repositioning accuracy, and postural stability in healthy adults. *International Journal of Therapy and Rehabilitation*. 20(1): 9-18. 2013
2. **Shahidi B**, Berry DB, Ward SR. Joint Structure and Function. Chapter 1: Biomechanics.
3. **Shahidi B**, Hubbard JC, Lieber R, Ward SR. International Society for Study of the Lumbar Spine: Lumbar Spine Online Textbook. Chapter 4: "Function of Human Back Muscles"
4. **Shahidi B**, Ward SR. Letter to Editor and Response: Gene expression in lumbar spine muscle. *Spine*. 2020.
5. Haldeman PB, Robb Swan A, Ward SR, Osorio J, **Shahidi B**. Letter to Editor Re: "State of the art: proximal junctional kyphosis – diagnosis, management and prevention" *Spine Deformity*. DOI 10.1007/s43390-021-00420-5 (In Press)

Conference Abstracts/Presentations:

1. **Shahidi B**, Stephenson JL, Balter JE, Griffin L, Maluf KS. Sex Differences in Basal HPA Activity and Responses to Acute Psychosocial Stress Exposure in Individuals with Chronic Neck Pain. Abstract- presented at the 13th Annual World Congress on Pain, Montreal, CA; August 2010.
2. **Shahidi B**, Johnson C, Everett-Curran D, Maluf K. Reliability and Discriminant Validity of Cervicothoracic Impairment Measures in Individuals With and Without Chronic Neck Pain. Abstract – presented at American Physical Therapy Association Combined Sections Meeting, Chicago, USA; February 2012
3. **Shahidi B**, Landa-Posas M, Maluf KS. Association Between Changes in Cervical Posture and Muscle Activity During Exposure to an Acute Psychosocial Stressor. Abstract – presented at XIX Congress of the International Society for Electrophysiology and Kinesiology, Brisbane , AUS; July 2012.
4. **Shahidi B**, Stephenson JL, Maluf KS. Human Trapezius Motor units Exhibit Tonic & Phasic Activity Associated with Respiration. Abstract- presented at Motoneuron, Sydney, AUS; July 2012.
5. **Shahidi B**, Stephenson JL, Maluf KS. Characterization of tonic and phasic motor unit discharge in the trapezius. Presentation by KSM at Motoneuron, Sydney, AUS July 2012.
6. **Shahidi B**, Kyle B, Maluf KS. Contribution of scapular strength to cervical co-contraction during the prone neck extensor endurance test. Marilyn Gossman Graduate Student Research Seminar Platform- presented at American Physical Therapy Association Combined Sections Meeting, San Diego, USA; January 2013
7. **Shahidi B**, Laudenslager M, Maluf KS. Associations between chronic stress and pain processing in healthy adults. Abstract- presented at Society for Neuroscience, San Diego, USA; November 2013

