

STEVEN P. BROGLIO

EDUCATION

University of Georgia: Athens, Georgia: 2006

Doctorate of Philosophy, Exercise Science: Measurement and Evaluation concentration

Dissertation: *Reliability of computer-based concussion assessment programs*

University of Pittsburgh: Pittsburgh, Pennsylvania: 2002

Master of Science, Health and Rehabilitation Science

Thesis: *The acute effect of rotational heading on measures of postural stability*

University of North Carolina at Chapel Hill: Chapel Hill, North Carolina: 2000

Bachelor of Arts, Exercise and Sport Science

Graduate with Highest Honors and Highest Distinction

CAAHEP Accredited Undergraduate Athletic Training Curriculum

Thesis: *The cumulative effect of soccer on postural stability and cognitive function*

PROFESSIONAL EXPERIENCE

University of Michigan

School of Kinesiology

Professor: 2018 to present

Associate Professor: 2013 to 2018

Assistant Professor: 2011 to 2013

Director, NeuroTrauma Research Laboratory: 2011 to present

Founding Director, Michigan Concussion Center: 2018 to present

School of Medicine

Department of Neurology

Professor: 2019 to present

Adjunct Associate Professor: 2014 to 2019

Adjunct Assistant Professor: 2011 to 2014

Department of Physical Medicine and Rehabilitation

Professor: 2019 to present

Adjunct Associate Professor: 2014 to 2019

Adjunct Assistant Professor: 2011 to 2014

University of Michigan Injury Prevention Center

Concussion Content Lead: 2016 to present

Member: 2013 to 2016

Institute for Healthcare Policy and Innovation

Investigator Member: 2014 to present

Center for Human Growth and Development

Member: 2019 to present

University of Illinois at Urbana-Champaign

Department of Kinesiology and Community Health

Adjunct Assistant Professor: 2011 to 2017

Assistant Professor: 2006 to 2011

Director, Neurotrauma Research Laboratory: 2006 to 2011

Director, Undergraduate Athletic Training Education Program: 2006 to 2011

Director, Graduate Athletic Training: 2008 to 2011

Center for Advanced Study

Beckman Fellow: 2010 to 2011

Center on Health, Aging, and Disability

Affiliate Member: 2008 to 2011

University of Georgia

Department of Kinesiology

Clinical Coordinator, Undergraduate Athletic Training Education Program: 2003 to 2006

University of Pittsburgh

Neuromuscular Research Laboratory

Research Assistant: 2001

TEACHING EXPERIENCE

University of Michigan

School of Law

Course Instructor Concussion: Reducing Brain Injuries in Youth Football

School of Kinesiology

Course Instructor: Athletic Training Administration
Pharmacology for the Allied Health Professional
Mild Traumatic Brain Injury in Sport

University of Illinois at Urbana-Champaign

Department of Kinesiology and Community Health

Course Instructor: Advanced Assessment of Athletic Injuries - Lower Extremity
Advanced Assessment of Athletic Injuries - Upper Extremity
Capstone Proficiency of Athletic Training
Special Topics - Sport Concussion
Issues in Sports Medicine

University of Georgia

Department of Exercise Science

Course Instructor: Recognition and Evaluation of Athletic Injuries - Upper Extremity
Introduction to Athletic Training Lab
Clinical Experience in Athletic Training I, II, III, IV

Workshops: Athletic Training Student Workshop:
Co-director: 2004 to 2006
Cramer Japan Athletic Training Workshop:
Co-director: 2004
Coordinator and lecturer: 2003

University of Pittsburgh

Department of Health and Rehabilitation Science

Course Instructor: Athletic Training Practicum
Basic Athletic Training Lab
Teaching Assistant: Basic Athletic Training

University of North Carolina at Chapel Hill

Department of Exercise and Sport Science

Teaching Aid: Human Anatomy Cadaver Lab, 1999

CLINICAL EXPERIENCE

University of Georgia

Graduate Research Assistant (Athletic Training Research Laboratory): 2002 to 2006
Approved Clinical Instructor of Athletic Training Students: 2003 to 2006
Graduate Assistant Certified Athletic Trainer - Cheerleading: 2004

University of Pittsburgh

Graduate Assistant Certified Athletic Trainer - Baseball: 2000 to 2002
Graduate Assistant Certified Athletic Trainer - Women's Soccer: 2002

University of North Carolina at Chapel Hill

Athletic Training Student: 1998 to 2000
Teams covered: football, track & field, field hockey, baseball, Southeast
Raleigh High School

Athletic Summer Camps

Certified Athletic Trainer
University of North Carolina - Field Hockey: 2000 to 2003
Carnegie Mellon University - Soccer: 2001
Athletic Training Student
University of North Carolina - Field Hockey, Wrestling: 1999

New York Football Giants

Training Camp Intern: 1999

SCHOLARSHIP

Refereed Journal Publications

Asken BM, Houck ZM, Schmidt JD, Bauer RM, **Broglia SP**, McCrea MA, McAllister TW, Clugston JR, A normative reference vs. baseline testing compromise for ImpACT: the CARE Consortium Multiple Variable Prediction (CARE-MVP) Norms, *Sports Medicine* (in review)

Caccese J, Eckner JT, Franco-MacKendrick L, Hazzard J, Ni M, **Broglia SP**, McAllister T, McCrea M, Clinical reaction time determinants in healthy collegiate athletes, *Journal of Athletic Training* (in review).

Cunningham J, **Broglia SP**, Wyse J, Farrell G, Denvir K, Wilson F, Athlete concussion history recall is underestimated: a reliability study of self-reported concussion history in current professional rugby union players, *Neurosurgery* (in review).

Moran R, **Broglia S**, Francioni K, Sosnoff J, Exploring baseline concussion assessment performance in adapted wheel-chair sport athletes, *Journal of Athletic Training* (in review).

McCrea M, **Broglia SP**, McAllister TW, Gill J, Giza CC, Huber D, Harezlak J, Cameron KL, Houston MN, McGinty G, Jackson JC, Guskiewicz KM, Mihalik J, Brooks A, Duna S, Rowson S, Nelson LD, Pasquina P, Meier TB, CARE Consortium Investigators, Blood biomarkers of acute sport-related concussion in collegiate athletes: A prospective study from the NCAA-DoD CARE Consortium, *JAMA Neurology* (in review).

Brett BL, Breedlove K, McAllister T, **Broglia SP**, McCrea MA, CARE Consortium Investigators, Determination of Asymptomatic Status and Duration of a Graduated Return to Play Protocol after Concussion: A study from the Concussion, Assessment, Research, and Education (CARE) Consortium, *British Journal of Sports Medicine* (in review).

Brett BL, Bobholz SA, España LY, Huber DL, Mayer AR, Harezlak J, **Broglia SP**, McAllister T, McCrea MA, Meier TB, CARE Consortium Investigators, Concussion and sport history effects on brain morphometry in collegiate athletes, *Neurology* (in review).

Garcia GGP, Yang J, Lavieri MS, McAllister TW, McCrea MA, **Broglia SP**, CARE Consortium Investigators, Optimizing components of the Sport Concussion Assessment Tool for acute concussion assessment, *Medicine and Science in Sport and Exercise* (in review).

Caccese JB, Bodt BA, Iverson GL, Kaminski TW, Bryk K, Oldham JR, **Broglia SP**, McCrea M, McAllister TW, Buckley TA, Earlier estimated age of first exposure to contact sports is not associated with worse neurocognitive performance or greater psychological distress in healthy NCAA collegiate athletes: A cohort study, *Sports Medicine* (in review).

Caccese JB, Houck Z, Kaminski TW, Clugston JR, Iverson GL, Bryk K, Oldham JR, Pasquina PF, **Broglia SP**, McAllister TW, McCrea M, Buckley TA, CARE Consortium Investigators, Estimated age of first exposure to American football and outcome from concussion, *Neurology* (in review).

Brett B, Wu YC, Mustafi SM, Saykin AJ, Koch KM, Nencka AS, Giza CC, DiFiori JP, Guskiewicz KM, Mihalik JP, LaConte SM, Duma SM, **Broglia SP**, McAllister TW, McCrea MA, Meier TB, The association between persistent white-matter abnormalities and risk of repeat injury after sport-related concussion, *Frontiers*

Neurology (in review).

Memmini AK, La Fontaine MF, **Broglia SP**, Moore RD, Long-term influence of concussion on cardio-autonomic function in adolescent hockey players, *Clinical Journal of Sports Medicine* (in review).

Asken BM, Houck ZM, Clugston JR, Larrabee GJ, McCrea MA, **Broglia SP**, McAllister TW, and Bauer RM, and CARE Consortium Investigators, Word-reading ability as a “hold test” in cognitively Normal young adults with history of concussion and repetitive head impact exposure: A CARE Consortium study, *The Clinical Neuropsychologist* (in review).

McGuine T, Pfaller A, Hetzel S, **Broglia S**, Hammer E, A prospective study of the impact of concussions on health outcomes in high school football players, *Journal of Athletic Training* (in review).

Wu YC, Harezlak J, Elsaid NMH, Lin Z, Wen Q, Mustafi SM, Rikken LD, Koch KM, Nencka AS, Meier TB, Mayer AR Wang Y, Giza CC, DiFiori JP, Guskiewicz KM, Mihalik JP, LaConte SM, Duma SM, **Broglia SP**, Saykin AJ, McCrea M, McAllister TW, Longitudinal white-matter abnormalities in sports-related concussion: A diffusion MRI study of the NCAA-DoD CARE Consortium, *Neurology* (in review).

