

2022 NATA Convention Preliminary Program

THEMES

- Diversity, Equity, Inclusion, Accessibility
- Emerging Concepts in Injury Prevention
- General Medical
- OD* – On-Demand

* NATA 2022 On-Demand will include select sessions recorded in Philadelphia. For in-person attendees, no CEUs will be awarded for sessions watched on-demand.

TUESDAY, JUNE 28

Advanced Track: 8a.m. – 12p.m.

Early Recognition and Initiation of Intervention for Vestibular Ocular Impairments following Concussion: The Importance of Early Motor Learning, (I, II, IV), Essential

Rebecca Bliss, DPT, DHSc, University of Missouri

William Carr, PhD, ATC, Missouri State University

Recent literature has shown 50-80% incidence of visual and/or vestibular dysfunction following Sport Related Concussion (SRC). 1–4 Athletic Trainers are the first line of defense in sport related concussion and can play an important role of early identification and initiation of treatment of driving symptomology. The Vestibular Ocular Motor Screening Tool is an outcome measure designed for early detection of vestibular and ocular deficits following SRC with a 2% false positive rate and can be utilized

for early identification to guide initiation of rehabilitation strategies and/or referral for treatment to decrease recovery time and insure safe return to sport.

At the end of this session, attendees will be able to:

- Describe common vestibular/ocular impairments post-concussion that can be recognized early to decrease risk of protracted recovery.
- Discuss comprehensive evaluation techniques to include utilization of the Vestibular Ocular Motor Screening Tool (VOMS) and appropriate timing for administration.
- Differentiate appropriate early interventional strategies for oculomotor versus vestibular impairments to decrease symptomology in post-concussive athletes.
- Collaborate with other multidisciplinary team members in the concussion management process for optimal outcomes.

Advanced Track: 8a.m. – 3p.m.

Getting a “Leg Up” on Treating Ankle Disfunction, A Broad-Based Manual Therapy Approach, (IV), Advanced

Aric Warren, EdD, ATC, CSCS, Oklahoma State University

Brian Farr, MA, LAT, ATC, University of Texas at Austin

Ankle sprains are one of the most common musculoskeletal injuries that athletic trainers will treat. Various techniques and approaches exist to treating ankle sprains. This session will present an eclectic approach to treating lateral ankle sprains by incorporating a variety of manual therapy techniques targeted at reducing symptoms and improving ankle function in the acute and sub-acute phases. Pathomechanics such as positional faults, fascial distortion, and altered arthrokinematics will be addressed. Manual techniques improving outcomes such as joint mobilizations (grades I-V), positional release therapy, neural mobilization techniques, strain-counter-strain, muscle energy, and fascial distortion techniques will be discussed, demonstrated, and practiced.

At the end of this session, attendees will be able to:

- Describe the pathomechanics and pathophysiology associated with lower extremity injury.
- Select and integrate appropriate manual therapy techniques into the overall treatment strategy of lower extremity injury.
- Demonstrate appropriate manual therapy techniques to improve patient outcomes with lower extremity injury.

WEDNESDAY, JUNE 29

Interactive Lecture, 7:30 a.m. – 8:25 a.m.

Effects of Footwear During a Clinical Gait Analysis, (I, II, IV), Advanced

Lisa Custer, PhD, ATC, Towson University

Athletic trainers commonly evaluate biomechanically related lower extremity injuries. Thus, clinicians need to be confident in their ability to evaluate and appreciate the relationships between anatomical alignments, gait patterns, shoes and lower extremity injuries. The primary purpose of this session is to provide clinical athletic trainers with advanced strategies and tools for performing a biomechanical gait analysis. Current research that links gait characteristics, such as ground contact location, cadence and shoe construction, with injury risk will be discussed. Secondly, this session will provide and discuss potential interventions clinicians can incorporate into their practice.

At the end of this session, attendees will be able to:

- Identify fundamental differences in shoe construction and design
- Perform a thorough evaluation of lower extremity anatomical alignments and gait
- Create and implement interventions to reduce risk for lower extremity injury

Lectures, 7:30 a.m. – 8:25 a.m.

(Non-CEU Session)

Educating the Educator: How To Incorporate Diversity, Equity, Inclusion and Access Across Didactic and Clinical Curricula, (I, II, IV), Essential

Presented by the NATA Professional Education Committee

Michelle Odai, PhD, LAT, ATC, Florida International University

There's a growing need in the academic and clinical environments for guidance on how to incorporate the topics of diversity, equity, inclusion and access into athletic training curricula. It's unlikely that programs can add individual courses on these topics. Instead, these topics should be included in teaching, learning and assessment techniques across existing courses. Educators should ensure best practices are utilized to appraise and modify curricula so athletic training students are prepared to practice patient-centered, culturally aware, nondiscriminatory and inclusive care to all. Examples of appraisal and incorporation strategies for didactic and clinical education will be provided.

At the end of this session, attendees will be able to:

- Appraise current didactic and clinical curricula for incorporation of diversity, equity, inclusion and access
- Modify didactic and clinical curricula to ensure incorporation of diversity, equity, inclusion and access

- Develop teaching, learning and assessment strategies to incorporate diversity, equity, inclusion and access into existing courses

Functional Movement Paradigms for Concussion Management: Moving Beyond the Clinic and Onto the Field, (II, IV), Advanced,

Landon Lempke, PhD, LAT, ATC, Boston Children's Hospital

Robert Lynall, PhD, LAT, ATC, University of Georgia

OD*

Athletic trainers are often the primary health care provider implementing concussion assessments and return-to-sport management. Clinical measures are important for monitoring recovery, but may be limited for determining return to sport as growing research indicates functional movement deficits well beyond return to sport. This presentation will compare and contrast clinical and emerging functional concussion assessments, describe current functional assessments and discuss what functional assessments may mean for clinical practice. Discussing functional concussion assessments and their potential utility will help attendees critically appraise current concussion health care practices and bring awareness to the potential value of functional assessments for determining return to sport post-concussion.

