MIND, BODY AND SPIRIT...
TREATING THE ENTIRE ATHLETE:
An evidence-based approach to sports medicine and concussion prevention

2019 SPORT CONCUSSION SUMMIT

MAY 31, 2019
Registration Desk
If you need any assistance during the event, please visit the registration desk. A staff member will be stationed there throughout the event.

Questions & Answers
All questions will be answered during the morning and afternoon speaker panels. Due to time constraints, please hold all questions until then. If you have a question, please write it on one of the notecards available in the middle of your table. A staff member will be around to pick up all notecards prior to each panel session.

Conference Evaluation
A brief follow-up evaluation survey will be emailed to all attendees. Please complete your evaluation as feedback will improve future U-M Injury Prevention Center and Michigan Concussion Center events.

Continuing Education Credits
If you are claiming continuing education credits for your attendance at the summit (day 1 and/or day 2), please review pages 14-15 of the program.

Photography
A photographer will be present at the conference. Photos may be used to populate the U-M Injury Prevention Center and Michigan Concussion Center website, accompany post-event press releases, and in selected print publications.

If you do not want your photo included in any materials, print or online, please speak with staff at the registration desk.

Stadium Tour
A free tour of the University of Michigan football stadium will proceed closing remarks of the Summit. If you are interested, please proceed to the atrium following the event.

Presentations
All speaker presentations are being recorded and will be made available online after the Summit. A follow-up email will be sent to all attendees once they are available. Please note: speaker slides will not be made available to attendees.

SEE BACK COVER FOR SCHEDULE AT A GLANCE.
Thank you for joining us at the 2019 University of Michigan Sport Concussion Summit bringing together speakers from across the U.S. to discuss the latest in concussion research.

Seven sport and recreation-related concussions are estimated to occur every minute in the United States, making it a hot topic of conversation in science and media outlets. Those discussions have resulted in a positive change in how concussions are identified and managed, but have also introduced significant misinformation. The internationally recognized group of researchers and clinicians speaking today will present the most up-to-date findings related to this highly misunderstood injury.

The entire day has been designed for attendees with an interest in the scientific aspects of sport concussion prevention and will start off with opening remarks from Dr. Roger Cone (Director and Research Professor of the University of Michigan Life Sciences Institute), followed by six talks ranging from concussion pathophysiology to concussion assessment in collegiate and youth athletes. During the lunch hour, Dr. Julian Bailes (Chairman, Department of Neurosurgery, Northshore University HealthSystem) will deliver a keynote address on his experience with the first modern Chronic Traumatic Encephalopathy (CTE) case. The afternoon session will broaden our knowledge on advanced imaging, injury prevention, rehabilitation, legal aspects, and the media’s perspective of the injury.

Recording for future viewing will be going on throughout the day, so that you can reach back and revisit today’s conversation. While you’re here, we encourage you to share ideas, make connections, and ask questions to get the most out of the event. Want to follow the conversation on Twitter or share important ideas and pictures from presentations you’ve seen today? Please use the hashtag #UMConcussion.

Today’s event would not be possible without the strong support of our sponsors: The Michigan Concussion Center, University of Michigan Injury Prevention Center, Michigan Athletics, MedSport, and University of Michigan Medical School.

We hope you will find this event to be both informative and thought provoking.

Thank you!

Steven Broglio, PhD
Director, Michigan Concussion Center

Rebecca Cunningham, MD
Director, U-M Injury Prevention Center

#UMConcussion
SUMMIT AGENDA

Mind, Body and Spirit... Treating the Entire Athlete: An evidence-based approach to sports medicine and concussion prevention

DAY 2—Friday, May 31, 2019
Sport Concussion Summit: From Research to Practice

7:30–8:00 am  Continental Breakfast & Networking

8:00–8:15 am  Welcome & Opening Remarks
Rebecca Cunningham, MD; Interim Vice President, Research, University of Michigan Office of Research; Director, U-M Injury Prevention Center; Professor, Emergency Medicine, U-M; Professor, Health Behavior & Health Education, School of Public Health, U-M
Steven Broglio, PhD; Director, Michigan Concussion Center; Director, NeuroTrauma Research Laboratory; Concussion Content Lead, U-M Injury Prevention Center
Roger Cone, PhD; Vice Provost and Director, University of Michigan Biosciences Initiative; Mary Sue Coleman Director & Research Professor, U-M Life Sciences Institute; Professor, Department of Molecular & Integrative Physiology, U-M Medical School; Professor, Molecular, Cellular, and Developmental Biology, LSA

MORNING SESSION  (8:15–11:50 am)

8:15–8:45 am  Concussion Pathophysiology
Christopher Giza, MD; Director, Steve Tisch BrainSPORT Program & Operation Mend mild TBI Program; Professor, Pediatric Neurology & Neurosurgery, University of California–Los Angeles Mattel Children's Hospital

8:45–9:15 am  Concussion Epidemiology
Zachary Kerr, PhD, MPH; Research Director, Center for the Study of Retired Athletes; Assistant Professor, Department of Exercise and Sport Science, University of North Carolina at Chapel Hill