Houck ZM, Asken BM, Bauer RM, Caccese JB, Buckley TA, McCrea MA, McAllister T, **Broglia SP**, Clugston JR, CARE Consortium Investigators, Academic aptitude mediates the relationship between socioeconomic status and race in predicting IMPACT scores in college athletes, *Journal of the International Neuropsychological Society* (in review).

Stemper B, Shah A, Harezlak J, Rowson S, Duma S, Mihalik J, Rikken L, Brooks A, Cameron K, Giza C, Houston M, Jackson J, McGinty G, DiFiori J, **Broglia SP**, McAllister T, McCrea M, Repetitive head impact exposure during NCAA Division I football: A study from the NCAA-DoD CARE Consortium, *Journal of Athletic Training* (in review).

Van Pelt K, Allred D, Brodeur R, Cameron K, Campbell D, D'Lauro C, He X, Houston M, Johnson B, Kelly T, McGinty G, Meehan S, O'Donnell P, Peck K, Svoboda S, Pasquina P, McAllister T, McCrea M, **Broglia SP**, Concussion recovery trajectories among tactical athletes: Results from the CARE Consortium, *Journal of Athletic Training* (in review).

Garcia GGP, Lavieri MS, Jiang R, McCrea MA, McAllister TW, **Broglia SP**, CARE Consortium Investigators, Data-driven stochastic optimization approaches to determine decision boundaries for risk estimation models, *IIEE Transactions* (in review).

Klein AP, Tetzlaff JE, Bonis JM, Nelson LD, Mayer AR, Huber DL, Harezlak J, Mathews VP, Ulmer JL, Sinson GP, Nencka AS, Koch KM, Wu Y, Saykin AJ, **Broglia SP**, McAllister T, McCrea MA, Meier TB, CARE Consortium Investigators. Prevalence of clinically significant MRI findings in athletes with and without sport-related concussion, *Radiology* (in review).

Cunningham J, O'Grady M, **Broglia SP**, Wilson F, Self-reported cognitive difficulties are not supported by objective measures in retired contact sport athletes: A systematic review, *Sports Medicine* (in review)

Eckner JT, Wang J, Nelson L, Bancroft R, Pohorence M, He X, **Broglia SP**, Giza CC, Guskiewicz KM, Kutcher JS, McCrea M, Effect of routine sport participation on short-term clinical neurological

outcomes: A comparison of non-contact, contact, and collision sport athletes, *Sports Medicine* (in press).

Caccese JB, Eckner JT, Franco-MacKendrick L, Hazzard JB, Ni M, **Broglio SP**, McAllister TW, McCrea M, Buckley TA, Title: Clinical reaction time derterminants in healthy collegiate athletes, *Journal of Athletic Training* (in press).

McGuine TA, Pfaller A, Kliethermes S, Schwarz A, Hertzels S, Hammer E, **Broglio SP**, The impact of sport related concussion injuries on concussion symptoms and health related quality of life in male and female adolescent athletes: A prospective study, *American Journal of Sports Medicine* (in press).

Rowson S, Campolettano ET, Duma SM, Stemper B, Shah A, Harezlak J, Riggen L, Mihalik JP, Guskiewicz KM, Giza C, DiFiori J, Brooks A, Cameron K, Svoboda S, Campbell D, McGinty G, McAllister T, **Broglio SP**, McCrea M, Accounting for variance in concussion tolerance between individuals: comparing head accelerations between concussed and physically matched control subjects, *Annals of Biomedical Engineering* (in press).

Joseph J, Swallow J, Willsey K, Almeida A, Lorincz M, Fraumann R, Oppenlander M, Szerlip N, **Broglio S**, Pupillary changes after clinically asymptomatic high-acceleration head impacts in high school football athletes, *Journal of Neurosurgery* (in press).

Stemper BD, Shah AS, Mihalik JP, Harezlak J, Rowson S, Duma S, Riggen LD, Brooks A, Cameron KL, Giza CC, Goldman J, Houston MN, Jackson J, Menser M, McGinty G, **Broglio SP**, McAllister TW, McCrea M, CARE Consortium Investigators, Repetitive head impact exposure in college football following an NCAA ruling to reduce the number of preseason practices in 2018: A study from the NCAA-DoD CARE Consortium, *Annals of Biomedical Engineering* (in press).

Caccese J, Iverson G, Cameron K, Houston M, McGinty J, Jackson J, O'Donnell P, Pasquina P, **Broglio S**, McCrea M, McAllister T, Buckley, T, Estimate age of first exposure to contact sports is not associated with greater symptoms or worse cognitive functioning in US Service Academy athletes, *Journal of Neurotrauma* (in press).

Campolettano ET, Rowson S, Duma SM, Stemper B, Shah A, Harezlak J, Riggen LD, Mihalik J, Brooks A, Cameron K, Giza CC, McAllister T, **Broglio, SP**, McCrea M, Factors Affecting Head Impact Exposure in College Football Practices: A Multi-Institutional Study, *Annals of Biomedical Engineering* (in press).

Swartz EE, Myers JL, Cook SB, Guskiewicz KM, Ferrara MS, Cantu RC, Hong C, **Broglio SP**, A Helmetless-tackling intervention in football for decreasing head impact exposure: A randomized controlled trial, *Journal of Science and Medicine in Sport* (in press).

Broglio SP, Harezlak J, Katz B, Zhao S, McAllister T, McCrea M, Acute sport concussion assessment optimization: A prospective assessment from the CARE Consortium, *Sports Medicine* (in press).

Houck ZM, Asken BM, Bauer R, Kontos AP, McCrea MA, McAllister TW, **Broglio SP**, Clugston JR, CARE Consortium Investigators, Multivariate base rates of low scores and reliable decline on ImPACT in healthy collegiate athletes using CARE Consortium norms, *Journal of the International Neuropsychological Society* (in press).

McCrea M, **Broglia SP**, McAllister T, Zhou W, Zhao S, Katz BP, Kudela M, Harezlak J, Nelson LD, Meier TB, Marshall SW, Guskiewicz KM, Return to play and risk of repeat concussion in collegiate football players: Comparative analysis from the NCAA Concussion Study (1999-2001) and CARE Consortium (2014-2017), *British Journal of Sports Medicine* (in press).

Breedlove K, Ortega J, Kaminski T, Harmon K, Schmidt J, Kontos A, Clugston J, Chrisman S, McCrea M, McAllister T, **Broglia SP**, Buckley T, Reliability of the King-Devick test in intercollegiate student-athletes: An NCAA/DoD Concussion Assessment, Research and Education (CARE) Report, *Journal of Athletic Training* (in press).

Clugston J, Houck Z, Asken B, Boone J, Kontos A, Buckley T, Schmidt J, Chrisman S, Hoffman N, Harmon K, Kaminski T, Collins M, McAllister T, McCrea M, **Broglia SP**, Ortega J, Relationship between the King-Devick Test and commonly used concussion tests at baseline, *Journal of Athletic Training* (in press).

Cunningham J, Wilson F, **Broglia SP**, O'Grady M, History of sports-related concussion and long-term clinical cognitive health outcomes in retired athletes; a Systematic Review, *Journal of Athletic Training* (in press).

Meier TB, Giraldo-Chica M, España LY, Mayer AR, Nencka AS, Wang Y, Koch KM, Wu YC, Harezlak J, Saykin AJ, Giza CC, Goldman J, Guskiewicz KM, Mihalik JP, Brooks A, **Broglia SP**, McAllister T, McCrea MA, Resting-state fMRI metrics in acute sport-related concussion and their association with clinical recovery: A study from the NCAA-DOD CARE Consortium, *Journal of Neurotrauma* (in press).

Buckley T, Bryk K, O'Connor KL, **Broglia SP**, East S, Zuckerman S, Kuhn A, Concussion does not adversely affect National Hockey League player performance: Advanced hockey metrics analysis, *Journal of Athletic Training* (in press).

O'Connor KL, LaPointe A, Galdys M, Dougherty L, Buckley T, **Broglia SP**, Post-concussion performance impairments no different than orthopedic injury in NHL players, *Journal of Athletic Training* (in press).

Kroshus E, Chrisman SPD, Harmon KG, Herring S, **Broglia SP**, Master CL, McGill CA, Putukian M, Register-Mihalik JK, Rivara FP, What do parents need to know about concussion? Developing consensus using the Delphi method, *Clinical Journal of Sports Medicine* (in press).

Chrisman SPD, Harmon KG, Schmidt JD, Kaminski TW, Buckley TA, Kontos AP, Clugston JR, McCrea M, McAllister TW, **Broglia SP**, Ortega J Impact of factors that affect reading skill level on King-Devick baseline performance time, *Annals of Biomedical Engineering* (in press)

Weber ML, Lynall RC, Hoffman NL, Miller EH, Kaminski TW, Buckley T, Benjamin HJ, Miles CM, Whitlow CT, Lintner L, **Broglia SP**, McCrea M, McAllister T, Schmidt JD, CARE Consortium Investigators. Health-related quality of life following concussion in collegiate student-athletes with and without concussion history. *Annals of Biomedical Engineering* (in press).