8. **Shahidi B**, Haight A, Maluf KS. Alterations in pain processing before and after development of neck pain. Marilyn Gossman Graduate Student Research Seminar Platform- presented at American Physical Therapy Association Combined Sections Meeting, Las Vegas, USA; February 2014
9. **Shahidi B**, Sannes T, Laudenslager M, Maluf KS. Cortisol awakening response predicts cardiovascular response to acute psychosocial stress in individuals with chronic neck pain. Abstract- presented at Neurobiology of Stress Workshop, Cincinnati, USA; June 2014
10. **Shahidi B**, Haight AE, Maluf KS. Motor control during a cervical extensor endurance task in office workers who develop chronic neck pain. Platform –presented at XIX Congress of the International Society for Electrophysiology and Kinesiology, Rome, ITA; July 2014.
11. **Shahidi B**, Balter JE, Nofsinger M, Anton D, Maluf KS. Static muscle activity and muscular rest throughout the workday predict development of chronic neck pain in office workers. Platform – presented at XIX Congress of the International Society for Electrophysiology and Kinesiology, Rome, ITA; July 2014.
12. Maluf KS, **Shahidi B**. Motor responses to simulated workplace stressors do not predict development of chronic neck pain in office workers. Platform – presented by KSM at XIX Congress of the International Society for Electrophysiology and Kinesiology, Rome, ITA; July 2014.
13. **Shahidi B**, Haight AE, Maluf KS. Physical, psychological, and neurophysiological risk factors for development of chronic neck pain: A prospective cohort study. Marilyn Gossman Graduate Student Research Seminar Platform- presented at American Physical Therapy Association Combined Sections Meeting, Indianapolis, USA; February 2015.
14. **Shahidi B**, Hubbard JC, Zlomislic V, Allen T, Garfin S, Ward SR. MRI-based scoring of multifidus inadequately characterizes muscle tissue quantity and quality in patients with chronic lumbar spine disease. Abstract – presented at International Society for the Study of the Lumbar Spine, Singapore; May 2016.
15. **Shahidi B**, Parra C, Berry D, Ward SR. Age-related changes in lumbar paraspinal muscle cross sectional area and fatty infiltration in individuals with low back pain. Platform –Presented in Orthopaedics Section (Spine) at American Physical Therapy Association Combined Sections Meeting, San Antonio, USA; February 2017.
16. **Shahidi B**, Gibbons MC, Hubbard JC, Zlomislic V, Allen RT, Garfin SR, Ward SR. Lumbar multifidus muscle inflammation and degeneration in individuals with chronic lumbar spine pathology. Abstract presented at Orthopaedic Research Society Annual Meeting, San Diego, USA; March 2017.
17. Parra C, Berry DB, **Shahidi B**, Ward SR, Deane KD, Hughes Austin JM. Thoracic Spine Muscle Quality and Bone Mineral Density in a Population at Risk for Rheumatoid Arthritis. Presented at UC San Diego Institute for Public Health's 3rd Annual Public Health Research Day, San Diego, CA; April 2017.

18. **Shahidi B**, Gibbons MC, Allen RT, Zlomislik V, Garfin SR, Ward SR. Mechanisms of muscle degeneration in chronic lumbar spine pathology. Abstract accepted for poster presentation at International Society for Study of the Lumbar Spine, Athens; May 2017.
19. **Shahidi B**, Hubbard JC, Gibbons MC, Garfin SR, Ward SR. Multifidus degeneration in chronic lumbar spine pathology. Abstract presented at International Society for Biomechanics, Brisbane, Australia; July 2017.
20. Berry DB, **Shahidi B**, Rodriguez-Soto AE, Kelly KR, Ward SR. Lumbar muscle structure predicts operational postures in active duty marines. Presented at International Society of Biomechanics, Brisbane, Australia; July 2017.
21. **Shahidi B**, Gibbons MC, Pluemvitayaporn T, Padwal J, Allen RT, Zlomislic Z, Garfin SR, Ward SR. Biological Predictors of post-surgical outcomes in individuals with lumbar spine pathology. Presented at Orthopaedic Research Society Annual Meeting, New Orleans; March 2018.
22. Padwal J, Raiszadeh K, Berry DB, Wu J, Tapicer J, Ward SR, **Shahidi B**. Outcomes following intensive, resistance-based physical rehabilitation in an outpatient community clinic. Presented at SOSORT 13th international meeting, Dubrovnik, Croatia; April 2018
23. Padwal J, Berry DB, Raiszadeh K, Johnson S, Ward SR, **Shahidi B**. Changes in paraspinal muscle characteristics assessed with MRI and functional outcomes following intensive exercise rehabilitation. Abstract presented at International Society for the Study of the Lumbar Spine (ISSLs), Banff, Canada; May 2018.
24. **Shahidi B**, Padwal J, Ting G, Berry DB, Englund E, Schuepbach R, Zlomislic V, Allen, RT, Garfin SR, Farshad M, Ward SR. Differences in muscle quality between individuals with acute and chronic lumbar spine pathology. Presented at Orthopaedic Research Society Annual Meeting, Austin; Feb 2019.
25. Newton P, Yoo, A, **Shahidi B**, Esparza MC, Johnson S, Padwal J, Farnsworth C, Lieber RL, Ward SR. Paraspinal Muscle Tissue Morphological Differences at the Curve Apex in Patients with Adolescent Idiopathic Scoliosis. Presented at POSNA, Charlotte, NC; May 2019.
26. Englund E, Berry DB, Frank LR, Ward SR, **Shahidi B**. IVIM Imaging of muscle following moderate and high-intensity exercise. Presented at ISMRM, Montreal, Canada; May 2019.
27. Fisch KM, Gabriel R, **Shahidi B**, Said E, Waterman R. Pharmacogenomics and opioid use patterns in patients with chronic spine pain. Presented at American Society for Human Genomics. Houston, TX; Oct 2019.
28. Berry DB, Englund E, **Shahidi B**, Frank L, Ward SR. Multiparametric MRI characterization of level dependent differences in lumbar muscle size, quality, and microstructure. Presented at MYO-MRI, Berlin, Germany; Nov 2019