9:15–9:45 am  Methods and Findings of the Ivy League-Big Ten Epidemiology of Concussion Study
Douglas Wiebe, PhD; Director, Penn Injury Science Center; Professor, Department of Biostatistics, Epidemiology and Informatics, Perelman School of Medicine, University of Pennsylvania

9:45–10:00 am  Break

10:00–10:30 am  Head Trauma and Brain Injury
T. Blaine Hoshizaki, PhD; Director, Neurotrauma Impact Science Laboratory, University of Ottawa

10:30–11:00 am  Application of the SCAT5 on the Sideline and in the Clinic
Scott Anderson, ATC; Head Athletic Trainer, University of Oklahoma

11:00–11:30 am  Application of the Centers for Disease Control and Prevention Guidelines for Pediatric Concussion
Matthew Breiding, PhD; Traumatic Brain Injury Team Lead, Division of Unintentional Injury Prevention, Centers for Disease Control and Prevention
11:30–11:50 am  **Roundtable with Morning Speakers** (20 minutes)  
Moderator: Matthew Lorincz, MD, PhD; Associate Professor, University of Michigan; Co-Director, Michigan NeuroSport; Clinical Core Director, Michigan Concussion Center

**LUNCH** (12:00–1:00 pm)

12:20–12:50 pm  **Keynote Speaker: Evolution of Clinical Science and Current Perspective of Neurodegenerative Disease from Sports Participation**  
Julian E. Bailes, Jr., MD; Chairman, Department of Neurosurgery, NorthShore University HealthSystem; Co-Director, NorthShore Neurological Institute; Clinical Professor, Neurosurgery, University of Chicago Pritzker School of Medicine

**AFTERNOON SESSION** (1:00–4:35 pm)

1:00–1:30 pm  **Imaging and Biomarkers: The Future of Concussion Diagnostics**  
Jeffrey Bazarian, MD, MPH; Director, Traumatic Brain Injury Laboratory, University of Rochester

1:30–2:00 pm  **What We Know and What We Think We Know About Chronic Traumatic Encephalopathy (CTE)**  
Gary Solomon, PhD, FACP; Co-Director, Vanderbilt Sports Concussion Center; Professor, Neurological Surgery and Orthopaedic Surgery & Rehabilitation; Associate Professor, Psychiatry & Behavioral Sciences, Vanderbilt University Medical Center

2:00–2:30 pm  **Unresolved Science and Law of Concussion and CTE**  
Steve Pachman, Esq; Partner, Montgomery McCracken Walker & Rhoads LLP  
Dylan F. Henry, Associate, Montgomery McCracken Walker & Rhoads LLP

2:30–2:45 pm  Break

2:45–3:15 pm  **Concussion Prevention**  
Erik Swartz, PhD, ATC, FNATA; Chair, Department of Physical Therapy and Kinesiology, University of Massachusetts at Lowell

3:15–3:45 pm  **Concussion Rehabilitation**  
Karen McCulloch, PT, PhD, MS, NCS; Board Certified Clinical Specialist in Neurologic Physical Therapy Division of Physical Therapy, Department of Allied Health Sciences, University of North Carolina at Chapel Hill School of Medicine

3:45–4:15 pm  **How the Media Covers Concussions and CTE**  
Anders Kelto; Knight-Wallace Fellow, University of Michigan

4:15–4:35 pm  **Roundtable with Afternoon Speakers** (20 minutes)  
Moderator: J.T. Eckner, MD; Associate Professor, Department of Physical Medicine & Rehabilitation, University of Michigan; Director, Clinical Research, Michigan NeuroSport & PM&R Concussion Programs; Director, PM&R Resident Research Program

4:35–4:45 pm  **Closing Remarks**  
Steven Broglio, PhD; Director, Michigan Concussion Center; Director, NeuroTrauma Research Laboratory
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SPEAKERS

OPENING AND CLOSING SPEAKERS

Rebecca Cunningham, MD
Interim Vice President, Research, University of Michigan Office of Research; Director, U-M Injury Prevention Center; Professor, Emergency Medicine, U-M; Professor, Health Behavior & Health Education, School of Public Health, U-M

Dr. Cunningham is a Professor in the University of Michigan department of Emergency Medicine, Interim Vice President for Research, U-M Office of Research, Director of the CDC-funded U-M Injury Prevention Center, and a Professor in the department of Health Behavior and Health Education at the U-M School of Public Health. In directing the Injury Prevention Center, Dr. Cunningham conceptualizes, oversees, and guides the short and long-term missions of the Injury Prevention Center.