Stemper BD, Shah AS, Harezlak J, Rowson S, Rigger LD, Giza CC, DiFiori JP, Brooks A, Guskiewicz KM, Svoboda SJ, Cameron KL, Campbell D, McGinty GT, Mihalik JP, Duma SM, McAllister TW, **Broglio SP**, McCrea M, Descriptive analysis of repetitive head impact exposure in concussed American football athletes compared to position- and team-matched controls, *Medicine and Science in Sports and Exercise* (in press).

Wang Y, Nencka AS, Meier TB, Guskiewicz KM, Mihalik JP, Brooks MA, Saykin AJ, Koch KM, Wu YC, Nelson LD, McAllister TW, **Broglio SP**, McCrea MA, Cerebral blood flow in acute concussion: ASL findings from the NCAA-DoD CARE Consortium, *Brain Imaging and Behavior* (in press).

Hoffman NL, Weber ML, **Broglio SP**, McCrea M, McAllister TW, Schmidt JD, CARE Consortium Investigators, Influence of post-concussion sleep duration on concussion recovery in collegiate athletes, *Clinical Journal of Sports Medicine* (in press).

Caccese JB, DeWolf RM, Kaminski TW, **Broglio SP**, McAllister TW, McCrea M, Buckley TA, Estimated age of first exposure to American football and neurocognitive performance amongst NCAA male student-athletes: A cohort study, *Sports Medicine*, 49(3):477-487, 2019.

Garcia GG, Lavieri MS, Jiang R, McAllister TW, McCrea MA, **Broglio SP**, CARE Consortium Investigators, A data-driven approach to Unlikely, Possible, Probable, and Definite acute concussion assessment, *Journal of Neurotrauma*, 36(10):1571-1583, 2019.

Van Pelt KL, Allred CD, Cameron KL, Campbell DE, D'Lauro CJ, He X, Houston MN, Johnson BR, Kelly TF, McGinty G, Meehan SK, O'Donnell PG, Peck KY, Svoboda SJ, Pasquina P, McAllister T, McCrea M, **Broglio SP**, A cohort study to identify and evaluate concussion risk factors across multiple activities: Findings from the CARE Consortium, *Injury Epidemiology*, 6(1):1, 2019.

McGuine T, Pfaller A, Post E, Hetzel S, Brooks A, **Broglio SP**, The influence of athletic trainers on the incidence and management of concussions in high school athletes, *Journal of Athletic Training*, 53(11):1017-1024, 2018.

Broglio SP, Kontos AP, Levin H, Schneider K, Wilde EA, Cantu, RC, Feddermann-Demont N, Fuller GW, Gagnon I, Gioia GA, Giza C, Griesbach GS, Leddy JJ, Lipton ML, Mayer AR, McAllister TW, McCrea M, McKenzie L, Putukian M, Signoretti S, Suskauer SJ, Tamburro R, Turner M, Yeates KO, Zemek R, Ala'i S, Esterlitz J, Gay K, Bellgowan PSF, Joseph K, The National Institute of Neurological Disorders and Stroke and Department of Defense Sport-Related Concussion Common Data Elements Version 1.0 Recommendations, *Journal of Neurotrauma*, 35(23):2776-2783, 2018.

O'Connor KL, Allred CD, Cameron KL, Campbell DE, D'Lauro CJ, Houston MN, Johnson BR, Kelly T, McGinty G, O'Donnell PG, Peck KY, Svoboda SJ, Pasquina P, McAllister T, McCrea M, **Broglio SP**. Descriptive analysis of a baseline concussion battery among United States service academy cadets: Results from the Concussion Assessment, Research and Education (CARE) Consortium. *Military Medicine*, 183(11-12):e580-e590, 2018

Mustafi S, Harezlak J, Koch K, Nencka A, Meier T, West J, Giza C, DiFiori J, Guskiewicz K, Mihalik J, LaConte S, Duma S, **Broglia S**, Saykin A, McCrea M, McAllister T, Wu YC, Acute white-matter abnormalities in sports-related concussion: A diffusion tensor imaging study from the NCAA-DoD CARE Consortium, *Journal of Neurotrauma*, 35(22): 2653-2664, 2018.

Eckner JT, O'Connor KL, **Broglia SP**, Ashton-Miller JA, Comparison of head impact exposure in male and female high school ice hockey athletes, *American Journal of Sports Medicine*, 46(9):2253-2262, 2018.

Katz BP, Kudela MP, Harezlak J, McCrea M, McAllister T, **Broglia SP**, Baseline performance of NCAA athletes on a concussion assessment battery: A report from the CARE consortium, *Sports Medicine*, 48(8): 1971-1985, 2018.

Joseph JR, Swallow JS, Willsey K, Lapointe AP, Khalatbari S, Korley FK, Oppenlander ME, Park P, Szerlip NJ, **Broglia SP**, Elevated markers of brain injury as a result of clinically asymptomatic high-acceleration head impacts in high school football athletes, *Journal of Neurosurgery*, 3:1-7, 2018.

Martini DN, **Broglia SP**, Long-Term Effects of Sport Concussion on Cognitive and Motor Performance: A Review, *International Journal of Psychophysiology*, 132(A): 25-30, 2018 (invited).

Lapointe AP, Nolasco L, Sosnowski A, Andrews E, Martini DN, Palmeiri-Smith RM, Gates DH, **Broglia SP**, Altered kinematics during a jump cut maneuver in those with a concussion history, *International Journal of Psychophysiology*, 132(A): 93-98, 2018 (invited).

Nencka AS, MeierTB, Wang Y, Muftuler LT, Wu YC, Saykin AJ, Harezlak J, Brooks MA, Giza CC, DiFiori J, Guskiewicz KM, Mihalik JP, LaConte SM, Duma SM, **Broglia S**, McAllister TW, McCrea MA, Koch KM, Stability of MRI Metrics in the Advanced Research Core of the NCAA-DoD Concussion Assessment, Research and Education (CARE) Consortium, *Brain Imaging and Behavior*, 12(4),1121-1140, 2018.

Garcia GGP, Lavieri MS, McCrea M, McAllister T, **Broglia SP**, CARE Consortium Investigators, Quantifying the value of multidimensional assessment models for acute concussion, *Sports Medicine*, 48(7): 1739-1749, 2018.

Beckwith JG, Zhao W, Songbai J, Ajamil AG, Bolander RP, Chu JJ, McAllister TW, Crisco JJ, Duma SM, Rowson S, **Broglia SP**, Guskiewicz KM, Mihalik JP, Anderson S, Schnebel B, Brolinson PG, Collins MW, Greenwald RM, Estimated brain tissue response following impacts associated with and without diagnosed concussion, *Annals of Biomedical Engineering*, 46(6):819-830, 2018.

Weber ML, Dean JHL, Hoffman NL, **Broglia SP**, McCrea M, McAllister T, Schmidt JD, CARE Consortium Investigators. Influences of mental illness, current psychological state, and concussion history on baseline concussion assessment performance, *American Journal of Sports Medicine*, 46(7):1742-1751, 2018.

Schmidt JD, Rizzone K, Hoffman NL, Weber ML, Jones C, Bazarian J, **Broglia SP**, McCrea M, McAllister TW, CARE Consortium Investigators, Influence of developmental stage and age at first concussion on number of subsequent concussion, *Pediatric Neurology*, 81:19-24, 2018.

Asken BM, Bauer RM, Guskiewicz KM, McCrea MA, Schmidt JA, Giza CC, Snyder AR, Houck ZM, Kontos AP, McAllister TW, **Broglio SP**, Clugston JR, Immediate removal from activity after sport-related concussion associated with shorter clinical recovery and less severe symptoms in collegiate student-athletes, *American Journal of Sports Medicine*, 46(6):1465-1474, 2018.

Cunningham J, **Broglio SP**, Wilson F, The influence of playing rugby on long-term brain health following retirement; A systematic review and narrative synthesis, *British Medical Journal Open: Sport and Exercise Medicine*, 25;4(1), 1-11, 2018.

Broglio SP, Katz BP, Zhao S, McCrea M, McAllister T, CARE Consortium Investigators, Test-retest reliability and interpretation of common concussion assessment tools: Findings from the NCAA-DoD CARE Consortium, *Sports Medicine*, 48(5):1255-1268, 2018.

Rowson S, Duma SM, Stemper BD, Shah A, Mihalik JP, Harezlak J, Riggen LD, Giza CC, DiFiori J, Brooks A, Guskiewicz K, Campbell D, McGinty J, Svoboda S, Cameron K, **Broglio SP**, McAllister T, McCrea M, Correlation of concussion symptom profile with head impact biomechanics: A case for individual-specific injury tolerance, *Journal of Neurotrauma*, 35(4):681-690, 2018.

Broglio SP, Williams R, Rettmann AN, Moore B, Eckner JT, Meehan S, No seasonal changes in cognitive functioning among high school football athletes: Implementation of a novel electrophysiological measure and standard clinical measures, *Clinical Journal of Sports Medicine*, 28(2): 130-138, 2018.

Swallow, J, Joseph J, Willsey K, Lorincz M, Almeida A, Park P, Szerlip, **Broglio SP**, Online resources provide inconsistent return to play instructions following concussion, *Journal of Neurosurgery - Pediatrics*, 21(1):44-48, 2018.

Alsalaheen B, Stockdale K, Pechumer D, **Broglio SP**, Marchetti G, A comparative meta-analysis of the effects of concussion on a computerized neurocognitive test and self-reported symptoms, *Journal of Athletic Training*,52(9):834-846, 2017.