29. Englund E, Berry DB, Frank L, Ward SR, **Shahidi B**. Changes in lumbar extensor muscle blood flow following exercise assessed with intravoxel incoherent motion. Presented at MYO-MRI, Berlin Germany; Nov 2019
30. Bursch R, Carmel J, Carranza A, Cooper K, Lee J, Maluf K, O'Connor C, Schiehser D, **Shahidi B**. Prevalence and Impact of Neck Pain in Veterans with Traumatic Brain Injury and Persistent Headache. Poster presented at APTA's Combined Sections Meeting, Denver CO; Feb 2020.
31. Chandrupatla R, **Shahidi B**, Bruno K, Chen J. A retrospective study on Patient-specific predictors of response to sacroiliac joint injections. Presented at ASRA Annual Pain Medicine Meeting, New Orleans LA. Nov 2019.
32. Chandrupatla R, **Shahidi B**, Bruno K, Chen J. Patient-specific predictors for responsiveness to sacroiliac joint injections: A retrospective study. Presented at Orthopaedic Research Society Annual Meeting, Phoenix AZ, Feb 2020.
33. Grant CD, Berry DB, Farnsworth C, Ward SR, **Shahidi B**, Newton PO. The influence of 3D curve severity and sex on paraspinal muscle fatty infiltration in patients with adolescent idiopathic scoliosis. Poster presented at Orthopaedic Research Society Annual Meeting, Phoenix AZ, Feb 2020.
35. Englund EK, Berry DB, Behun JJ, Frank LR, Ward SR, **Shahidi B**. IVIM MRI evaluation of blood flow response to exercise in patients with low back pain compared to healthy, pain-free controls. Accepted at International Society for Magnetic Resonance in Medicine annual meeting, Sydney AUS, April 2020.
36. Ratnayake R, Mundis GM, **Shahidi B**, Akbarnia B, Eastlack R. Assessment of Impact of Single Photon Emission Computed Tomography (SPECT) on Management of Degenerative Cervical and Lumbar Disease: A Multi-Institutional Survey of Spine Surgeons. Presented to North American Spine Society, San Diego CA. Oct 2020
37. **Shahidi B**, Elliot JM, Smith ZM. Muscle Health as a Biomarker for Functional Recovery Following Spine Pain and Injury. Symposium at North American Spine Society, San Diego, CA Oct 2020.
38. Mundis GM, Rios F, Malone H, **Shahidi B**, Iannacone T, Galli S. Eastlack R. The effect of a transdisciplinary spine conference on quality and safety for adult spinal deformity surgery. Accepted at International Meeting on Advanced Spine Techniques 58th Annual Meeting, 2021.
39. Ratnayake R, Mundis GM, **Shahidi B**, Akbarnia B, Eastlack R. Assessment of Impact of Single Photon Emission Computed Tomography (SPECT) on Management of Adult Spinal Deformity (ASD): A Multi-Institutional Survey of Spine Surgeons. Submitted to Scoliosis Research Society 55th Annual Meeting, Phoenix AZ, 2020.
42. Shahrivini B, **Shahidi B**, Fennessy J, Grant C, Parekh J, Zlomislic V, Garfin S, Allen RT. The influence of prophylactic cement augmentation on surgical revision rates in spinal fusion surgery. Presented at WMRC (virtual conference), January 2021.