Steven Broglio, PhD
Director, Michigan Concussion Center; Director, NeuroTrauma Research Laboratory; Concussion Content Lead, U-M Injury Prevention Center

Dr. Broglio is a Professor of Kinesiology and adjunct Associate Professor of Neurology and Physical Medicine and Rehabilitation at the University of Michigan in Ann Arbor. Dr. Broglio is also the Concussion Content Lead for the U-M Injury Prevention Center. He has been at U-M since 2011, and is currently the Director of the Michigan Concussion Center and the NeuroTrauma Research Laboratory where he oversees clinical care, educational outreach, and multi-disciplinary research aimed at fundamental questions on concussion prevention, identification, diagnosis, management, and outcomes. His research has been supported by the National Athletic Trainers’ Research and Education Foundation, the National Institutes of Health, the National Collegiate Athletic Association, and the Department of Defense. Dr. Broglio was awarded the Early Career Investigator Award by the International Brain Injury Association, the Early Career award by the National Athletic Trainers’ Association, and Fellowship in the American College of Sports Medicine and National Athletic Trainers’ Association.

Roger Cone, PhD
Vice Provost and Director, University of Michigan Biosciences Initiative; Mary Sue Coleman Director & Research Professor, U-M Life Sciences Institute; Professor, Department of Molecular & Integrative Physiology, U-M Medical School; Professor, Molecular, Cellular, and Developmental Biology, LSA

Dr. Cone joined the University of Michigan in 2016 as the Director of the Life Sciences Institute, and was appointed Vice Provost and Director of the Biosciences Initiative in 2017. The Cone lab works on the central control of energy homeostasis, concentrating on the melanocortin system, a complex set of neural circuits demonstrated to regulate a variety of physiological processes important to energy homeostasis. Dr. Cone has received international recognition for this work, including the Ernst Oppenheimer Award (U.S. Endocrine Society), the Berthold Memorial Award (German Endocrine Society), the Freedom to Discover Award for Distinguished Achievement in Metabolic Diseases Research from Bristol-Myers Squibb, the Ipsen Prize, the Berson Award from the American Physiological Society, and election to the U.S. National Academy of Sciences in 2010, the National Academy of Medicine in 2016, and the American Academy of Arts and Sciences in 2018. Dr. Cone also served Vanderbilt as Director of the Institute for Obesity and Metabolism, Associate Director of the Diabetes Research and Training Center, and as Faculty Head of Murray House, living in residence with 150 of the school’s freshmen class.
Scott Anderson, ATC
Head Athletic Trainer, University of Oklahoma
Since 1996, Scott Anderson has been the Head Athletic Trainer at the University of Oklahoma. He previously held a similar position at Tulane University. He is currently President of the College Athletic Trainers Society, the Big 12 Conference representative to the NCAA Concussion Safety Committee, a member of the NCAA Concussion Advisory Group, and a member of the Operating Committee–NCAA/DOD Grand Alliance CARE Consortium. Prior service includes: Co-Director, Summit on Safety in College Football, 2014 and 2016; Member, NCAA Concussion Task Force, 2014; Member, Inter-Association Task Force on Safety in Football: Off-Season Conditioning, 2012; Co-Chair, National Athletic Trainers’ Association Inter-Association Task Force on Sickle Cell Trait in Athletes, 2007; Member, Inter-Association Task Force on Exertional Heat Illness, 2003; and Chair, Big 12 Conference Medical Aspects of Sport Committee, 1999-2002. Recognitions include: College/University–Athletic Trainer of the Year, 2006; All-American Football Foundation, Inc.–Outstanding Athletic Trainer, 2005; Big 12 Conference Athletic Training Staff of the Year, 2000-2001; Oklahoma Athletic Trainers Association Hall of Fame; and Korey Stringer Institute Lifesaving Research Award, 2018.

KEYNOTE SPEAKER

Julian E. Bailes, Jr., MD
Chairman, Department of Neurosurgery, NorthShore University HealthSystem; Co-Director, NorthShore Neurological Institute; Clinical Professor, Neurosurgery, University of Chicago Pritzker School of Medicine

Dr. Bailes is a recognized leader in the field of neurosurgery and the impact of brain injury on brain function. He is the Chairman of the AANS/CNS Joint Section on Neurotrauma and Critical Care. He has been instrumental in the understanding of the clinical evidence of chronic traumatic encephalopathy (CTE), a progressive degenerative disease found in individuals who have been subjected to multiple concussions and other forms of head injury. His laboratory has focused upon mechanisms and treatment of cerebral trauma. Since 1994, he has been a neurological consultant to the NFL Players’ Association (NFLPA), which has supported research on the effects of head injuries on professional athletes, and currently is on the NFL Head, Neck, and Spine Committee and NFLPA Mackey White Health and Safety Committee. He is the Medical Director of the Center for Study of Retired Athletes based at the University of North Carolina, Chapel Hill. He has been an advisor to the NCAA and also is Chairman of the Medical Advisory Committee for Pop Warner Football, the largest youth sports association in the U.S. In 2010, he was inducted into the Louisiana State University Hall of Distinction, the highest honor awarded to an alumnus. In 2016, he was inducted to the Louisiana Sports Hall of Fame and received the Dave Dixon Louisiana Sports Leadership Award. In 2017, he was named by the Public Broadcasting System as a Louisiana Legend. In 2018, he received the Career Achievement Award from the National Headache Foundation and the Golden Football Award for service to youth sports by Pop Warner Little Scholars, Inc.