Broglio SP, Lapointe AP, O'Connor KL, McCrea M, Head impact density: A model to explain the elusive concussion threshold, *Journal of Neurotrauma*, 34(19): 2675-2683, 2017.

O'Connor KL, Peeters T, Szymanski S, **Broglio SP**, Individual impact magnitude vs cumulative magnitude for estimating concussion odds, *Annals of Biomedical Engineering*, 45(8):1985-1992, 2017.

Broglio SP, Williams R, Rettmann AN, Moore B, Meehan S, Eckner JT, Implementation of a novel neuroelectric measure for concussion diagnosis and return to play decision making, *Frontier in Neurology - Neurotrauma*, 8:252, 2017.

Alsalaheen B, Stockdale K, Pechumer D, Giessing A, He X, **Broglio SP**, Cumulative effects of concussion history on baseline neurocognitive performance: Systematic review and meta-analysis, *Sports Health: A Multidisciplinary Approach*, 9(4):324-332, 2017.

Broglia SP, McCrea M, McAllister T, Harezlak J, Katz B, Hack D, Hainline B, CARE Consortium Investigators, A national study on the effects of concussion in collegiate athletes and U.S. military service academy members: The NCAA-DoD Concussion Assessment, Research and Education (CARE) Consortium structure and methods, *Sports Medicine*, 47(7):1437-1451, 2017.

Echemendia RJ, **Broglia SP**, Davis GA, Guskiewicz KM, Hayden KA, Leddy J, Meehan W, Putukian M, Sullivan SJ, Schneider KJ, McCrory P, What tests and measures should be added to the SCAT3 and related tests to improve their reliability, sensitivity and/or specificity in sideline concussion diagnosis? A systematic review, *British Journal of Sports Medicine*, 51(11):895-901, 2017.

Echemendia RJ, Meeuwisse W, McCrory P, Davis GA, Putukian M, Leddy J, Makdissi M, Sullivan J, **Broglia SP**, Raferty M, Schneider K, Kissick J, McCrea M, Dvorak J, Sills AK, Aubry M, Engebretsen L, Lossemore M, Fuller G, Kutcher J, Ellenbogen R, Guskiewicz K, Patricios, Herring S, The Concussion Recognition Tool 5th Edition (CRT5): Background and rationale, *British Journal of Sports Medicine*, 51(11):870-871, 2017.

Echemendia RJ, Meeuwisse W, McCrory P, Davis GA, Putukian M, Leddy J, Makdissi M, Sullivan J, **Broglia SP**, Raferty M, Schneider K, Kissick J, McCrea M, Dvorak J, Sills AK, Aubry M, Engebretsen L, Lossemore M, Fuller G, Kutcher J, Ellenbogen R, Guskiewicz K, Patricios, Herring S, The Sport Concussion Assessment Tool 5th Edition (SCAT5): Background and Rationale, *British Journal of Sports Medicine*, 51(11):848-850, 2017.

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Book Chapters

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Broglia SP, Acute Evaluation and Management of Sport Concussion, in The Oxford Handbook of Sport-related Concussion, Echemendia R, Iverson GL (Eds), Oxford University Press, New York (2014).

Broglia SP, Guskiewicz KM, Management of collegiate sport-related concussions, in Concussions in Athletics: From Brain to Behavior, Slobounov SM, Sebastianelli W (Eds), Springer, Livingston, MT (2014).

Macciocchi SN, **Broglia SP**, Symptom validity assessment and sports concussion, in MTBI, symptom validity assessment and malingering, Bush S and Carone D (Eds), Springer Publishing, New York (2012).

Invited Lectures and Symposium Presentations

Background and findings of the CARE Consortium, *McMaster University*, Hamilton, ON (November 2019)

The NCAA-DoD CARE Consortium - Clinical Study Core, *National Collegiate Athletic Association Concussion Safety Advisory Group*, Indianapolis, IN (July 2019)

Concussion: From Research to Clinical Practice - The CARE Consortium, *2019 Ohio State Brain Health and Performance Summit*, Columbus, OH (June 2019).

Emerging information from the NCAA-DoD Concussion Assessment, Research and Education Consortium - Longitudinal Clinical Study Core, *Third Annual NCAA-US Department of Defense Grand Alliance Concussion Conference*, Madison, WI (April 2019).

What can you learn about concussion from 45,000 participants? Findings from the CARE Consortium, *Boston University Grand Rounds*, Boston, MA (April 2019).

Are concussions the downfall of football, *University of Michigan Saturday Morning Physics*, Ann Arbor, MI (February, 2019).

Concussion in football, *National Collegiate Athletic Association Football Data Task Force*, Indianapolis, IN (February 2019).

CARE 1.0 Outcomes and Overview of CARE 2.0, *Eastern Athletic Trainer's Association's Concussion Summit*, King of Prussia, Pennsylvania (January, 2019).

The persistent effects of concussion: What science tells us that fake news won't, *Marjorie A. King Research to Reality Presentation, Eastern Athletic Trainer's Association's Concussion Summit*, King of Prussia, Pennsylvania (January, 2019).

Findings from the CARE Consortium: A nationwide prospective investigation of sport concussion, *University of Michigan Health & Fitness Workshop*, Ann Arbor, MI (December 2018).

The Business of Science: Securing Extramural Funding, *National Athletic Trainers' Association Annual Meeting and Clinical Symposium*, New Orleans, LA (June 2018).

Advances in Sport Concussion Research: Findings from the NCAA-DoD CARE Consortium, *American College of Sports Medicine 65th Annual Meeting*, Minneapolis, MN (May 2018).

Head impact exposure in football: Can we predict concussion? *Sport Neuropsychological Society*, Washington, DC (May 2018).

Emerging information from the NCAA-DoD Concussion Assessment, Research, and Education Consortium - Longitudinal Clinical Study Core, *Second Annual NCAA-DoD Grand Alliance Concussion Conference*, West Point, NY (April 2018).

Concussion Research, *Penn State Sports Analytics Conference*, State College, PA (April 2018).

Injury and concussion rates: Pre-season, *National Collegiate Athletic Association Football Data Task Force*, Indianapolis, IN (February 2018).

Injury and concussion rates: In-season and post-season, *National Collegiate Athletic Association Football Data Task Force*, Indianapolis, IN (February 2018).

Clinical concussion recovery: The CARE Consortium clinical study core, *Royal College of Surgeons in Ireland*, Dublin, Ireland (November 2017)

Concussion in sport - what's the current state of play? What 40,000 athletes have taught us, *Science Gallery*, Dublin, Ireland (November 2017).

CARE Consortium concussion injury and return to play profiles, *University of South Carolina*, Columbia, SC (October 2017)

Persistent effects of sport concussion on motor control, part of: The long-term outcomes of sport-related brain injuries: Insights from psychophysiological research, *Society for Psychophysiological Research*, Vienna, Austria (October 2017)

Early finding from the NCAA-DoD Concussion Assessment, Research, and Education (CARE) Consortium, *New York University Concussion Center Grand Rounds*, New York, NY (September 2017).

The relationship between concussion and cognitive health, *University of Calgary*, Calgary, Canada (August 2017).

Findings from the CARE Consortium Clinical Study Core, *Big Ten-Ivy League Traumatic Brain Injury Research Collaboration*, Chicago, IL (July 2017).

Clinical Updates from the CARE Consortium, *American Academy of Neurology Sport Concussion Conference*, Jacksonville, FL (July 2017).

Long-term and cumulative effects of concussion: Where's the evidence?, *National Athletic Trainers' Association Annual Meeting and Clinical Symposium*, Houston, TX (June 2017).

Concussion Recovery: The natural history and modifiers, *National Athletic Trainers' Association Annual Meeting and Clinical Symposium*, Houston, TX (June 2017).

Concussion research: Emerging evidence from the laboratory, *On common ground: A team approach to sports medicine*, Ann Arbor, MI (June 2017)

Sideline concussion assessment, *Major League Soccer and USA Soccer - Head Injury and Concussion In Soccer; From Science to the Field*, New York, NY (May 2017)

Concussions, CTE, and the Law, *Collegiate Athletic Trainers' Society*, Las Vegas, NV (May 2017).

Does concussion change the brain, *Trinity College Dublin*, Dublin, Ireland (May 2017)

Emerging Concepts in Sport-Related Concussion: Overview and Data From the Concussion Assessment, Research, and Education (CARE) Consortium, *International Brain Injury Association's 12th World Congress on Brain Injury*, New Orleans, LA (March 2017)

The NCAA-DoD Concussion Assessment, Research and Education (CARE) Consortium: Longitudinal Clinical Study Core, *Sport-Related Concussion: A New Era of Scientific Collaboration*, Los Angeles, CA (January 2017)

Sport concussion: A brief overview, *Kalamazoo Rotary Club*, Kalamazoo, MI (December 2016).

Is the sky falling? The long term effects of concussion, *National Academy of Kinesiology*, Albuquerque, NM (October 2016).

Does concussion alter long term cognitive health? *University of California Neurotrauma Symposium*; Santa Rosa, CA (September 2016)

Should contact sports be banned: The long term risks of concussion, *Michigan Athletic Trainers' Society Clinical Symposium*, Ypsilanti, MI (June 2016).

Life after concussion, *University of Virginia 2016 Art and Science of Medicine meeting*, Charlottesville, VA (June 2016).

Repeated head impact exposure in high school football, *National Athletic Trainers' Association Annual Meeting and Clinical Symposium*, part of: The "Impact" of Head Impacts in Sport; Baltimore, MD (June 2016).