43. Raiszadeh K, Tapicer J, **Shahidi B**. In-clinic vs online multidisciplinary exercise-based low back pain rehabilitation: A prospective clinical trial. Presented as a platform presentation at the APTA Combined Sections Meeting, February 2021
44. **Shahidi B**, Anderson BJ, Iannacone TL, Moltzen CA, Mundis GMM. Force of Ligamentous Failure is Lower in Patients with Adult Spineal Deformity Requiring Revision Surgery. Presented at American Association of Orthopaedic Surgery, San Diego, CA August, 2021.
45. Raiszadeh K, Tapicer J, **Shahidi B**. In-clinic vs online multidisciplinary exercise-based low back pain rehabilitation: A prospective clinical trial. Presented at American Association of Orthopaedic Surgery, San Diego CA, August, 2021
46. Record N, Carnelian A, Brady KC, **Shahidi B**, Jelousi M, Eastlack RK, Akbarnia BA, Mundis GM. Are neuromonitoring alerts predictive of post-operative deficits in lateral. Lumbar interbody fusion? Presented at the International Society for Advancement of Spine Surgery (ISASS), 21st annual conference, Miami FL, May 2021.
47. Rios F, Malone H, **Shahidi B**, Iannacone T, Galli S, Mundis GM, Eastlack RK. The effect of a transdisciplinary spine conference on quality and safety for adult spinal deformity surgery. Accepted at IMAST, 2021. **Selected for Best New Methodologies and Techniques to Enhance Safety in Spine Surgery Award.**
48. **Shahidi B**, Anderson BJ, Iannacone TL, Moltzen CA, Eastlack RK, Mundis GM. Peak force of the posterior ligamentous complex is lower in patients with adult spinal deformity requiring revision surgery. Presented at Joint Section on Disorders of the Spine and Peripheral Nerves- Spine Summit, July 2021.
49. Eastlack RK, Malone H, Collier M, Elsebaie HB, Mundis GM, **Shahidi B**, Akbarnia BA. A novel fusion classification system for advent of bioactive interbody implants. Accepted for presentation to Joint Section on Disorders of the Spine and Peripheral Nerves- Spine Summit, July 2021
50. Malone H, Mundis GM, Collier M, Kidwell R, Rios F, Jelousi M, Galli S, **Shahidi B**, Akbarnia BA, Eastlack RK. Lateral lumbar interbody fusion using a 3D-printed porous titanium interbody device without biologics. Submitted to Scoliosis Research Society, 2021.
51. Moltzen C, Ames RJ, Hoel RJ, **Shahidi B**, Iannacone T, Jelousi M, Malone H, Akbarnia BA, Eastlack RK, Mundis GM. Is preoperative resolution of leg pain at rest a predictor for successful indirect decompression in anterior and lateral lumbar interbody fusion? Presented at North American Spine Society, Boston MA 2021.
52. Ames RJ, Kerr WB, **Shahidi B**, Monjazebe B, Hosseini P, Pahys JM, Hwang S, Samdani AF, Oetgen M, Andras LM, Newton PO, Yaszay B, Akbarnia B. Proximal Level Selection in Magnetically Controlled Growing Rods: T2 or T3 may be protective against implant related complications and UPROR. Presented at 15th ICEOS, Salt Lake City UT 2021.