At the end of this session, attendees will be able to:

- Compare critically the value of clinical and functional assessments for concussion management
- Recognize the current state of post-concussion functional assessment paradigms in the scientific literature
- Prepare and discuss the future utility of functional assessments for determining return to sport following concussion

Treating Sick Muscles After ACL Injury: Translating the Science Into the Clinic, (IV), Advanced

Lindsey Lepley, ATC, University of Michigan

OD*

Atrophy that occurs after anterior cruciate ligament (ACL) injury continues despite being actively engaged in exercise. Recognizing the multitude of factors and cascade of events that are present and negatively influencing the regulation of muscle mass after ACL injury will likely enable clinicians to design more effective interventions. This session will present the mechanisms by which muscle mass is lost after ACL injury and evidence in support of alternative exercise interventions to optimize muscle recovery after injury.

At the end of this session, attendees will be able to:

- Develop an rehabilitation protocol that directly targets insufficiencies in neural activity and muscle morphology after ACL injury
- Summarize how mechanically engaging muscle is beneficial to targeting adaptations in muscle size and composition

- Understand the time course of muscle dysfunction after injury so that the timing of the intervention is the most effective

Injury Prevention Coordination: The Relationship Between Athletic Trainers and Strength and Conditioning Coaches, (I), Advanced

Eric McMahon, MEd, CSCS*D, RSCC*D, National Strength and Conditioning Association

OD*

This session will provide athletic trainers with insight into the benefits of integrating strength and conditioning specialists into their practice. In order for such coordination of care to be effective, collegial relationships between AT and S&C must be developed. Opportunities for shared work between athletic trainers and strength and conditioning coaches include pre-season screening, injury prevention initiatives, returning injured athletes to participation and helping athletes reach peak performance. Integration of the two fields can be impactful for providing high-quality patient-centered care.

At the end of this session, attendees will be able to:

- Describe ways in which the athletic trainer and strength and conditioning coach can cooperate to effectively, promptly, and safely prevent injury and return patients to competition following injury.
- Develop plans for the coordination of initiatives to meet the goals of a variety of settings and situations.
- Understand the impact of collegial relationships between AT and S&C on patient care.

Forum, 9:40 a.m. – 10:35 a.m.

Overcoming Implicit Biases: How To Integrate Diversity, Equity and Inclusion Best Practices in Your Selection Process, (V), Essential

Toni Torres-McGehee, PhD, SCAT, ATC, University of South Carolina

Kevin King, MA, ATC, Carolina Panthers

Over the past two decades, the notion of implicit bias has come to serve as an important component in our understating of discrimination in activities such as hiring, promotion and school admissions. Specifically, discrimination based on race, ethnicity, national origin, gender, age, disability, gender orientation and other characteristics continues to distort employers' hiring decisions; therefore, limiting employment opportunities for historically excluded groups. Overcoming implicit bias and the integration of diversity, equity and inclusion best practices into the selection process for hiring will mitigate the exclusion of minoritized groups.

At the end of this session, attendees will be able to:

- Adopt functional vocabulary for communicating about diversity, equity and inclusion

- Identify and increase awareness on personal implicit bias
- Implement diversity, equity and inclusion best practices to mitigate implicit bias in the selection process

Lectures, 9:40 a.m. – 10:35 a.m.

CX for the AT: Customer (Patient) Experience Touchpoints To Transform Your Athletic Training Practice, (V), Advanced

Dale Blair, MS, ATC, CSCS, Wenatchee High School

This session will explore ways to enhance practice quality and efficiency with customer (patient) experience systems. These concepts can be utilized in any athletic training practice setting from secondary school to a formal health care practice. There are many “touch points” (a point of contact or interaction) that either degrade or enhance the patient experience. Think back to a time when you had a positive or negative interaction with a practitioner. How did that make you feel? This session will breakdown the complexities of customer experience into simple, practical activities that can be used to enhance every touch point in your practice setting.

At the end of this session, attendees will be able to:

- Examine why a patient-focused experience is an essential strategy that will contribute to the long-term success of your organization
- Identify the drivers of the patient experience and learn what they want and expect when it comes to the service they receive
- Evaluate patient behavior when it comes to service to determine what you can do to listen to the voice of the patient and create value for your patients
- Develop a tracing of the patient’s journey through your practice and use this process to identify what you can do to maximize the patient experience
- Evaluate how marginalized groups have been treated in your facility and what methods you can employ to assure inclusivity

Novel Approaches for Preventing Post-Traumatic Knee Osteoarthritis, (I, IV), Advanced

Troy Blackburn, PhD, ATC, FNATA, University of North Carolina at Chapel Hill

Brian Pietrosimone, PhD, ATC, University of North Carolina at Chapel Hill

Post-traumatic osteoarthritis (PTOA) is a common long-term consequence of knee pathologies such as anterior cruciate ligament injury, meniscal injury and patellofemoral pain syndrome. These pathologies share common characteristics including chronic quadriceps dysfunction and aberrant gait biomechanics that influence PTOA pathogenesis. This session will summarize current evidence regarding novel approaches for addressing these sequelae and how they influence PTOA risk. Prevention strategies to be discussed include vibration and real-time gait biofeedback. Attendees will gain an understanding of the mechanistic constructs underlying each intervention, their effects on quadriceps function and gait biomechanics and their effects on knee joint health outcomes.