Concussion research: What are the risks of contact sports?, *Return on Investment: A Sports Medicine Approach*, Ann Arbor, MI (May 2016)

Concussion, *Gull Lake Area Rotary Club*, Kalamazoo, MI (April 2016).

When the cheering stops: The after effects of concussion, *6th Annual First Coast Sports Injury Symposium & Concussion Update*; Jacksonville, FL (April 2016).

Impact mechanics in football athletes, *6th Annual First Coast Sports Injury Symposium & Concussion Update*; Jacksonville, FL (April 2016).

Is rest best? Concussion recovery, *6th Annual First Coast Sports Injury Symposium & Concussion Update*; Jacksonville, FL (April 2016).

Just the facts mam: Sport concussion, *National Association of Social Workers - Spring Continuing Education Conference for Social Workers*; Charleston, WV (April 2016).

The soup to nuts of concussion, *National Association of Social Workers - Spring Continuing Education Conference for Social Workers*; Charleston, WV (April 2016).

Life after concussion in college sports, *South by Southwest Conferences and Festivals*; Austin, TX (March 2016).

The CARE data: What is the natural history of concussion, *International Brain Injury Association World Congress on Brain Injury*; The Hague, Netherlands (March 2016).

Does concussion have an enduring effect? *American Clinical Neurophysiology Society Annual Meeting and Courses*; Orlando, FL (February 2016).

Concussion diagnosis and management update: New data from the CARE Consortium Clinical Study Core, *NCAA Safety in College Football Summit*; Orlando, FL (February 2016).

Lasting effects of concussion, *Big Sky Athletic Training and Sports Medicine Conference*; Big Sky, MT (February 2016).

Prevention efforts and reducing the risk of concussion: Are we making progress? *Concussions in the Young Athlete VuMedi webinar* (January 2016).

Treatment options for sports-related concussion, *Arizona State University Center for Law: Safeguarding Brains: The Law, Science & Ethics of the Concussive Injury Epidemic*; Tempe, AZ (November 2015).

The NCAA Perspective on the Relationship between Head Trauma and CTE. *2015 International State-of-the-Science meeting on "Does Repeated Blast-Related Trauma Contribute to the Development of Chronic Traumatic Encephalopathy (CTE)?"*; McLean, VA (November 2015).

What is the long term risk of concussion? Fact v Fiction, *The University of Delaware Distinguished Scholars Lecture Series*; Newark, DE (November 2015).

NCAA-DoD CARE Consortium - A longitudinal investigation, *2015 International Professional Sports Concussion Research Think Tank*; London, England (October 2015).

The National Collegiate Athletic Association and Department of Defense Grand Alliance: The Concussion Assessment, Research, and Education (CARE) Consortium, *International Initiative for Traumatic Brain Injury Research (InTBIR) Meeting*; Brussels, Belgium (October 2015).

The NeuroTrauma Research Laboratory: An Overview, *University of Michigan Exercise and Sport Science Institute Symposium*; Ann Arbor, MI (September 2015).

Do concussions have a lasting effect?: What the data tell us, *Michigan State University's Department of Neurology and Ophthalmology Grand Rounds*; Lansing, MI (September 2015).

Prospective cohort research in sports mTBI, *American Academy of Neurology Sport Concussion Conference*; Denver, CO (July 2015).

The science and media of sport concussion, *Academy for Sports Dentistry*; Chicago, IL (June 2015).

Persistent effects of concussion: How concussive injury during the teen years impacts cognitive and

motor performance, *National Summit on Sports Concussion: Sports and Concussion Outcomes*; Los Angeles, CA (June 2015).

Sport concussion update, *University of Michigan All Eyes on Concussion*; Ann Arbor, MI (May 2015).

Concussion: Does the Science Support the Headlines, *National Association of Social Workers - Spring Continuing Education Conference for Social Workers*; Charleston, WV (April 2015).

Sport Concussion: The forces and vectors of injury, *Dell Children's Medical Center of Texas, Healthy Brain Foundation Annual Concussion Conference*; Austin, TX (April 2015).

Ways to reduce concussion in sports based on biomechanics, *Dell Children's Medical Center of Texas, Healthy Brain Foundation Annual Concussion Conference*; Austin, TX (April 2015).

Sports and Brain Injuries, *University of Michigan Museum of Natural History Science Café*; Ann Arbor, MI (March 2015).

The concussion problem: The NCAA's perspective, *International State-of-the-Science Meeting on the Biomedical Basis for Mild Traumatic Brain Injury (mTBI) Environmental Sensor Threshold Values*; McLean, VA (November 2014).

My Way, *University of Michigan Injury Center Research Symposium*; Ann Arbor, MI (September 2014).

Balance and concussion, *University of Nebraska Concussion Think Tank*; Lincoln, NE (September 2014).

Concussion revisited, *2014 Medicine of Cycling Conference*; Colorado Springs, CO (August 2014).

Concussion - The science behind the headlines, *Rocky Mountain University of Health Professions*; webinar (August 2014).

The fight for evidence-based sports concussion management, *University of Michigan Department of Neurology Grand Rounds*; Ann Arbor, MI (August 2014).

NCAA-DoD: Grand Alliance – Concussion assessment, research and education consortium, *Big Ten/CIC-Ivy League Traumatic Brain Injury Research Collaboration Summit*; Philadelphia, PA (July 2014).

Post-Concussive Syndrome, *American Academy of Neurology, The Sports Concussion Conference*; Chicago, IL (July 2014).

Concussion research findings: What we know about concussion's lasting effects, *University of Michigan Sport Concussion and Emergency Management Symposium*; Ann Arbor, MI (May 2014).

Sport Concussion: Biomechanics to brainwaves, *University of Washington Injury Prevention Center*; Seattle, WA (May 2014).

NATA Position Statement: Management of sport concussion, *Youth Sport Safety Summit*; Washington

DC (March 2014).

The role of balance in the concussion assessment paradigm, *Medical Professional eSeminar Series*; webinar (February 2014).

Rest, Recovery & Exercise Post Concussion, *Big Sky Athletic Training and Sports Medicine Conference*; Big Sky, MT (February 2014).

Everything I've learned about concussions, *University of Michigan 20th Annual Physical Education Workshop*; Ann Arbor, MI (December 2013 - Keynote).

Concussive and sub-concussive impacts: Implications for chronic outcomes, *University of Missouri - Kansas City*; Kansas City, MS (November 2013).

Balance assessment: From the athletic field to the battlefield, *National Intrepid Center of Excellence (NICoE)*; Bethesda, MD (October 2013).

Hard knocks: What you need to know about concussions, *Michigan Intramural - Recreational Sports Association*; Ann Arbor, MI (October 2013).

Concussion and minimal brain injury, *American Academy of Family Physicians Scientific Assembly*; San Diego, CA (September 2013).

Head impact biomechanics, *University of California at Los Angeles Sports Medicine Grand Rounds*; Los Angeles, CA (September 2013).

The kinetics and kinematics of head impacts, *University of California Neurotrauma Symposium*; Santa Barbara, CA (September 2013).

My rider has a concussion...now what?, *2013 Medicine of Cycling Conference*; Colorado Springs, CO (September 2013).

Roadside concussion assessment, *Interbike Trade Show*; Las Vegas, NV (September 2013).

Sport concussion: From bench to bedside, *National Athletic Trainers' Association Continuing Education Webinar*; webinar (September 2013).

The reliability of computerized concussion assessment tools, *Department of Defense Neurocognitive Assessment Tool Workshop*; webinar (August, 2013).

Management of sport concussion, *National Athletic Trainers' Association Annual Meeting and Clinical Symposium*; Las Vegas, NV (June 2013).

Strategies for rehabilitation and consideration for rest, *National Athletic Trainers' Association Annual Meeting and Clinical Symposium*, part of: Sport-related concussion: What more do we know today and where are we making progress?; Las Vegas, NV (June 2013).

Sport concussion in collegiate athletics, *Bowling Green State University Department of Athletics*; Bowling Green, OH (June 2013).

Football impact dynamics: Measuring hits to the head: *Brain Trauma Foundation*; webinar (June 2013).

Concussion identification and evaluation, *USA Cycling: Race Officials' Training*; webinar (May 2013).

Concussion and its chronic effects on cognitive function, *Virginia Polytechnic Institute School of Biomedical Engineering and Sciences*; Blacksburg, VA (May 2013).

Concussion biomechanics, *University of Michigan, Department of Physical Medicine and Rehabilitation Thirtieth Annual James W. Rae Scientific Day*; Ann Arbor, MI (May 2013).

Impact biomechanics: Do big and little hits have the same result?, *University of Pittsburgh Department of Orthopedic Surgery Grand Rounds*; Pittsburgh, PA (April 2013).

Concussion identification and evaluation, *USA Cycling: Race Director's Summit*; Colorado Springs, CO (April 2013).

Concussion biomechanics and their role in long term disease, *Chi Epsilon Civil Engineering Honors Society*; Ann Arbor, MI (March 2013).

Concussion management: Updating the National Athletic Trainers' Association Position Statement, *Matthew Gfeller Sport-Related Neurotrauma Symposium*; Chapel Hill, NC (March 2013).

Sport concussion: Making sense out of scrambled eggs, *University of Toledo Sports Medicine Lecture Series*; Toledo, OH (February 2013).

A concussion discussion: Questions and (some) answers, *University of Oregon Department of Human Physiology*; Eugene, OR (February 2013).