53. Ames RJ, Moltzen C, Hoel RJ, Iannacone T, Jelousi M, Malone H, **Shahidi B**, Mundis GM, Eastlack RK. Is preoperative resolution of leg pain at rest a predictor of successful indirect decompression in anterior and lateral lumbar interbody fusion? Presented at SMISS Asia/Pacific 2021 Annual Meeting(virtual). **Selected for Best Paper award.**

Media:

1. Ostrow, Nicole. Depressed Mood Triples Risk for Chronic Neck Pain in Office Workers. www.clinicalpainadvisor.com/depressed-mood-triples-risk-for-chronic-neck-pain-in-office-workers/printarticle/459773/ Dec 15, 2015.
2. Bailey, Jeannie. ORS Spinal Column. Section Member Spotlight: Orthopedic Research Society Journal Club Paper Review. Contribution to lumbar spine pathology and age to paraspinal muscle size and fatty infiltration. <https://ors.informz.net/informzdataservice/onlineversion/ind/bWFpbGluZ2luc3RhbmNlaWQ9NjcxNjU1MCZzdWJzY3JpYmVyaWQ9MTA2ODUxMDA4Mg.> Jun29, 2017
3. Tatta Joe. The Healing Pain Podcast. Analgesic Use in Rehabilitation. https://www.integrativepainscienceinstitute.com/latest_podcast/pain-medication-and-exercise-how-analgesic-medications-impair-healthy-muscle-function-with-bahar-shahidi-pt-dpt-phd/
. May 18, 2021

Student Mentoring:

- Jan 2010-May 2010 **Clinical Instructor.** Ruoqia Zhou, Doctor of Physical Therapy student, University of Colorado Denver.
- Oct 2008 – Sep 2010 **Work-Study Research Advisor.** Linell Griffin, DPT student. Project Title: *Sex and age effects on stress-evoked motor unit activity in patients with chronic neck pain.* Physical Therapy Program, University of Colorado, Aurora, CO.
- Aug 2009 – Sep 2011 **Work-Study Research Advisor.** AnaLuisa Miller, DPT student. Project Title: *Sex and age effects on stress-evoked motor unit activity in patients with chronic neck pain.* Physical Therapy Program, University of Colorado, Aurora, CO.
- Aug 2010 – Sep 2011 **Work-Study Research Advisor.** Jennifer Molner, DPT student. Project Title: *Stress-evoked muscle activity in occupational myalgia.* Physical Therapy Program, University of Colorado, Aurora, CO.
- Jun 2011 – Sep 2011 **Summer Research Internship Advisor.** Ryan Novoa, Exercise and Sports Science undergraduate student, Oregon State University. Project Title: *Sex and age effects on stress-evoked motor unit activity in patients with chronic neck pain.* Physical Therapy Program, University of Colorado, Aurora, CO.
- May 2011 – Jun 2011 **University of Colorado Office of Diversity Scholarship Awarded 2011 Aurora LIGHTS Minority Summer Research Internship Advisor. HRSA Health Careers Opportunity Program (HCOP).** Magnolia Landa-Posas, High School student. Project Title: *Relationship between cervical postural angle and muscle activity.* Physical Therapy Program, University of Colorado, Aurora, CO.