At the end of this session, attendees will be able to:

- Identify sequelae associated with knee pathologies that contribute to post-traumatic knee osteoarthritis development
- Explain the rationale and justification for using vibration and real-time gait biofeedback to prevent post-traumatic knee osteoarthritis
- Evaluate the potential for incorporating vibration and real-time gait biofeedback into clinical practice

Understanding the Updates to the NATA Code of Ethics and the Complaint Process, (V), Essential

Presented by the NATA Committee on Professional Ethics

Suzanne Konz, PhD, ATC, CSCS, Marshall University

Zach Garrett, DHSc, LAT, ATC, Marshall University

Athletic training practice is defined by ethical characteristics and professional values setting it apart from non-professional groups. In 2021, NATA revised the NATA Code of Ethics to reflect present standards and ethical practice by the athletic trainer. The edits focused on improving language to reflect our membership and provide wording on behaviors and actions not related to patient care. Also, the athletic training professional values were added to the NATA Code of Ethics. This presentation will discuss the updated NATA Code of Ethics and its importance to professional practice by the athletic trainer

At the end of this session, attendees will be able to:

- Describe the NATA Committee on Professional Ethics adjudication process
- Recognize the updates to the NATA Code of Ethics language
- Implement the ethical principles in their professional practice

Surgical Intervention: Lumbar Spine Discectomy, (II, IV), Advanced

Robert Watkins, IV, MD, Marina Spine Center

OD*

The most commonly performed procedure for treatment of radiating pain caused by disc herniation is a discectomy. Discectomies are found to have very high rates of success. This presentation will include live video of a discectomy procedure narrated by the surgeon who performed the intervention. The technique for appropriate evaluation of lumbar spine injury including sensory and motor deficits will be described. Both surgical and non-surgical treatment options will be discussed and compared. A variety of patient cases will be presented with a range of symptoms and severity. Determination of surgical need, surgical recovery timelines and risk of recurrence will also be addressed.

At the end of this session, attendees will be able to:

- Describe the anatomy of the spine and discs.

- Recognize and diagnose injuries related to the spine and discs.
- Differentiate the surgical options and employment of surgical procedures for disc injuries.

Pathology and Diagnosis of Cyclic Vomiting Syndrome and Cannabis Hyperemesis Syndrome in NFL Players, (I, II), Advanced

Julie Frymyer, DPT, MS, ATC, NFL Enterprise

OD*

Cyclic Vomiting Syndrome (CVS) and Cannabis Hyperemesis Syndrome (CHS) are characterized by debilitating episodes of extreme nausea, vomiting, and abdominal pain lasting hours to days followed by symptom free intervals. Additionally, CHS is also characterized by the chronic use of cannabis. Pathology includes a disturbed regulation between the gut and brain, migraine headaches, abdominal migraines, and mitochondriopathy. Identifying the syndrome, maintenance medicine to decrease frequency, and finding abortive medicine to stop an episode are paramount. Currently there is no research about athletes with CVS or CHS or guidelines for returning athletes to sport after an episode.

At the end of this session, attendees will be able to:

- Describe the 5 Diagnostic Criteria for cyclic vomiting syndrome and cannabis hyperemesis syndrome.
- Describe the 4 phases of cyclic vomiting syndrome and cannabis hyperemesis syndrome
- Identify and list trigger mechanisms for cyclic vomiting syndrome
- Summarize the treatment goals and describe treatment/medication options for each of the 4 phases in CVS and CHS.

Interactive Lecture, 9:40 a.m. – 10:35 a.m.

Make the Adjustment: Risky Throwing Mechanics and Its Effect on Injury in the Pediatric Population, (I), Advanced

Dennis Coonan, MSE, LAT, ATC, Children's Hospital Colorado
Matthew Brewer, MS, LAT, ATC, Children's Hospital Colorado

OD*

Research has demonstrated that the pediatric population is more susceptible to injury and overuse pathologies. This is more apparent in overhand sports, specifically baseball, due to high forces applied to the upper extremity, along with immature physis and apophysis in the upper extremity. This session will examine three-dimensional modeling and kinematic data from pediatric baseball pitchers. Specifically, data related to the forces applied during throwing, potential injuries associated with faulty mechanics and normative kinematic values will be presented. Intervention/rehabilitation strategies for at-risk patients will be highlighted with the hope of significantly reducing injuries in the future.

At the end of this session, attendees will be able to:

- Identify and ascertain overhead throwing mechanics that are deemed "risky" and could lead to potential injury in the pediatric population
- Ability to demonstrate and apply effective intervention and rehabilitation strategies for athletes who have suffered from risky throwing mechanics, thus resulting in injury
- Understand the normative values of forces applied to the upper extremity in pediatric pitchers
- Explain and decipher the terminology associated with pitching and throwing, following exposure to the use of three-dimensional motion capture analysis

Learning Lab, 9:40 a.m. – 11:40 a.m.

Assessment and Treatment for the Vestibular Domain in Sport-Related Concussion, (II, IV), Advanced

Amy Alexander, PT, Banner Health

Vestibular dysfunction is a common impairment following a concussive event. The complaints of balance problems and dizziness are multifactorial, necessitating a thorough assessment. Once these impairments are identified, being able to address these deficits in a functional manner is an important next step in resuming sport-related activity. This session will explore how to integrate active vestibular stimulation along with the up and down regulation of sensory systems for postural control. By better understanding the theoretical and clinical application of vestibular and postural control assessments, attendees will be able to develop functional and task-oriented interventions for post-injury and performance training.

At the end of this session, attendees will be able to:

- Recognize how balance testing assesses the sensory elements contributing to postural control in static and active vestibular stimulation conditions
- Differentiate problems of balance from problems of gaze stability and recognize how each area contributes to sports performance

Ally Training/Program, (I), Advanced

NATA Safe Space Ally Training for the Athletic Trainer
 Amanda Tritsch, PhD, LAT, ATC, University of South Florida
 Dani Moffit, PhD, LAT, ATC, Idaho State University

The purpose of this presentation is to provide the NATA Safe Space Ally Training (SSAT) to our membership. This is an opportunity to learn about the lesbian, gay, bisexual, transgender, queer and other gender identities (LGBTQ+) community. SSAT gives our members the knowledge, attitudes, behaviors and the skills necessary to achieve optimal health outcomes for this diverse patient populations. This presentation will provide participants with the tools to practice effective cross-cultural communication and be prepared to work respectfully and effectively in diverse work environments as it relates to LGBTQ+ athletic trainers and patients.

At the end of this session, attendees will be able to:

- Define commonly used LGBTQ+ terms that create cultural awareness in patient care.
- Apply safe space ally training educational resources into the athletic training curriculum.
- Create an environment of inclusivity and respect within athletic training for those in the LGBTQ+ community.