A multifaceted approach to concussion assessment, *Big Sky Athletic Training and Sports Medicine Conference*; Big Sky, MT (February 2013).

Head impacts and chronic outcomes, *University of Michigan Depression Center Colloquium Series*; Ann Arbor, MI (January 2013).

Concussion assessment tools: Evidence for use, *Medicine of Cycling Conference*; Colorado Springs, CO (August 2012).

Concussion, *University of Michigan MedSport Outreach Clinic*; Ann Arbor, MI (July 2012).

Concussion and minimal brain injury, *Pennsylvania Academy of Family Physicians*; Annapolis, MD (July 2012).

Use of the Head Impact Telemetry System to understand concussion mechanics, *National Athletic*

Trainers' Association Annual Meeting and Clinical Symposium; St. Louis, MS (June 2012).

Biomechanical aspects of concussion, Part of: *Concussions: Practical Management Strategies for Athletic Trainers; Ann Arbor, MI (May 2012).*

Everything you wanted to know about concussions in under 60 minutes, *Rocky Mountain University of Health Professions; webinar (May 2012).*

Sport concussion biomechanics, *American Medical Society for Sports Medicine; Atlanta, GA (April 2012).*

Managing risks of university athletic programs: Sport concussion, *Michigan Universities Self-Insurance Corporation; Big Rapids, MI (April 2012).*

The biomechanics of concussion, *University of Texas - Arlington Concussion Summit; Arlington, TX (March 2012).*

Concussion research in the interscholastic setting: Current issues, *University of Wisconsin - Madison Athletic Training Education Program Alumni and Friends Celebration; Madison, WI (February 2012).*

Head impact biomechanics: Concussion biomechanics, *Big Sky Athletic Training and Sports Medicine Conference; Big Sky, MT (January 2012).*

Sport Concussion: A biomechanical perspective, part of: Sports Related Head Injuries, *14th European Congress of Neurosurgery; Rome, Italy (October 2011).*

Assessing balance following concussion, *Athletic Trainers' Society of New Jersey 2nd Annual Sports Concussion Summit; Plainsboro, NJ (July 2011).*

Cognitive and motor functioning following sport related mild traumatic brain injury, *Carle Neuroscience Symposium; Urbana, IL (April 2011).*

Equipment and biomechanical considerations for concussion prevention, *International Olympic Committee World Conference on Prevention of Injury and Illness in Sport*, part of: Prevention of sport-related concussion and long-term effects of recurrent mTBI: Is research driving clinical practice?; Monaco, Monte Carlo (April 2011).

A closer look at sport concussion, *United States Youth Soccer Workshop 2011; Louisville, KY (February 2011).*

Concussion Management-Implications for Practice, *Illinois Athletic Trainers' Association Symposium; Lisle, IL (November 2010 - keynote).*

Brain trauma biomechanics: All hits are not created equal, *Southwest Athletic Trainers' Association; Arlington, TX (July 2010).*

Concussion in interscholastic football: Organizing field based research, *Carle Foundation Hospital;*

Urbana, IL (November 2009).

The sideline evaluation: A systematic approach, *National Athletic Trainers' Association Annual Meeting and Clinical Symposium*, part of: Sport-related concussion - Navigating the Latest Research Findings and Clinical Recommendations; San Antonio, TX (June 2009).

The relationship between cognitive and postural control performance with self-report concussion symptoms, *National Athletic Trainers' Association Annual Meeting and Clinical Symposium*, part of: The concussion dilemma: Are we headed in the right direction?; San Antonio, TX (June 2009).

Concussion: Transient and persistent outcomes, *National Athletic Trainers' Association Annual Meeting and Clinical Symposium*; San Antonio, TX (June 2009).

The acute and persistent effects of sport concussion, *Catholic University of Rome: Institute of Biochemistry and Clinical Biochemistry*; Rome, Italy (May 2009).

The usefulness of neuropsychological testing in monitoring long term problems, *3rd International Conference on Concussion in Sport*; Zurich, Switzerland (October 2008).

Special Interest Group: Concussion in Sport, *National Athletic Trainers' Association Annual Meeting and Clinical Symposium*; St Louis, MS (June 2008).

Stability of common computerized tests for concussion assessment, *American College of Sports Medicine*, Featured Science Session: Neuropsychological Assessment of the Concussed Athlete: Only One Piece of the Concussion Puzzle; Indianapolis, IN (May 2008).

Helmet impacts during high school football: A biomechanical assessment, *Big Ten Sports Medicine Meeting*; Chicago, IL (May 2008).

Traumatic brain injury in sport: The Unity High School concussion project, *Illinois High School Association Sports Medicine Meeting*; Bloomington, IL (April 2008).

History of concussion is associated with suppressed neuroelectric activity in young adults, *4th International Meeting on mTBI in Sports*; St Moritz, Switzerland (March 2008).

Concussion assessments: Do they measure what we think?, *4th International Meeting on mTBI in Sports*; St Moritz, Switzerland (March 2008).

Sport Related Concussion: What we know about the acute and chronic effects, *University of Montreal: Centre de Recherche En Neuropsychologie Expérimentale et Cognition*; Montreal, Canada (February 2008).

Concussion in Sport: It's a hard knock life, *Brain and Cognition Seminar*; University of Illinois at Urbana-Champaign, IL (November 2007).

Concussion in sport, *Department of Kinesiology and Community Health Exercise Physiology and Athletic Training Seminar*; University of Illinois at Urbana-Champaign, IL (October 2006).

Bicycling Mechanics, *National Athletic Trainers' Association Annual Meeting and Clinical Symposium*; Atlanta, GA (June 2006).

Concussion testing: The UGAA sport medicine approach, *Georgia Sports Medicine Symposium*; Athens, GA (June 2005).

The concussion discussion: Pre-season testing protocols and post-injury treatment, *Sports Health College and University Sports Medicine Meetings*; Portland, OR (June, 2003).

The concussion discussion: Pre-season testing protocols and post-injury treatment, *Sports Health College and University Sports Medicine Meetings*; Austin, TX (May, 2003).

RESEARCH GRANTS AND CONTRACTS

Ongoing

Broglia SP (PI), Michigan Concussion Center, *University of Michigan Biosciences Initiative*, \$5,163,408, 2018-2023.

Eckner JT, Ashton-Miller J, Peterson M, He X, **Broglia SP (Col)**, Jacobson J, How do the neck muscles influence head acceleration during sport associated impact events in high school athletes? *National Institutes of Health - National Institute of Child Health and Human Development (1R01HD093733-01A1)*, \$3,868,136, 2018-2023

Broglia SP (co-PI), Islam M, Kovelman I, Rogers A, Concussion diagnosis: Beyond "How many fingers am I holding up?" *University of Michigan Exercise and Sport Science Initiative*, \$99,938, 2018-2020.

Broglia SP (co-PI), McAllister TW, McCrea M, Pasquina P, Cumulative and persistent intermediate effects of concussion and head impact exposure in CARE Consortium Military Service Academy members and NCAA Athletes, *USA Medical Research Acquisition Activity (W81XWH-18-2-0047)*, \$9,999,999, 2018-2020.

Broglia SP (co-PI), McAllister TW, McCrea M, Pasquina P, A prospective, longitudinal study of the intermediate and cumulative effects of concussion and repetitive head impact exposure in NCAA student-athletes and U.S. Military Service Academy members, *National Collegiate Athletic Association*, \$12,499,999, 2018-2020.

Cunningham R, Maust D, Martin J, Bohnert A, Bingham C, **Broglia SP (co-I)**, Buckley L, Walton M, Resnicow K, Cranford J, Caldwell C, Tzilos G, Flannagan C, Carter P, Goldstick J, Lin L, Dahlem G, Ehrlich P, Zimmerman M, Eisman A, Heinze J, Stoddard S, University of Michigan Injury Center, *Centers for Disease Control and Prevention (R49CE002009-05S1)*, \$818,045, 2017-2019

Completed

Broglia SP (co-PI), McAllister TW, McCrea M, The National Collegiate Athletic Association - Department of Defense Grand Alliance: Concussion Assessment, Research, and Education (CARE) Consortium, *USA Medical Research Acquisition Activity (option funding)*, \$4,999,999; 2016-2018.

Broglia SP (co-PI), McAllister TW, McCrea M, The National Collegiate Athletic Association - Department of Defense Grand Alliance: Concussion Assessment, Research, and Education (CARE) Consortium, *National Collegiate Athletic Association and USA Medical Research Acquisition Activity (W81XWH-14-2-0151: 14132004)*, \$22,635,999; 2014-2018.

Eckner JT, Ashton-Miller JA, Conley RS, **Broglia SP (co-I)**, Garton H, Development and validation of a "Gold Standard" *in vivo* head impact sensor, *University of Michigan Injury Center*, \$25,000 2015-2017.

Swartz EE, **Broglia SP (co-PI)**, Prevention of head impacts in football: The HuTT technique (Phase I), *National Football League/Under Armour/GE Head Health Challenge II: Innovative Approaches For*

Identifying And Preventing Brain Injury, \$500,000; 2014-2017.

Joseph JR, **Broglia SP (Col)**, Park P, Evaluating neurocognitive impairment and serum biomarkers of mild traumatic brain injury in high-school football athletes with high acceleration head impact, *American Association of Neurological Surgeons Codman Resident NeuroTrauma Research Award*, \$40,000 2016-2017.