- May 2011-Nov 2011 **Work-Study Research Advisor.** Zachary Overgaard. Project Title: *Stress-evoked muscle activity in occupational myalgia*. Physical Therapy Program, University of Colorado, Aurora, CO.
- Jan 2012- May 2012 **University of Colorado Undergraduate Psychology Research Internship Advisor.** Ashley Haight. Project Title: *Psychosocial risk factors for chronic neck pain*. Physical Therapy Program, University of Colorado, Aurora, CO.
- Aug 2012 – May 2013 **Work-Study Research Advisor.** Emily Matthews, DPT student. Project Title: *Stress-evoked muscle activity in occupational myalgia*. Physical Therapy Program, University of Colorado, Aurora, CO.
- Aug 2011 – May 2014 **Work-Study Research Advisor.** Betsy Kyle, DPT student. Project Title: *Stress-evoked muscle activity in occupational myalgia*. Physical Therapy Program, University of Colorado, Aurora, CO.
- Jun 2015 – Jun 2016 **Orthopaedic Surgery Resident Research Co-Mentor (Ward).** James Hubbard, MD. Project Title: *Stereological differences in lumbar multifidus muscle architecture in chronic low back pain*. Orthopaedic Surgery Residency Program, University of California, San Diego, San Diego, CA.
- Jan 2016 – Aug 2016 **Undergraduate Intern Advisor.** Fane Hu. Project Title: *Characterization of lumbar muscle fatty infiltration in individuals with chronic low back pain*. University of California San Diego Medical School, San Diego, CA.
- Jun 2017- Aug 2017 **Medical Student Research Co-Mentor (Ward).** Gabrielle Cahill. Project Title: *Lumbar spine muscle degeneration inhibits rehabilitation induced muscle recovery*. University of California San Diego Medical School, San Diego, CA
- Jun 2017- 2018 **Medical Student Research Mentor (CREST-MAS).** Jennifer Padwal. Project Title: *Functional outcomes and cost effectiveness of high intensity resistance exercise in individuals with low back pain*. University of California San Diego Medical School, San Diego, CA.
- Jul 2017-2018 **Orthopaedic Surgery Resident Research Co-Mentor (Ward, Newton).** Andrew Yoo, MD. Project Title: *Skeletal muscle architecture in children with adolescent idiopathic scoliosis*. UC San Diego Medical School, Rady Childrens Hospital, San Diego CA.
- Jun 2018- Aug 2018 **Medical Student Research Mentor (ISP).** Gabriel Ting. Project Title: *Mechanical and load-bearing protein related differences in multifidus muscle of patients with acute vs. chronic lumbar disc injury*. University of California San Diego Medical School, San Diego, CA.
- Jun 2019- Aug 2019 **Medical Student Research Mentor (ISP).** Rahul Chandrupatla. Project Title: *The relationship between pain intensity, location and psychosocial factors and clinical outcomes for patients undergoing sacroiliac joint injections*. University of California San Diego Medical School, San Diego, CA.
- Sept 2019-Sep 2020 **Undergraduate Student Independent Studies Mentor (BISP199).** Bradley Anderson. Project Title: *Gene expression of human paraspinal muscle in response to acute exercise in individuals with lumbar spine pathology*. University of California San Diego, San Diego, CA

- Jul 2019-Sep 2020 **Research Advisor.** Robyn Bursch, DPT student. Project Title: Prevalence and Impact of Neck Pain in Veterans with Traumatic Brain Injury and Persistent Headache. San Diego State University, San Diego, CA.
- Sept 2019-Apr 2021 **Medical Student Research Mentor.** Connor D. Grant. Project Title: 3D Curve severity and muscle structure in individuals with adolescent idiopathic scoliosis. University of California San Diego, San Diego, CA.
- Dec 2019-Jul 2021 **Medical Student Research Mentor.** Bitu Shahrivini. Project Title: The influence of cement augmentation at the upper instrumented vertebrae +1 level for spinal fusions. University of California San Diego, San Diego, CA.
- Aug 2020- Jul 2021. **BS/MS Graduate Student Mentor, Biology.** Bradley Anderson. Project Title: Gene expression of human paraspinal muscle in response to acute exercise in individuals with lumbar spine pathology. University of California San Diego, San Diego, CA
- July 2021-Dec 2021 **Undergraduate Student Research Mentor.** Bahar Attaripour. Project Title: The impact of COVID-19 pandemic on spine surgery practice and outcomes in an urban health care system. University of California, San Deigo, San Diego, CA
- July 2021-July 2022 **Orthopaedic Surgery Resident Research Mentor.** Angel Ordaz, MD. Project Title: Paraspinal muscle gene expression in individuals with lumbar spine pathology. University of California San Diego, San Diego, CA.