Lectures, 11:05 a.m. – 12 p.m.

What's in Your Medicine Cabinet? Topicals Versus Orals, (I), Essential

Robert Nickell, PharmD, Pharmco Inc.

OD*

The session will focus on providing attendees with an update on common pharmaceutical agents, modes of delivery and side effects. Attendees will hear about gabapentin, ketorolac, ketamine, ketoprofen, naproxen, diclofenac, lidocaine, methyl salicylate and capsaicin. Discussion will include differences between drugs, when to use or recommend each and why one dosage form is preferred in certain circumstances. Attendees will also compare compounded medication to commercial medications, learn which drugs absorb through the skin and which don't as well as review systemic versus localized actions.

At the end of this session, attendees will be able to:

- Comprehend the differences in therapeutic value between topicals and oral medications
- Summarize the impact of common pharmaceutical agents on athletic patients
- Understand differences between NSAIDs, anesthetics, irritants and pain products
- Identify common side effects that relate specifically to athletes

A Deeper Dive: Bridging the Gap To Engaging Low Socioeconomic Status Populations With Concussion Management and Beyond, (I, V), Mastery

Tamerah Hunt, PhD, ATC, Georgia Southern University

Melissa Kossman, PhD, LAT, ATC, University of Southern Mississippi

Chris Padilla, MS, LAT, ATC, University of Kentucky

Research needs to catch up to common pitfalls established in clinical practice to support clinicians working in this medically underserved population. Concussion management relies on uniting stakeholders to create a culture of safety in low socioeconomic status (SES) communities. Unfortunately, barriers such as cultural and community mistrust of clinicians can affect concussion management, ultimately resulting in poor outcomes. While concussions are common, they're not the only type of injury; therefore, applying known strategies for combating these barriers in other situations is important to overall success. This session aims to prepare athletic trainers to engage with their low SES population regardless of injury.

At the end of this session, attendees will be able to:

- Identify barriers and facilitators to engaging low SES stakeholders in the attendee's clinical practice

- Summarize potential pitfalls to engaging low SES populations during clinical practice
- Develop a plan to navigate optimal stakeholder influence and engagement
- Appraise the research for concussion management while engaging the community
- Apply evidence-based strategies of engagement in concussion management to other injuries seen in clinical practice

Creating Capital for Your Athletic Training Business, (V), Advanced

Michael Donahue, LAT, ATC, The Athletic Training Room

Sara Richardson, LAT, ATC, Myo-Fit Mobility & Therapy

According to a survey completed by the NATA Private Practice and Emerging Settings Committee, athletic trainers view startup costs, and the financial burden they may create, as a limiting factor in pursuing business ownership. This session seeks to destigmatize costs and break down barriers of funding to encourage more professionals to consider private practice or entrepreneurship for their career path. There's support within the profession of entrepreneurship and these professionals serve as examples of such, with limited startup costs.

At the end of this session, attendees will be able to:

- Determine necessary startup costs based on business type
- Justify the value of services provided
- Identify resources for entrepreneurs to start a business

The Role of Diversity, Equity, Inclusion and Access in Career Satisfaction in Athletic Training, (V), Essential

Presented by the NATA Career Advancement Committee

Reyay Corbett, PhD, ATC, PES, Restorative Vitality, LLC

Darrell Gilliland, EdD, LAT, ATC, Texas Tech University Health Science Center

Frank Walters, PhD, LAT, ATC, University of Miami

As the athletic training profession diversifies, employers have been challenged with creating an inclusive culture that welcomes, promotes and values diversity within the workplace. However, individuals from diverse groups commonly find themselves excluded from networks of people, information and opportunity. These experiences of exclusion may affect their general sense of well-being, job satisfaction and organizational commitment. In addition, perceptions of exclusion may also affect an individual's long-term professional tenure and retention in the athletic training profession. This session seeks to describe the relationship between organizational diversity, perceived inclusion and administrative support on job performance and career satisfaction in athletic training.

At the end of this session, attendees will be able to:

- Critique self-awareness to determine biases that may negatively affect organizational culture
- Recognize the benefits of diversity, equity, inclusion and access in career satisfaction and professional retention in athletic training
- Identify ways to support diverse and underrepresented individuals to increase organizational commitment and career satisfaction

The Prevalence and Consequences of Early Sports Specialization in Young Athletes, (I, V), Advanced

David Bell, PhD, ATC, University of Wisconsin at Madison

Sport specialization is such a concerning topic that medical organizations have released statements warning of this practice. Despite these warnings, anecdotal evidence suggests that this information is being ignored. Sport specialization may partially explain the increase in the frequency and severity of pediatric musculoskeletal injuries over the past two decades. This session will discuss the current evidence linking sport specialization to injury as well as evidence-based recommendations for safe participation in youth sport. Athletic trainers are the forefront of youth sport participation and knowledge regarding this important topic is imperative to changing the environment and culture surrounding sport specialization.

At the end of this session, attendees will be able to:

- Define sport specialization and how it's associated with injury risk
- Describe the different methods of determining an athlete's level of specialization
- Identify common injuries associated with sport specialization
- Describe recommendations for parents, coaches and athletes regarding volume of sport participation
- Identify factors that influence sport specialization decision-making

Interactive Lecture, 11:05 a.m. – 12 p.m.

Do Faulty Biomechanics Really Cause Patellofemoral Pain?, (I, II), Essential

David Bazett-Jones, PhD, AT, ATC, University of Toledo

Patellofemoral pain (PFP) is one of the most common injuries seen in athletes. There are multiple biomechanical factors that are thought to increase the risk of developing PFP, including increased dynamic knee valgus, increased pronation, hip muscle weakness, increased Q angle, workload exceeding capacity and decreased hamstring flexibility. The evidence that these are indeed risk factors for PFP is lacking; however, athletic trainers continue to consider these factors as indicative of PFP risk. This session will present the best evidence on the biomechanical risk factors for PFP. This session will also help ATs understand their ability to assess these evidence-based risk factors clinically and provide the evidence for the effectiveness of programs addressing risk reduction of biomechanical factors.