Broglia SP (PI), Kutcher JS, He X, The impact of concussive and sub-concussive blows on brain network activity, *The National Institutes of Health: National Institute of Neurological Disorders and Stroke* (1R15NS081691-01), \$435,212; 2012-2017.

Broglia SP (PI), The impact of concussive and sub-concussive blows on brain network activity, *The National Institutes of Health: National Institute of Neurological Disorders and Stroke* (3R15NS081691-01S1), \$74,310; 2014-2017.

Broglia SP (co-PI), Pradhan AK, Bingham R, Long-term effects of concussion on driving behaviors: A driving simulator evaluation, *University of Michigan Injury Center*, \$15,000 2015-2017.

Swartz EE, **Broglia SP (co-PI)** Prevention of head impacts in American football, *National Athletic Trainers' Association - Research and Education Foundation*, \$47,686; 2014-2016.

Broglia SP (co-PI) Pradhan AK, Bingham R, Persistent effects of concussion on driving, *University of Michigan Office of Research*, \$9,300 2015-2016.

Broglia SP (co-PI), Eckner JT, Giza CC, Guskiewicz KM, Kutcher JS, McCrea M, National sport concussion outcomes study - Phase 1: The role of equipment and head impact exposure on neurological outcomes, *National Collegiate Athletic Association*, \$399,850; 2012-2016.

Broglia SP (co-PI), Meehan SK, The effect transcranial magnetic stimulation (TMS) on neural plasticity in young adults with a concussion history, *University of Michigan Injury Center*, \$24,958; 2013-2015.

Broglia SP (PI), Hillman CH, Sosnoff JJ, Concussion across the lifespan: Persistent effects on brain, neurocognitive functioning, and motor control, *National Athletic Trainers' Association - Research and Education Foundation*, \$128,912; 2011-2014.

Broglia SP (PI), Spring/Summer Research Grants Program Application, *Rackham Graduate School, University of Michigan*, \$5045; 2014.

Broglia SP (PI), Spring/Summer Research Grants Program Application, *Rackham Graduate School, University of Michigan* (awarded 2013 - funding returned).

Kutcher JS, Eckner JT, **Broglia SP (Col)**, Stability and Effect of Concussion on Brain Network Activation Scores, contract with *ElMindA, Ltd*, \$677,521; 2011-2013.

Eckner JT, Kutcher JS, **Broglia SP (Col)**, Ashton-Miller JA, A Novel Assessment of Head Impact Biomechanics in Female Athletes, *Women's Sports, Health and Activity Research and Policy (SHARP) Center*, \$15,000; 2011-2012.

Broglia SP (PI), Imaging the concussed mind: A look at the long term effects of concussion, *Beckman Institute for Advanced Science and Technology*, \$8,000; 2011.

Broglia SP (PI), Graduate Assistant support for the Activities and Recreation Center (ARC) Wellness Center, contract with *Carle Foundation Hospital - Division of Sports Medicine*, \$62,683; 2010-2012.

Broglia SP (PI), Head Impact Telemetry Alert Beta Testing, contract with *Simbex LLC*, \$49,998; 2010.

Broglia SP (PI), McAuley E, Kramer A, Cohen NJ, Sutton B, He X, Concussion across the lifespan: A multi-disciplinary assessment of cognitive health, *University of Illinois Health and Wellness Initiative*, \$49,820; 2010-2011.

Broglia SP (PI), Hillman CH, McAuley E, Mild traumatic brain injury and cognitive health across the lifespan, *University of Illinois at Urbana-Champaign Research Board*, \$12,650; 2009-2012.

Broglia SP (PI), Vagnozzi R with Tavazzi B, Lazzarino G, Mild Traumatic Brain Injury: Revealing the 'Silent Epidemic,' *William and Flora Hewlett International Research Grants*, \$3000; 2009.

Ferrara MS, Cooper ER, Powell JW, Casa DJ, **Broglia SP (Col)**, Monitoring exertional heat illnesses in interscholastic Georgia football, *National Athletic Trainers' Association - Research and Education Foundation*, \$109,006; 2009 - 2011 .

Woods JA, **Broglia SP (Col)**, Kelley KW, Dantzer R, Effects of mild traumatic brain injury (mTBI) on neuroinflammation, cognition, and depression, *The Mary Jane Neer Research Fund for Research in Disability*, \$14,902; 2007 - 2008.

Broglia SP (PI), Ebersole KT, Rosengren KS, Reliability of postural control assessments, *Great Lakes Athletic Trainers' Association*, \$1200; 2007.

Ferrara MS, Cooper ER, **Broglia SP (Col)**, Powell JW, Casa DJ, Monitoring environmental conditions and injury rates of fall sports, *National Collegiate Athletic Association Committee on Competitive Safeguards and Medical Aspects of Sports*, \$23,144; 2007.

Broglia SP (PI), Hillman CH, Association between recurrent concussion and chronic changes in cognitive and neuroelectric indices, *University of Illinois at Urbana-Champaign Research Board*, \$9,175; 2007 - 2008.

Hillman CH, **Broglia SP (Col)**, Clinical and Neuroelectric Indices of Multiple Concussions, *The Mary Jane Neer Research Fund for Research in Disability*, \$15,000; 2007 - 2008.

Broglia SP (PI), Ostoja-Starzewski M, Sutton B, Finite Element Modeling of Brain Deformation from Rapid MRI, *The Mary Jane Neer Research Fund for Research in Disability*, \$14,400; 2006 - 2007.

Ferrara MS, Cooper ER, **Broglia SP (Col)**, Monitoring environmental conditions and injury rates of selected fall sports at NCAA Division III institutions, *National Collegiate Athletic Association Committee (NCAA) on Competitive Safeguards and Medical Aspects of Sports*, \$28,996; 2006.

Ferrara MS, Cooper ER, **Broglia SP (Col)**, Monitoring environmental conditions and injury rates of selected fall sports at NCAA Division III institutions, *National Collegiate Athletic Association (NCAA) Committee on Competitive Safeguards and Medical Aspects of Sports*, \$30,947; 2005.

Broglia SP (PI), The reliability and specificity of computer-based concussion assessment protocols, *Louise E. Kindig Research Award, Department of Kinesiology, University of Georgia*, \$1,000; 2005 - 2006.

Broglia SP (PI), *Dissertation Completion Assistantship*, University of Georgia Graduate School, \$16,767; 2005 - 2006.

Ferrara MS, Cooper ER, **Broglia SP (Col)**, Monitoring environmental conditions and injury rates of selected fall sports at NCAA Division III institutions, *National Collegiate Athletic Association (NCAA) Committee on Competitive Safeguards and Medical Aspects of Sports*, \$49,500; 2004.

Piland SG, **Broglia SP (Col)**, Ferrara MS, Investigation of Non-concussed group responses on a measure of self-reported concussion-related symptoms, *Southeast Athletic Trainers' Association Research Grant*, \$750; 2002.

Ferrara MS, Cooper ER, **Broglia SP**, Courson RW, Monitoring environmental conditions at southeastern universities, *National Athletic Trainers' Association - Research and Education Foundation*, \$7,140; 2003.

Broglia SP (PI), Ju YY, Broglia MD, Sell TC, The efficacy of soccer headgear, *National Athletic Trainers' Association - Research and Education Foundation, Osternig Masters Grant*, \$1,000; 2001 - 2002.

Broglia SP (PI), Guskiewicz, KM, Sell, TC, Lephart, SM, The acute effect of rotational heading on measures of postural stability, *Orthopaedic Research Laboratory Alumni Council: Mrs. Ho-Tung Cheong Research Grant*, \$3,000; 2001 - 2002.

SERVICE

Professional Service

Journals

Journal of Athletic Training

Associate Editor, 2015 to present

Guest Editor, Special Edition on *Concussion in Sport*, 2015 to 2017

Editorial Board, 2009 to 2015

Concussion

Editorial Board, 2014 to present

Athletic Training & Sports Health Care

Editorial Board, 2008 to present

British Journal of Sports Medicine

Editorial Board, 2008 to 2019

Journal ad-hoc Reviewer

• *American Journal of Sports Medicine* • *Annals of Biomedical Engineering* • *Applied Neuropsychology: Child* • *Archives of Clinical Neuropsychology* • *Archives of Physical Medicine and Rehabilitation* • *Biology of Sport* • *BMC Sports Science, Medicine, & Rehabilitation* • *Brain* • *Brain Injury* • *British Journal of Sports Medicine* • *British Medical Journal* • *Clinical Journal of Sports Medicine* • *Child Neuropsychology* • *Clinical Neurology and Neurosurgery* • *Concussion* • *Developmental Neuropsychology* • *Experimental Brain Research* • *International Journal of Exercise Science* • *JAMA Pediatrics* • *International Journal of Sports Medicine* • *Journal of ASTM International* • *Journal of Adolescent Health* • *Journal of Athletic Training* • *Journal of Biomechanical Engineering* • *Journal of Biomechanics* • *Journal of Clinical and Experimental Neuropsychology* • *Journal of Exercise Science* • *Journal of Motor Behavior* • *Journal of Neurological Sciences* • *Journal of Neurotrauma* • *Journal of Science and Medicine in Sport* • *Journal of Sport and Health Science* • *Journal of Sport Science and Medicine* • *Journal of Sport Rehabilitation* • *Medical Principles and Practice* • *Medicine and Science in Sport and Exercise* • *Neurocase* • *Neuropsychology* • *Neuropsychology Review* • *Neuroscience Letters* • *Neurosurgery* • *New England Journal of Medicine* • *Plos One* • *Research in Sports Medicine* • *Sports Health: A Multidisciplinary Approach* • *The Physician and Sports Medicine*