Since 2011, Dr. Bailes has been the Chairman of the Department of Neurosurgery, Co-Director of the NorthShore Neurological Institute, and Clinical Professor of Neurosurgery at the University of Chicago Pritzker School of Medicine. Previously, he was Chief of Cerebrovascular Surgery at Allegheny-West Penn Hospital System for ten years, followed by eleven years as the Professor and Chairman of the Department of Neurosurgery at West Virginia University School of Medicine. He has more than 300 scientific publications concerning various aspects of neurological surgery, including five books on neurological sports medicine, and performs editorial duties for a number of medical journals. He has been honored as one of the nation’s best surgeons for ten consecutive years in U.S. News & World Report’s “America’s Best Doctors” and was selected by Chicago Magazine as a Chicago top neurosurgeon, from 2014-2018.

Dr. Bailes was an Louisiana All-Star and All-State high school football player. He has been a sideline physician at either the NFL or NCAA level for the last 25 years. As a recognized leader in understanding the impact of brain injury on brain function, his research has been depicted in the film Concussion.
Jeffrey Bazarian, MD, MPH
Director, Traumatic Brain Injury Laboratory, University of Rochester

Dr. Bazarian has been actively involved in concussion research since 1997. He has served as the lead investigator on projects to determine concussion epidemiology and outcome (K23 from NINDS), to use advanced MRI techniques to image axonal injury acutely after concussion (R01 from NICHD), to determine the role of the astrocyte protein S100B in the diagnosis of intracranial hemorrhage after concussion (New York State Department of Health), and to validate new serum protein markers of axonal injury after sports-related concussion (K24 NICHD).

More recently he and his research team have focused on brain injury resulting from sub-concussive head blows and their links to neurodegenerative disorders such as chronic traumatic encephalopathy. Dr. Bazarian is board certified in Internal Medicine and Emergency Medicine but practiced Emergency Medicine exclusively from 1990 until 2012. In 2010, he joined the University of Rochester Sports Concussion Clinic, providing outpatient concussion care to area high and collegiate athletes. He has served on several TBI-related task forces and panels for the Centers for Disease Control and Prevention, the National Institutes of Health, the National Science Foundation, and the Institute of Medicine.

Matthew Breiding, PhD
Traumatic Brain Injury Team Lead, Division of Unintentional Injury Prevention, Centers for Disease Control and Prevention

Dr. Breiding joined the U.S. Public Health Service in 2005, first serving as an Epidemic Intelligence Service officer in the Division of Violence Prevention at CDC. His work focused primarily on the public health surveillance of intimate partner violence, sexual violence, and child maltreatment. He contributed to the development and implementation of CDC’s National Intimate Partner and Sexual Violence Survey. In 2014, he moved to CDC’s Division of Unintentional Injury Prevention where he serves as the Traumatic Brain Injury Team Lead. In this capacity he has worked with the team to develop the National Concussion Surveillance System and CDC’s Pediatric Mild TBI Guideline.

Christopher Giza, MD
Director, Steve Tisch BrainSPORT Program & Operation Mend mild TBI Program; Professor, Pediatric Neurology & Neurosurgery, University of California–Los Angeles Mattel Children’s Hospital

Dr. Giza directs the UCLA Steve Tisch BrainSPORT program & the Operation Mend mild TBI program, and is a Professor of Pediatric Neurology & Neurosurgery at the UCLA Mattel Children’s Hospital. Previously, he worked on the Yosemite Search and Rescue team before joining the UCLA Brain Injury Research Center in 1998. He served on the California State Athletic Commission from 2005-2015, and traveled to Afghanistan in 2011 as a civilian advisor to the Department of Defense. Dr. Giza co-authored concussion/mild TBI guidelines for the AAN, CDC (for youth) and the Concussion in Sport Group (Berlin Guidelines). His research focuses on development, neuroplasticity, exercise/sports, concussion and more severe TBI.

Dylan F. Henry
Associate, Montgomery McCracken Walker & Rhoads LLP

Dylan Henry is an associate in Montgomery McCracken’s Litigation Department. He focuses his practice on commercial litigation, representing clients in a variety of commercial disputes. He counsels clients in their efforts to comply with employment law and other legal obligations. Dylan also counsels individuals, school systems, and organizations on catastrophic sports injury matters, the proper management of sport-related concussions and other sport-related injuries, and traumatic brain injury matters. He frequently presents and has authored articles on these legal issues and how these individuals and institutions can minimize their risk of legal liability for sport-related injuries and defend against lawsuits arising out of sport-related events.
T. Blaine Hoshizaki, PhD  
*Director, Neurotrauma Impact Science Laboratory, University of Ottawa*

In 2005, Dr. Hoshizaki founded the Neurotrauma Impact Research Laboratory at the University of Ottawa with the following vision: “Head injuries will become a rare and inconsequential part of athletic and leisure activities.” To date the laboratory has attracted more than 4.5 million dollars in research support. The mission of the Neurotrauma Impact Research Laboratory is to undertake research that contributes in a meaningful way to decreasing all types of head injury in sport. Dr. Hoshizaki participates in national and international helmet standard organizations to develop and improve safety requirements for sport helmet. He participates in educational organizations committed to informing Canadians to the risks associated with brain trauma in sport. The Xenith X1 football helmet, CCM Resistance hockey helmet and Fluid technologies are examples of bringing research to practice. He has published more than 115 scientific papers and 220 scientific presentations involving head injuries in sport and was named as one of the top fifty most influential people in sport in 2011 by *Globe and Mail*. He is a professor of Health Sciences at the University of Ottawa.