At the end of this session, attendees will be able to:

- Differentiate between biomechanical risk factors that are and aren't supported in PFP literature
- Describe how to clinically assess biomechanical risk factors for the development of PFP
- Discuss how biomechanical risk reduction programs can reduce PFP

Forum, 1:30 p.m. – 2:25 p.m.

Communicating With Coaches About Training Demands in Athletes With Sickle Cell Trait, (I), Advanced

Scott Anderson, ATC, University of Oklahoma

Scott Galloway, ATC, White Settlement Independent School District

Sickle cell trait (SCT) is an inherited condition. SCT status is a base element of personal health information and should be identified in the pre-participation physical examination. Exertional sickling is one of the four leading causes of exertion-related death in athletes. Preventing morbidity and mortality in athletes with SCT is dependent on knowledge of SCT status, targeted education and tailored precaution. Coaches must be knowledgeable in integrating precaution into science-based, sport-specific training programs. Exertional sickling fatality is preventable.

At the end of this session, attendees will be able to:

- Define and describe SCT
- Describe the pathophysiology of exertional sickling
- Educating coaches to signs and symptoms of exertional sickling and tailored precautions for athletes with SCT engaged in training for sport

Lectures, 1:30 p.m. – 2:25 p.m.

Providing Athletic Training Services to Paralympic Athletes, (I, V), Advanced

Brian Farr, MA, ATC, CSCS, University of Texas at Austin

Jenna Street, MS, ATC, U.S. Olympic and Paralympic Committee Sports Medicine

OD*

The awareness of adaptive sport worldwide has increased due, in part, to more than 1,000 hours of coverage of the 2021 Paralympic Games. With this increased awareness and inclusion of athletes with diverse abilities, there are greater opportunities to participate in adaptive sports in high schools, college, recreation leagues and beyond. Although there are many similarities treating the able-bodied and adaptive patient, there are also some stark differences. This session will explore basic principles of working with adaptive athletes that can be applied during your next patient encounter as well as provide information on pathways to work with adaptive sports.

At the end of this session, attendees will be able to:

- Describe the unique features of athletic training services within para-sport
- Identify the classification structure of para-sport
- Discover opportunities for athletic trainer para-sport involvement

ACL Injury in the Pediatric Athlete: A Review of the *Journal of Athletic Training* Special Issue, (I, II, IV), Essential

Presented by the NATA Journal Committee

The Effect of Physical Maturation on Primary ACL Injury Risk – Implications for Screening and Prevention
Sandra Shultz, PhD, ATC, FNATA, University of North Carolina at Greensboro

Strategies for Reducing Secondary Injury Risk and Optimizing Joint Health in the Pediatric Athlete Following ACL Injury

Brian Pietrosimone, PhD, ATC, University of North Carolina at Chapel Hill

The incidence of anterior cruciate ligament (ACL) injuries has increased steadily in pediatric athletes. The *Journal of Athletic Training* dedicated a special issue to understanding the effect of physical maturation on the ACL injury risk continuum in pediatric patients from the primary injury to the short- (secondary injury) and long-term joint health outcomes following ACL injury. Using the most current evidence gleaned from this special issue, this session will discuss: 1) an integrated model explaining risk development along this continuum; and 2) the evidence-based prevention and rehabilitation strategies that can be implemented at critical time points to decrease pediatric ACL injury and optimize joint health.

At the end of this session, attendees will be able to:

- Describe and identify the key factors that increase a pediatric athlete's risk of primary and secondary ACL injury
- Describe and identify the key factors that increase a pediatric athlete's risk for poor long-term outcomes following ACL injury
- Describe and apply therapeutic interventions for reducing risk of primary and secondary injury and optimizing long-term outcomes in the pediatric athlete

Who Cares About the P Value Anyways? Understanding and Applying Contemporary Research to Your Clinical Practice, (II, III, IV), Advanced

Robert Lynall, PhD, LAT, ATC, University of Georgia

Julianne Schmidt, PhD, LAT, ATC, University of Georgia

Best practices in sports medicine are constantly changing as new data becomes available to inform clinical practices. However, research papers are often written in a seemingly different language, with unnecessary jargon, convoluted statistical approaches and conclusions that don't match the data. For these reasons and more, many clinicians face unnecessary barriers to implementing research into their clinical practice. This session will demystify the research process so clinicians understand what goes into a published paper, discuss simple but important clinical statistics and provide strategies to implement contemporary research outcomes and in-house data collection into clinical practice.

At the end of this session, attendees will be able to:

- Summarize the research and peer-reviewed publication processes

- Apply clinical statistics to published research to better understand the clinical application of research data and data collected by clinicians in their work setting
- Critique peer-reviewed research in a way that allows the clinician to evaluate its application to their own clinical practice

Utilization of Performance Biometrics to Reduce Injury Risk and Guide Rehabilitation in a Division I Athletic Setting: A Team-Based Approach, (I, IV), Advanced

Jill Thein-Nissenbaum, PT, ATC, DSc, University of Wisconsin at Madison

Michael Moll, MEd, LAT, ATC, University of Wisconsin at Madison

Kurrel Fabian, DAT, LAT, ATC, University of Wisconsin at Madison

High-level athletics require a collaborative approach to rehabilitation efforts, with athletes, athletic trainers, physicians, and physical therapists, as stakeholders in the return-to-sport process. Potentially complicating the decision-making process among these parties is the plethora of data pertaining to an athlete's neuromuscular profile, body composition, movement mechanics, and performance characteristics. When properly collected and interpreted, this information provides objective, quantifiable data that can assist the sports medicine team with the design of injury prevention and/or rehabilitation programs, maintaining athlete health and optimizing on-field performance. However, the challenges of utilizing such data are significant and can impair successful clinical application. The purpose of this presentation is to provide the sports medicine team with an overview of the current athletic performance biometrics utilized in the development and implementation of training and rehabilitation strategies within a collegiate athletic environment. The science behind various assessments, meaningful interpretation, and clinical application of the findings will be discussed. Lastly, a case example will be presented illustrating the importance of collaborative effort among the rehabilitation team to utilize performance biometric data for successfully returning an athlete to sport.