Research Funding

Active Funding

- Jul 2017- Jun 2022 **R01 HD088437-01A1** Role: Co-Investigator (PI: Ward). Title: *Lumbar spine muscle degeneration inhibits rehabilitation-induced muscle recovery*
- Jul 2019-Jun 2022 **R21 NS109852-01A1 (NCE)** Role: Co-Principal Investigator. Title: *Imaging Markers of Central and Peripheral Impairment and Chronic Post-traumatic Headache*
- Sep 2020-Aug 2025 **R01 HD100446-01A1** Role: Principal Investigator. Title: *The interaction between analgesic medication and exercise-induced muscle hypertrophy in patients with low back pain*
- Oct 2020-Sept 2023 **Department of Defense JW200175** Role: Co-Investigator, (PI: Kelly, Ward). Title: *Quantification of cervical and lumbar spine kinematics, intervertebral disc health, and muscle physiology in swift boat combatant crewmen*

Completed Funding

- July 2010 -June 2014 **R01 AR056704.** Role: Graduate Research Assistant, PI: Katrina Maluf; Title: *Stress Evoked Muscle Activity in Occupational Myalgia*
- Sep 2011 – Aug 2012 **Foundation for Physical Therapy Kendall Scholarship.** Role: PI; Title: *Pre-doctoral training grant (\$5,000 directs).*
- Sep 2012 – Aug 2013 **Foundation for Physical Therapy Promotion of Doctoral Studies Level I.** Role: PI; Title: *Pre-doctoral training grant (\$7,500 directs).*
- Sep 2013 - Aug 2014 **Foundation for Physical Therapy Promotion of Doctoral Studies Level II.** Role: PI; Title: *Pre-doctoral training grant (\$15,000 directs).*
- Sep 2013- Sep 2016 **Department of Defense 2012-5219 PR120576,** Role: Postdoctoral Research Assistant, (PI: Ward). Title: *Lumbar Spine Musculoskeletal Physiology and Biomechanics During Simulated Military Operations*
- Apr 2013- Mar 2018 **R01 HD073180-01A1** Role: Postdoctoral Research Assistant, (PI: Ward) Title: *The Physiological Basis of Rotator Cuff Muscle Rehabilitation*
- Jan 2016- Dec 2017 **CTRI TL1TR001443** Role: Principal Investigator. Title: *Muscle structural, metabolic, and adaptive features in acute and chronic disc herniation*
- Aug 2019-Jul 2020 **U54 DA059115-01** Role: Co-investigator (PI's: Fisch, Frazer, Laurent, Jepsen). Title: *Omics Data Generation Center (ODGC) for the Acute to Chronic Pain Signatures (A2CPS) Program.*
- Dec 2017- Nov 2020 **R03 HD094598A** Role: Principal Investigator. Title: *3D quantification of exercise-induced recruitment in pathological paraspinal muscles*
- Jan 2019- Jun 2021 **Foundation for Physical Therapy Research; Magistro Family Award.** Role: Principal Investigator. Title: *Functional outcomes and cost effectiveness of high intensity resistance exercise in individuals with low back pain*
- Oct 2020-Sept 2021 **Scripps Clinic Medical Group,** Role: Site PI (LSA), (PI: Mundis). Title: *Ligamentous Insufficiency in Proximal Junctional Kyphosis*
- Oct 2020-Sept 2021 **Scripps Clinic Medical Group,** Role: consultant, (PI: Eastlack). Title: *Clinical Outcomes for Community and Academic Spine Treatment Centers*

Extracurricular employment/activities:

- 2000- United States Judo Federation member
- 2004- USA Wrestling member

2004-2015	Brazilian Jiu-jitsu/ Submission Grappling coach: Grapplers Edge and Mixed Martial Arts
2007,2009, 2013	USA Submission Grappling team member FILA World Submission Grappling championship runner up
2013	USA National Submission Grappling champion