Anders Kelto  
*Knight-Wallace Fellow, University of Michigan*

Anders Kelto is a journalist and Knight-Wallace Fellow at the University of Michigan. A former correspondent for NPR, his reporting focuses on the intersection of sports and society. He is the creator of the Audible documentary series *GameBreaker* and produced a special series for Freakonomics Radio called *The Hidden Side of Sports*.

Zachary Kerr, PhD, MPH  
*Research Director, Center for the Study of Retired Athletes; Assistant Professor, Department of Exercise and Sport Science, University of North Carolina at Chapel Hill*

Dr. Kerr is an Assistant Professor in the Department of Exercise and Sport Science at the University of North Carolina, and serves as the Research Director for the Center for the Study of Retired Athletes and as Core Faculty at the UNC Injury Prevention Research Center and the Matthew Gfeller Sport-Related Traumatic Brain Injury Research Center. His research evaluates injury prevention strategies related to concussion and heat stroke, with a focus on injury surveillance and survey research. Through his collaborations with numerous injury prevention, athletic training, and sports medicine experts, he has published more than 160 research articles. In 2018, Dr. Kerr was the recipient of the New Investigator Award from the American College of Sports Medicine. He has worked with University of Michigan faculty and students on projects that highlight how collaboration and dialogue can transcend sports rivalries.

Karen McCulloch, PT, PhD, MS, NCS  
*Board Certified Clinical Specialist in Neurologic Physical Therapy Division of Physical Therapy, Department of Allied Health Sciences, UNC-CH School of Medicine*

Dr. McCulloch is a Professor in the Division of PT, Department of Allied Health Sciences, School of Medicine, University of North Carolina–Chapel Hill. Dr. McCulloch’s clinical and research focus in neurorehabilitation has been traumatic brain injury and concussion. She has developed outcome measures and interdisciplinary efforts to improve active movement, balance, and functional mobility, with the aim to improve quality of life for patients with stroke, patients at risk of falls and active duty service members in the military. Her current research is focused on return to duty assessment after mild traumatic brain injury in the military population. She co-leads a clinical practice guideline development group for physical therapy after concussion and collaborates with investigators at the UNC Matthew Gfeller Sport-related TBI Research Center on rehabilitation post-concussion.
Steve Pachman, Esq
Partner, Montgomery McCracken Walker & Rhoads LLP

Steve Pachman is a partner in Montgomery McCracken’s Litigation Department. His practice concentrates on the defense of traumatic brain injury cases, and representing individuals and school systems in catastrophic sports injury matters arising out of alleged premature return-to-play decisions and other negligence theories in the sports’ context. His representations include a number of high-profile, nationally-publicized concussion cases against NCAA member colleges and universities, high schools, and school personnel, including athletic trainers, coaches, physicians, and nurse practitioners. These cases involve catastrophically-injured football players and other athletes who allegedly sustained prior concussions and Second Impact Syndrome as well as players diagnosed with chronic traumatic encephalopathy. He also regularly advises school officials and attorneys, risk managers, athletic departments and their staff, and health care professionals on institutional liability issues concerning sport-related injuries, and has authored a number of articles on the topics of how to minimize the risk of legal liability for sport-related injuries and defend against lawsuits arising out of catastrophic sport-related events.

Gary Solomon, PhD, FACP
Co-Director, Vanderbilt Sports Concussion Center; Professor, Neurological Surgery and Orthopaedic Surgery & Rehabilitation; Associate Professor, Psychiatry & Behavioral Sciences, Vanderbilt University Medical Center

Dr. Solomon is a board certified clinical neuropsychologist who has practiced in Nashville since 1984. After 27 years in private practice, Dr. Solomon joined the Vanderbilt University School of Medicine in 2011 as a Co-Director of the Vanderbilt Sports Concussion Center. He is a Professor of Neurological Surgery and Orthopaedic Surgery & Rehabilitation, and Associate Professor of Psychiatry & Behavioral Sciences.