At the end of this session, attendees will be able to:

- Identify commonly used performance testing metrics in collegiate athletics.
- Understand the frequency and timing of testing in relation to the sports season and recovery from injury.
- Understand the clinical relevance of various test results and the potential impact on training and rehabilitation.

Interactive Lectures, 1:30 p.m. – 2:25 p.m.

Using Directional Testing and Postural Provocation To Enhance Your Assessment of Lower Back Disorders, (II), Advanced

Kenneth Cieslak, DC, ATC, CSCS, Teaneck Board of Education

This interactive session will utilize a combination of lecture, attendee involvement and video analysis to examine an approach to assessing disorders of the thoracolumbar-pelvic regions by utilizing a

combination of movement screening, directional preference testing and provocative maneuvers. The goal of the session is to encourage participants to use an evidence-based approach in their orthopedic evaluation process as well as appreciate the role that repetitive motion and static postural loading play in identifying the motions, postures and loads that create further harm. Additionally, attendees will identify what needs to be modified to enhance the individual recovery process and empower the patient to help manage their recovery.

At the end of this session, attendees will be able to:

- Recognize key points to listen for in the history as well as look at the literature to assess the importance of range of motion testing and the reliability of selected special tests
- Evaluate the role movement screening protocols may play in low back assessment and, in particular, how directional preference testing and positional provocation maneuvers may provide an important basis to assist in diagnosis
- Examine the literature to determine which treatment options may provide the best approach to initial management and rehabilitation
- Practice utilizing directional preference and static and postural loading maneuvers, in conjunction with a standard orthopedic assessment process, and discuss how to interpret these findings to enhance their diagnostic acumen

Beyond Performance: Motor Imagery in Clinical Diagnosis, Intervention and Injury Prevention, (I), Advanced

Jody Andersen, PhD, ATC, PT, University of Tampa

OD*

Individuals often use motor imagery to improve performance. Further, inclusion of imagery strategies in the intervention plan to treat pain and facilitate functional recovery has been encouraged in textbooks and professional literature. Recent evidence suggests that using a systematic approach to motor imagery can be valuable in diagnosis, intervention and injury prevention for the ankle, knee and shoulder. In this session, the use of a graded approach to motor imagery for musculoskeletal examination and intervention will be presented. In addition, the current evidence related to the use of motor imagery for therapeutic and preventative interventions will be discussed.

At the end of this session, attendees will be able to:

- Identify the components of a graded approach to motor imagery in patients with musculoskeletal injury and for injury prevention
- Illustrate the underlying neurobiological foundations of this approach
- Outline the application of motor imagery as a component of injury prevention and therapeutic intervention programs
- Identify intervention strategies using a graded approach to motor imagery

Interactive Lecture, 3:55 p.m. – 4:50 p.m.

Treatment of the Athlete With Mechanical Low Back Pain: Where Does Manual Therapy Fit In?, (II, IV), Advanced

Sayers John Miller, PhD, PT, ATC, Penn State University

OD*

There's no clear prescription or protocol for the treatment of mechanical low back pain. This session is designed to provoke discussion on the topic of rehabilitation of athlete with mechanical low back pain, focusing on the role of manual therapy and its interaction with exercise and neuroscience education. Theoretical mechanisms of action as well as current evidence of effectiveness of interventions will be presented. There are no "correct" answers in the literature, so this will be an expert- and evidence-guided exploration of the topic.

At the end of this session, attendees will be able to:

- Explain the mechanisms of the effects of manual therapy on mechanical low back pain
- Defend the use of manual therapy in the treatment of their patients with mechanical low back pain
- Discuss a treatment plan to treat a patient with mechanical low back pain that includes manual therapy, exercise and neuroscience education

Lectures, 3:55 p.m. – 4:50 p.m.

Overcoming Barriers To Creating an Inclusive LGBTQIA+ Environment, (V), Essential

Presented by the LGBTQ+ Advisory Committee

Meredith Decker, PhD, LAT, ATC, University of Texas at Arlington

Rebecca Lopez, PhD, LAT, ATC, University of South Florida

OD*

The NATA Code of Ethics states athletic trainers have a duty to treat all patients, regardless of individualized factors, such as sexual orientation, gender identity, etc. ATs often utilize strategies to facilitate an inclusive environment, especially for lesbian, gay, bisexual, transgender, queer, intersex and asexual (LGBTQIA+) patients. Efforts to create a more inclusive facility and staff environment aren't always well-received and may be met with challenges that limit or halt these efforts. This session will address common barriers to creating an inclusive environment and provide strategies to overcome these challenges when implementing inclusive practices.

At the end of this session, attendees will be able to:

- Recognize challenges and barriers to creating an inclusive LGBTQIA+ environment
- Identify and explain the need for inclusive practices in health care facilities

- Apply strategies to overcome challenges presented when creating an inclusive LGBTQIA+ environment

Goldilocks and the Loading Barriers of Good Knee Health, (I, IV), Advanced

Don't Stop Until You Step Enough

Caroline Lisee, PhD, University of North Carolina at Chapel Hill

Walk Smarter and Harder

Brian Pietrosimone, PhD, ATC, University of North Carolina at Chapel Hill

OD*

The relationship between knee loading and joint health is complex. Multiple clinically relevant parameters including loading magnitude (i.e., measured with movement biomechanics) and frequency (i.e., measured with physical activity) influence joint tissue health and long-term patient-reported outcomes in those with an anterior cruciate ligament reconstruction (ACLR). Novel assessments and interventions can be used to address excessive and insufficient of the knee joint to promote long-term health in patients post-ACLR. This presentation will 1) describe optimal loading for promoting knee health following ACLR and 2) describe the evidence surrounding cutting-edge interventional strategies to normalize loading for everyday tasks and sport activities.