Funding Agencies

National Athletic Trainers' Association Foundation

Research Grants Committee

Vice Chair for General Grants, 2014 to present

Committee member, 2011 to 2014

Ad hoc reviewer, 2008 to 2011

National Institutes of Health:

Small Business: Clinical Neurophysiology, Devices, Neuroprosthetics, and Biosensors (10 ZRG1 ETTN-C (10) B) Review Panel, 2015, 2016

Challenge Grant (RFA-OD-09-003) Special Panel/Scientific Review Group

(ZRG1BDCN-T(58)R), 2009
University of Michigan Pediatric Device Consortium, 2015
Neurological Foundation of New Zealand, 2015
University of North Carolina Research Opportunities Initiative, 2014
Canadian Foundation for Innovation, 2013
Medical College of Wisconsin, Injury Research Center, 2013
University of Nebraska, Experimental Program to Stimulate Competitive Research (EPSCoR), 2013
Natural Sciences and Engineering Research Council of Canada, Research Partnership Program, 2012, 2013
U.S. Army Medical Research & Materiel Command-Military Operational Medicine Research Program (USAMRMC-MOMRP), Physiological Health/Traumatic Brain Injury Portfolio, 2011, 2019
Hewlett International Research Travel Grants, 2010

Conferences

North American Brain Injury Society
Scientific Committee, Houston, TX 2018
National Athletic Trainers' Association Foundation
Free Communications Committee, 2013 to 2018
Symposium Moderator 2001, 2006 to 2011
University of Michigan Injury Center Sports Concussion Summit
Conference Director, Ann Arbor, MI, 2015, 2019
Think Tank Conference on Sport Concussion,
Co-organizer, Lincoln, NE, 2014
American Academy of Neurology - The Sports Concussion Conference
Scientific Committee, Chicago, IL, 2014
Medicine of Cycling Annual Meeting
Faculty and Organization Committee, Colorado Springs, CO, 2013, 2014, 2016, 2017
International Consensus Conference on Concussion in Sport
Consensus Panelist, 2008 (Zurich), 2016 (Berlin), 2020 (Paris)
International Meeting on mTBI in Sports
Faculty and Organization Committee 4th, St Moritz, Switzerland, 2008.

Committees

American Academy of Neurology
Concussion Quality Measurement Working Group, 2018 to present
Medicine of Cycling
Director of Research, 2015 to 2018
Concussion Task Force, Concussion in Cycling Consensus Statement, 2012
National Collegiate Athletic Association
Concussion Safety Advisory Group, 2019 to present
National Institutes of Health
International Traumatic Brain Injury (TBI) CDE Steering Committee, National Institute of Neurological Disorders and Stroke (NINDS), 2017 to present
Chair, Acute Sport Concussion Common Data Elements, National Institute of

Neurological Disorders and Stroke (NINDS), 2016 to 2017
Co-chair, Pediatric Concussion Workshop, National Institute of Neurological Disorders and Stroke (NINDS), National Institute on Drug Abuse (NIDA), National Center for Medical Rehabilitation Research (NCMRR), and Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), 2016

Working Group, National Institute of Neurological Disorders and Stroke - Clinical Data Interchange Standards Consortium (NINDS-CDISC) Food and Drug Administration (FDA) Traumatic Brain Injury Standards, 2014 to 2015

USA Cycling

Safety Committee, 2016 to present

Consulting

US Soccer, 2019 to present

Federal Trade Commission, 2012 to 2013

Department of Defense Concussion Definition Consortium, External Reviewer, 2012

Sportsconcussions.org, Advisory Board, Seattle, WA, 2009 to 2011

AthletiCo Sports Medicine and Rehabilitation Clinic, Chicago, IL, 2006 to 2011

University Service

University of Michigan

Biological Science Scholars Program, Search Committee, 2018 to present

University of Michigan Injury Prevention Center, Internal Advisory Committee, 2016 to present

MiWorkspace Advisory Committee, 2015 to present

University Senate Assembly, 2014 to 2017

School / College Service

University of Michigan: School of Kinesiology

Executive Committee, 2018 to present

Graduate Committee, 2013 to 2016

Search Committees

Athletic Training, 2018 to 2019

Neuroscience faculty (co-chair), 2016 to 2017

Dean, 2015

Design Working Group - Classroom Space, 2014 to 2015

Health and Fitness Curriculum Committee, 2011 to 2013

University of Illinois at Urbana-Champaign: College of Applied Health Sciences

Elections and Credentials Committee, 2009 to 2011

Research Computing Task Force, 2009 to 2011

Departmental Service

University of Illinois at Urbana-Champaign

Committee on Course Fees, 2009

Graduate Travel Grant Committee, 2009 to 2011

Elections and Credentials Committee, 2009 to 2011

Athletic Training Faculty Search Committee (co-chair), 2008
Global Campus Committee, 2008
Education Policy Committee, 2007 to 2010
Committee on Wellness, 2007 to 2008

PROFESSIONAL ORGANIZATIONS

American College of Sports Medicine, member #640343, 2007 to present
National Athletic Trainers' Association, member # 977340, 1997 to present
Great Lakes Athletic Trainers' Association, 2006 to present
Southeast Athletic Trainers' Association, 2002 to 2006
Eastern Athletic Trainers' Association, 2000 to 2002
Mid-Atlantic Athletic Trainers' Association, 1997 to 2000

CERTIFICATIONS

National Athletic Trainers' Association Board of Certification, Inc.
Athletic Trainer, Certified # 060002015, 2000 to present
National Athletic Trainers' Association
Certified Clinical Instructor Educator, 2004 to 2011
Approved Clinical Instructor, 2003 to 2011
American Red Cross
CPR/AED for the Professional Rescuer

LICENSURE

Michigan, Department of Licensing and Regulatory Affairs, 2601001220, 2011 to present
Illinois, Department of Financial and Professional Regulation, 96.002310, 2006 to 2012

HONORS AND AWARDS

- 2019 University of Georgia, Department of Kinesiology, Distinguished Alumni
- 2018 Kenneth L. Knight Award for the Outstanding Research Manuscript, *Journal of Athletic Training* for: McGuine T, Pfaller A, Post E, Hetzel S, Brooks A, **Broglio SP**, The impact of athletic trainers on the incidence and management of concussions in high school athletes, *Journal of Athletic Training*, 53(11):1017-1024, 2018.
- 2019 Majorie A. King Research to Reality Lecture, Eastern Athletic Trainers' Association 71st Conference.
- 2017 Fellow of the National Athletic Trainers' Association.
- 2016 Kenneth L. Knight Award for the Outstanding Research Manuscript, *Journal of Athletic Training*, 2016, for: **Broglio SP**, Williams RM, O'Connor KL, Goldstick J, Football head impact exposure after limiting full-contact practices, *Journal of Athletic Training*, 51(7):511-518, 2016.
- 2015 Early Career Award for Important Contributions to the Field of Brain Injury Science, International Brain Injury Association.
- 2014 Outstanding Early Career in Injury Research Award, University of Michigan Injury Center.
- 2014 Fellow of the American College of Sports Medicine.
- 2010 Freddie H. Fu New Investigator Award, National Athletic Trainers' Association

Research and Education Foundation.

- 2009 Kenneth L. Knight Award for the Outstanding Research Manuscript, *Journal of Athletic Training* for: **Broglia SP**, Sosnoff JJ, Sunghoon S, He X, Alcaraz C, Zimmerman J, Helmet impacts during high school football: A biomechanical assessment, *Journal of Athletic Training*, 44(4):342–349, 2009.
- 2009 Association Media and Publishing Annual EXCEL Awards Bronze Medalist, **Broglia SP**, Sosnoff JJ, Sunghoon S, He X, Alcaraz C, Zimmerman J, Helmet impacts during high school football: A biomechanical assessment, *Journal of Athletic Training*, 44(4):342–349, 2009.
- 2009 Phillis J. Hill James Scholar Faculty Award for Exemplary Mentoring University of Illinois.
- 2005 Outstanding Teaching Assistant Award, University of Georgia.
- 2005 Graduate Student Scholarship, Southeast Athletic Trainers' Association.
- 2003 Oral Presentation Competition Winner - Master's Student Research, "The efficacy of soccer headgear," National Athletic Trainers' Association Research and Education Foundation.
- 2003 Doctoral Student Scholarship, NATA-Research and Education Foundation.
- 2003 Graduate Student Scholarship, Georgia Athletic Trainers' Association.
- 2001 Jerry Rhea Sports Medicine Scholarship, Atlanta Falcons.
- 2000 Highest Honors graduate, Department of Exercise and Sport Science, University of North Carolina.
- 2000 Highest Distinction graduate, College of Arts and Science, University of North Carolina.
- 2000 Max Crowder Award, Atlantic Coast Conference.
- 2000 William Tessendorf Scholarship, National Athletic Trainers' Association Research and Education Foundation.
- 1999 Phi Beta Kappa.
- 1999 National Society of Collegiate Scholars
- 1999 Donald Fauls Memorial Scholarship, National Athletic Trainers' Association Research and Education Foundation
- 1998 Golden Key National Honor Society, University of North Carolina at Chapel Hill.

updated: May 19, 2019