For the past 20 years he has served as the Team Neuropsychologist for the Nashville Predators and the Consulting Neuropsychologist for the Tennessee Titans. He is the Consulting Neuropsychologist for the Athletic Departments at Vanderbilt University, Tennessee Tech University, and the University of Tennessee, and is the Senior Medical Advisor to the National Football League’s Health and Safety Department. He is Associate Section Editor for the journal Neurosurgery, and is a member of the editorial boards of American Journal of Sports Medicine, Archives of Clinical Neuropsychology, and Developmental Neuropsychology. He has published a book and more than 80 peer-reviewed manuscripts on sport-related concussion. He was a member of the 5th International Consensus Conference on Concussion in Sport and is a Fellow of the National Academy of Neuropsychology and the Sports Neuropsychology Society.

Erik E. Swartz, PhD, ATC, FNATA
Chair, Department of Physical Therapy and Kinesiology, University of Massachusetts at Lowell

Dr. Swartz is Professor and Chair of the Department of Physical Therapy and Kinesiology at the University of Massachusetts Lowell. Dr. Swartz’s research interest focuses on the prevention and acute care of head and neck injuries in football. He has received grants from The NATA Foundation, NOCSAE, NFL Charities and was a winner of the NineSigma Head Health Challenge. He has published in journals such as The American Journal of Emergency Medicine, New England Journal of Medicine, Spine, and The American Journal of Sports Medicine. He served on the NFL Head Neck and Spine Committee’s Subcommittee on Safety Equipment and Rules and as chair of the NATA Position Statement on the Acute Management of the Cervical Spine Injured Athlete. He serves on the Editorial Boards of the Journal of Athletic Training and the Athletic Training and Sports Health Care Journal. In 2011 he was honored with a Fellows designation in the National Athletic Trainers’ Association and in 2015 received the Most Distinguished Athletic Trainer Award, also from the NATA.
Douglas Wiebe, PhD  
Director, Penn Injury Science Center; Professor, Department of Biostatistics, Epidemiology and Informatics, Perelman School of Medicine, University of Pennsylvania  

Dr. Wiebe is a Professor of Epidemiology in the Department of Biostatistics, Epidemiology and Informatics in the Perelman School of Medicine at the University of Pennsylvania. He is Director of the Penn Injury Science Center, one of ten Injury Control Research Centers funded by the CDC, and Director of an NIH/Fogarty-funded training program to build injury epidemiology capacity in Botswana. Dr. Wiebe also directs the data coordinating center, surveillance activities, and analyses of the Ivy League–Big Ten Epidemiology of Concussion Study. The resulting database is a registry of 2,600+ concussion injuries sustained by athletes—representing a total of 27 varsity and club sports—during sport-related and non-sport related activities.

Matthew Lorincz, MD, PhD  
Associate Professor, University of Michigan; Co-Director, Michigan NeuroSport; Clinical Core Director, Michigan Concussion Center  

Dr. Lorincz is an Associate Professor in the Department of Neurology at the University of Michigan. He is Co-Director of the Michigan Sports Neurology clinic, Michigan NeuroSport, and Co-director of the Michigan Concussion Center Clinical core and on the Michigan Concussion Center Executive committee. He specializes in Sports Neurology with an emphasis on treatment of acute concussions and the long-term consequences of concussion, as well as management of neurological disorders in athletes.

Dr. Lorincz is a team physician for the University of Michigan, Eastern Michigan University, USA Hockey and U.S. Ski and Snowboard. He has also served as a consultant to the National Basketball Association. His current research interests are in optimizing recovery of sport related concussion and the long-term consequences of concussion in sport.

James (J.T.) Eckner, MD, MS  
Associate Professor, Department of Physical Medicine & Rehabilitation, University of Michigan; Director, Clinical Research, Michigan NeuroSport & PM&R Concussion Programs; Director, PM&R Resident Research Program  

Dr. Eckner is an Associate Professor in the Department of Physical Medicine & Rehabilitation at the University of Michigan. He serves as Director of Clinical Research for the Michigan NeuroSport and PM&R Concussion Programs as well as Director of the PM&R Resident Research Program. In addition, he is the Research Core Director for the recently established University of Michigan Concussion Center. He treats athletes with concussions and other neurological conditions in the University of Michigan's NeuroSport Clinic, and he has worked with the sports medicine programs at the University of Michigan, Eastern Michigan University, and the USA Hockey National Team Development Program. His primary area of research interest is mild traumatic brain injury in athletes. His research addresses concussion assessment using a simple clinical test of reaction time; the neck’s role in concussion susceptibility and the potential role for neck strengthening as an intervention to reduce an athlete’s concussion risk; concussion biomechanics using body-worn impact sensors; and assessment of the short- and long-term effects of concussion and sport-associated head trauma on an athlete’s neurocognitive health.
University of Michigan researchers, clinicians, and educators are focused on addressing the concussion crisis that has emerged over the previous decade, which the Centers for Disease Control and Prevention have identified as a ‘silent epidemic.’

Founded in 2018 with support from the U-M Biosciences Initiative, the Michigan Concussion Center fosters collaboration between diverse faculty and staff from across the university in the relentless pursuit of concussion research, clinical care, and educational excellence.

The center will conduct multi-disciplinary research that will answer crucial questions about concussion prevention, identification, diagnosis, management, and outcomes to advance patient health and support outreach and engagement programs that keep our communities healthy.