At the end of this session, attendees will be able to:

- Describe and identify the effects of excessive and insufficient loading following ACL injury and ACLR on poor knee joint function and long-term joint health
- Describe innovative assessment techniques to quantify excessive or insufficient loading follow ACL injury and ACLR
- Describe novel intervention strategies that target aberrant gait biomechanics and inadequate physical activity to promote optimal knee joint function and long-term joint health

Conversations About Organizational Conflicts for the Real World, (V), Essential

Presented by the NATA Early Professionals' Committee

Communication During Conflict and Negotiations: Advocating Your Needs

Stacy Walker, PhD, ATC, FNATA, Ball State University

Conflict Resolution for the Athletic Trainer: Coach, Parent, Co-worker, Athlete and Beyond

Jason Cates, LAT, ATC, Cabot Public Schools

OD*

The NATA Early Professionals' Committee aims to provide support to athletic trainers as they're introduced and transition into the workforce. Previous research and young professionals have expressed

the need for resources and education in common career challenges and conflicts. This session is aimed to address important real-world conversations about organizational conflicts, such as disagreements with colleagues and leadership. The goal of this session is to educate and foster confidence in the early professional to strengthen interpersonal communication skills and build lasting relationships throughout their athletic training careers.

At the end of this session, attendees will be able to:

- Identify conflicts from situations, behaviors and interactions that need to be addressed
- Utilize resources and tools that are available to the early professional to address and resolve the identified conflict
- Assess how the conflict resolution was achieved and establish if a follow up is needed

A Dental Review for Athletic Trainers, (II), Essential

Presented by the Academy of Sports Dentistry

Paul Nativi, DMD, FASD

For someone to be in good health, they must be in good dental health. It is important to be aware of oral conditions that are not normal. Sports related trauma is the key cause of dental injuries in athletes. The athletic trainers is key to the recognition, evaluation, emergency management of these conditions and injuries. Prevention of dental trauma is possible by wearing properly fitted mouth guards. The athletic trainer and the team dentist can work together in an effort to protect and treat the athlete and promote optimal oral health.

At the end of this session, attendees will be able to:

- Recognize abnormal oral conditions.
- Understand prevention of dental injuries thru properly fitted mouth guards.
- Understand recognition, evaluation and emergency management of dental trauma in sports.

Learning Lab, 3:55 p.m. – 5:55 p.m.

Making Clinical Data Work for You: An Interactive, Hands-On Experience in Turning Data Into Usable Information for Quality Improvement Efforts, (V), Advanced

Kenneth Lam, DSc, ATC, A.T. Still University

The collection and use of clinical data to improve patient care are integral components of contemporary health care. Although clinical data are routinely collected via electronic patient records, little emphasis has been placed on the steps by which clinicians can turn their data into usable information. The purpose of this presentation is to offer an interactive, hands-on experience in organizing, processing and analyzing clinical data to produce usable information. Specifically, a mock dataset will be provided to

attendees and used in the hands-on lab session to guide attendees through a real-life example of identifying practice gaps for quality improvement efforts.

At the end of this session, attendees will be able to:

- Explain how clinical data collected in a typical electronic patient records system can be used to improve quality of patient care (e.g., better inform patient care decisions such as medical care needs, identifying practice gaps and initiating quality improvement efforts)
- Compare the benefits and challenges, as they relate to data processing and analysis, associated with different types of variables (e.g., structured versus unstructured) routinely collected within a typical electronic patient records system
- Describe common considerations related to the process of extracting clinical data from an electronic patient records system (e.g., distinguishing between different file types, exporting data out of electronic patient records system and importing data into software platforms for data analysis such as spreadsheet software)

Interactive Lectures, 5:20 p.m. – 6:15 p.m.

Not Asking the Question Doesn't Change the Answer: Using Motivational Interviewing Strategies To Have Difficult Conversations With Patients, (III), Advanced

Jennifer Howard, PhD, LAT, ATC, Appalachian State University

Motivational interviewing (MI) is a communication strategy to help individuals resolve indecision regarding health behaviors. By guiding patients through an exploration of discrepancies between their current and desired state of health, clinicians can identify the patient's stage of change, evaluate self-efficacy and identify personal motivations for positive change. Whether discussing rehabilitation adherence, disordered eating, substance abuse or the need to seek additional mental health care, MI can be used to facilitate health behavior change and/or referral for additional care. During this session, attendees will learn the basics of MI and examples of how it can be applied to clinical practice.

At the end of this session, attendees will be able to:

- Create change by evoking open-ended questions, incorporating change rulers, looking backward/forward, identifying decisional balance and exploring goals and values to establish patient behavior discrepancies and motivations
- Implement motivational interviewing strategies, such as collaboration, evocation, autonomy and reflective listening, to facilitate patient-driven health behavior change and/or successful referral for additional health care services
- Apply the transtheoretical model of behavior change to determine the stage of change a patient is in regarding a health behavior

NATA Shared Professional Values: Learn To Recognize PV in Professional Practice, (V), Essential

Presented by the NATA Professional Responsibility in Athletic Training Committee
Gretchen Schlabach, PhD, ATC, Northern Illinois University

The NATA Professional Responsibility in Athletic Training Committee sought support from the NATA Board of Directors to identify shared professional values (PV) among NATA members. Membership response identified the following professional values to be important: caring/compassion, integrity, respect, competence and accountability (CIRCA). The athletic training profession has traditionally relied on a compliance orientation approach (e.g., code of ethics, practice standards, etc.) to guide professional conduct and uphold athletic training's social contract. Through the examination of practice behaviors and documents, the attendees will recognize that five shared PV exist in the fabric of, and transcend all, elements of professional practice.

At the end of this session, attendees will be able to:

- Describe the significance of both value and compliance orientation in guiding professional conduct
- Relate how the shared PV support the athletic training profession's social contract
- Critically analyze programmatic, institutional and organizational policies and procedures to evaluate and synthesize shared PV into contemporary guidelines and practices

Lectures, 5:20 p.m. – 6:15 p.m.