For more information about the Michigan Concussion Center, visit concussion.umich.edu.

4 million
sport- & recreation-related concussions occur annually in the US

Concussions can occur in men & women across all sports

Concussion care in the US generates $87 billion in medical expenditures
Description
Join local, regional, and nationally renowned speakers in discussing some of the most pressing topics in Orthopedics, Neurology, Sports Medicine, and Injury Prevention. This two-day event is designed to implement up-to-date guidelines for the diagnosis and management of sports injuries, including concussion, while relaying the importance of communication for the safe return to play for athletes.

Target Audience
This activity is appropriate for:
Healthcare Professionals, Physician Assistants, Physicians
In the fields of:
Emergency Medicine, Family Medicine, Neurology, Orthopedic Surgery, Pediatric Surgery, Physical Medicine & Rehabilitation, Primary Care, Sports Medicine

Accreditation and Credit Designation
Day 1: Thursday, May 30, 2019
• Approved for 8 AMA PRA Category 1™ and 8 EBP/CEU credit hours
Day 2: Friday, May 31, 2019
• Approved for 7.5 AMA PRA Category 1™ and 7.5 EBP/CEU credit hours

Physicians:
This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the University of Michigan Medical School and University of Michigan Injury Prevention Center. The University of Michigan Medical School is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The University of Michigan Medical School designates this live activity for a maximum of 15.50 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Athletic Trainers:
University of Michigan Athletic Department (BOC AP #P8320) is approved by the Board of Certification, Inc. to provide continuing education to Athletic Trainers. This program is eligible for a maximum of 15.5 EBP Category hours/CEUs. ATs should claim only those hours actually spent in the educational program.

MedSport is an Approved MPTA Provider and this content would represent 15.5 contact hours.

Evaluation and Certificate
Physicians:
• Please sign in at the registration desk when you arrive at the event (day 1 and/or day 2) in order to record your attendance.

At the end of this activity, please complete the following steps to fill out the course evaluation and print your certificate:
• Login to your account at MiCME at http://micme.medicine.umich.edu/

Don’t have an account? Click on the “Create a MiCME Account” link on the sign-in page. Note: You must have a MiCME account to claim credit for any University of Michigan Medical School (UMMS) CME activity.
• On the “Credit Center” card on your Dashboard, click on "Credits and Certificates."
• Locate the activity in the “Activities Available for Credit Claiming” section.
• Under “Action,” click on "Claim."
CONTINUING EDUCATION CREDITS

- On the next page, under “Action,” click on “Add Credit.”
- Enter the number of credits you’re claiming and the “I Attest” button. (Note: This number should reflect credits claimed for the entire course that you attended, not just a single day.)
- Complete the evaluation form to provide feedback on the activity.
- Click the “Submit” button.
- Scroll down to the “Awarded Credits” section to view or print your certificate and/or University of Michigan comprehensive CME transcript.

Athletic Trainers:

- Please sign in at the registration desk with your license number when you arrive at the event (day 1 and/or day 2) in order to record your attendance.
- Sign out is not required as credit hours are based on the honor system.
- A printed certificate will be available to you at the end of day 1 and/or day 2 based on your attendance at the event.

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UNIVERSITY OF MICHIGAN INJURY PREVENTION CENTER
injurycenter.umich.edu
Twitter: @UMInjurycenter
Facebook: @UMInjurycenter
YouTube: University of Michigan Injury Center channel

UNIVERSITY OF MICHIGAN CONCUSSION CENTER
concussion.umich.edu
Twitter: @UMConcussion
Whether it’s the middle of the season, the postseason or the offseason, there is never a good time for a sports injury to strike. But when an injury does occur athletes want the care and expertise that will get them back in the game.

MedSport’s nationally recognized orthopaedic surgeons and a team of sports medicine and pediatric specialists, including physician assistants, physical therapists, athletic trainers and physical therapy assistants, work closely together to care for sports injuries. We have designed our services and facilities to meet the individual athletic needs of pro-, student- and recreational athletes. From specialized surgery to advanced rehab, the MedSport team specializes in preventing, diagnosing and treating all types of sports injuries.
Making a Difference

Injury is the leading cause of death for people aged 1 to 44.

FOCUS AREAS:
- Opioid Drug Misuse
- Youth Violence
- Transportation Safety
- Sexual Violence
- Concussion

We work to prevent injury by...
- Performing innovative research
- Publishing research findings and translating research into practice
- Supporting community groups
- Publishing educational materials for practitioners
- Educating students, trainees, and others
- Providing support for developing effective injury prevention policy

Join our injury prevention community!

With monthly learning activities, engaged members, funding opportunities, a resource-rich website, and collaboration opportunities, the University of Michigan Injury Prevention Center provides a way to connect and grow.

www.injurycenter.umich.edu  @UMInjuryCenter  734-232-2105
EXPERTS IN CONCUSSION DIAGNOSIS AND TREATMENT

The University of Michigan NeuroSport program is one of only a handful of comprehensive programs in the country dedicated to the neurological concerns of athletes. The Michigan NeuroSport Program encompasses a multidisciplinary outpatient clinic, research and education programs, in addition to providing administrative and community services from the local to national level.

The mission of the multidisciplinary Michigan NeuroSport outpatient clinic is to provide optimal, individualized patient-centered care for athletes of all levels with an emphasis on acute concussion and potential long-term consequences of mild head trauma.

The team combines the expertise of specialists from Neurology, Physical Medicine and Rehabilitation, Neuropsychology, Physical Therapy, Psychiatry and Pediatric Sports Medicine, who see up to 4,000 sport concussion visits every year, in addition to cases of peripheral nerve injury, spinal cord injury, stingers, and other neurologic injuries. Our highly experienced team takes a comprehensive approach to provide state-of-the-art diagnostic and treatment options with a focus on returning patients to school, work and competition safely and expeditiously.

SPORTS NEUROLOGY
Andrea Almeida, M.D., 
Co-Director
Matt Lorincz, M.D., Ph.D., 
Co-Director
Mike Popovich, M.D.
Andrew Sas, M.D, Ph.D.

SPORTS MEDICINE
Ingrid Ichesco, M.D.

PEDIATRICS
Andrea Aagesen, D.O.
James Travis Eckner, M.D.
Brittni Rohde, M.D.
Ryan Stork, M.D.

SPINE PHYSICAL THERAPY
Kari Alsager, P.T.
Pam Knickerbocker, P.T.
Jason Mottes, P.T.
Cindy Munday, P.T.
Diane Rufe, P.T.

VESTIBULAR PHYSICAL THERAPY
Bara Alsalaheen, P.T., Ph.D.
Melissa Grzesiak, P.T.
Wendy Carender, P.T.

ATHLETIC TRAINERS
Jere Freeman, ATC
Brooke Ernst, ATC
Suzie LaChance, ATC

FOR PATIENT REFERRALS 24 HOURS A DAY, CALL M-LINE AT 800-962-3555.
UOFMHEALTH.ORG/NEUROSPORT

FOR MORE INFORMATION about the Michigan NeuroSport Clinic: 734-930-7400 or uofmhealth.org/neurosport
CONCUSSION CENTER

Journal Club

CME Credit Available
When: 8-9am, First Friday of each Month
Where: Small Conference Room at Domino’s Farms
Call In: 734-763-1841, Meeting ID: 9739027995
Passcode: 3806

Upcoming 2019 Dates:
April 5, May 3
June 7, July 5
August 2, September 6
October 4, November 1
December 6

Questions? Contact niheureu@umich.edu

NOTES
# SCHEDULE AT A GLANCE

## MORNING SESSION (8:15–11:50 am)

<table>
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<tr>
<th>Time</th>
<th>Event</th>
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| 8:15–8:45 am | Concussion Pathophysiology  
Christopher Giza, MD     |
| 8:45–9:15 am | Concussion Epidemiology  
Zachary Kerr, PhD, MPH  |
| 9:15–9:45 am | Methods and Findings of the Ivy League-Big Ten Epidemiology of Concussion Study  
Douglas Wiebe, PhD |
| 9:45–10:00 am | Break                       |
| 10:00–10:30 am | Head Trauma and Brain Injury  
T. Blaine Hoshizaki, PhD  |
| 10:30–11:00 am | Application of the SCAT5 on the Sideline and in the Clinic  
Scott Anderson, ATC  |
| 11:00–11:30 am | Application of the CDC Guidelines for Pediatric Concussion  
Matthew Breiding, PhD |
| 11:30–11:50 am | Roundtable with Morning Speakers |

## LUNCH (12:00–1:00 pm)

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<th>Time</th>
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| 12:20–12:50 pm | Keynote Speaker: Evolution of Clinical Science and Current Perspective of Neurodegenerative Disease from Sports Participation  
Julian Bailes, Jr., MD  |

## AFTERNOON SESSION (1:00–4:35 pm)

<table>
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<tr>
<th>Time</th>
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| 1:00–1:30 pm | Imaging and Biomarkers: The Future of Concussion Diagnostics  
Jeffrey Bazarian, MD, MPH  |
| 1:30–2:00 pm | What We Know and What We Think We Know About CTE  
Gary Solomon, PhD, FACP  |
| 2:00–2:30 pm | Unresolved Science and Law of Concussion and CTE  
Steve Pachman, Esq and Dylan F. Henry |
| 2:30–2:45 pm | Break                       |
| 2:45–3:15 pm | Concussion Prevention  
Erik Swartz, PhD, ATC, FNATA  |
| 3:15–3:45 pm | Concussion Rehabilitation  
Karen McCulloch, PT, PhD, MS, NCS  |
| 3:45–4:15 pm | How the Media Covers Concussions and CTE  
Anders Kelto |
| 4:15–4:35 pm | Roundtable with Afternoon Speakers |
| 4:35–4:45 pm | Closing Remarks               |