Appraising Athletic Trainers' Approach to the Clinical Assessment of Lateral Ankle Sprains and Associated Return-to-Sport Decisions, (II, IV), Essential

Ryan McCann, PhD, ATC, CSCS, Old Dominion University

OD*

Athletic trainers commonly care for lateral ankle sprain (LAS) patients, but often provide return-to-sport clearance before all injury-associated impairments have resolved. The persistence of injury-associated impairments contributes to the development of chronic ankle instability. Thus, ATs must conduct comprehensive clinical assessments to ensure the resolution of injury-associated impairments before providing return-to-sport clearance. Despite numerous expert recommendations for LAS evaluation, emerging evidence indicates that numerous personal and environmental barriers prevent ATs from evaluating all relevant impairments before providing return-to-sport clearance. Continued discussion of recommended clinical assessments to guide return-to-sport decisions will help ATs optimize care for LAS patients.

At the end of this session, attendees will be able to:

- Explain how athletic trainers' return-to-sport decisions can influence the future prognosis of LAS patients
- Describe clinician and patient-oriented outcomes that should be incorporated by ATs in their clinical assessment of LAS patients

- Describe common barriers to the implementation of comprehensive LAS clinical assessments and strategies for their mitigation

Exploring Systemic Racism Within Public Health, (I), Advanced

Is Racism a Public Health Crisis?

Kenya Moore, MS, SCAT, ATC, University of South Carolina

Racial Disparities in Health and Health Care

Toni Torres-McGehee, PhD, SCAT, ATC, University of South Carolina

Growth in scientific research examines multiple ways racism adversely affects health. Athletic trainers operate heavily in disciplines of public health with large roles in prevention, promotion of healthy behaviors and surveillance to enrich care. While exploring social determinants of health, it's imperative to consider systemic racism and racial/ethnic inequities. Anecdotal evidence indicates socioeconomic factors alone don't account for these inequities in health. This session will provide an overview of evidence linking primary domains of racism (systemic/structural, cultural) and individual level discrimination to mental/physical health outcomes. The session will also provide evidence for interventions reducing racism and development of equitable health care practices.

At the end of this session, attendees will be able to:

- Draw inference between the historical patterns of systemic racism/inequalities to the health care system
- Identify the impact of racism as a health disparity for minoritized communities
- Associate the primary domains of racism (systemic/structural, cultural) and individual level discrimination to mental/physical patient health outcomes
- Re-examine, develop and implement best practices for enhancing equitable health care

Shoulder Instability - Surgical Interventions, (II), Advanced

John Kelly, MD, Penn Medicine

OD*

A common injury athletic trainer's treat is shoulder instability. Most instability related problems pertain to injury to the anterior stabilizing structures – capsule and labrum. Superior (SLAP) and posterior labral injuries may also occur, albeit less frequently. This presentation will focus chiefly on the surgical treatment of anterior shoulder instability with a focus on the exam under anesthesia, indications for surgery and rationale for arthroscopic treatment. Glenoid and humeral head bone loss will be addressed as well as anatomic restoration of the capsule-labral complex.

At the end of this session, attendees will be able to:

- Describe the anatomy of the glenohumeral joint
- List indications for surgical treatment of anterior shoulder instability
- Summarize the surgical solutions for restoration of labral, capsular and bone injury.

THURSDAY, JUNE 30

Lectures, 7:30 a.m. – 8:25 a.m.

Workplace Injury Prevention and Follow Up Care: Giving ATs More Room To Move, (I, IV, V), Advanced

Tiffany McGuffin, MS, LAT, ATC, Pivot Onsite Innovations

Zachary Prater, MS, LAT, ATC, Pivot Onsite Innovations

OD*

Developing an injury prevention program can lead to increased ergonomic awareness within workers. The current literature isn't definitive on the effectiveness of pre-shift stretching alone to reduce work-related injuries, but developing a holistic prevention program can address the needs of both the worksite and clients to improve client outcomes and improve patient satisfaction. This session will give ATs working in all settings that utilize workers' compensation the tools to develop a standardized program to prevent work-related injuries, and then use that program to provide subsequent follow-up care within the operational standards of Occupational Safety and Health Administration (OSHA).

At the end of this session, attendees will be able to:

- Compare outcomes of traditional pre-shift programs most practiced in the industrial and occupational sites to strengthening wellness programs
- Illustrate ways that a sitewide wellness program can be utilized after a work-related injury has occurred to keep within the confines of OSHA first aid
- Discover ways that a solid injury prevention program can integrate the AT more fully into the site's safety culture and initiatives
- Develop a program that will be able mitigate recordability within the team members
- Identify barriers to implementing workplace injury prevention programs

Hips Don't Lie: Keys to Successful Rehabilitation for Chronic Hip Pain, (IV), Essential

Kate Jochimsen, PhD, ATC, West Virginia University

Chronic, non-arthritic hip pain is common in young, active individuals. Non-operative and post-operative rehabilitation can be challenging for clinicians to navigate. To help guide rehabilitation protocols, this session will summarize the current evidence for movement and functional impairments common to these athletes. Further, it will describe effective rehabilitation interventions to target such impairments (movement pattern training, biofeedback, manual therapy), expected clinical outcomes (pain, function and return to sport) and comprehensive return-to-sport testing. An evidence-based approach to the rehabilitation of chronic, non-arthritic hip pain can help improve pain, function and return-to-sport outcomes for these athletes.

At the end of this session, attendees will be able to:

- Implement rehabilitation interventions (movement pattern training, biofeedback, manual therapy) to correct impairments common to chronic, non-arthritis hip pain
- Educate athletes, parents and coaches on prognosis and plan of care outcomes for chronic, non-arthritis hip pain
- Implement return-to-sport testing criteria

Assessment and Management of the Cervical Spine: The Athletic Trainer and Contemporary Approaches to Cervical Spine Dysfunction, (II), Advanced

Bradley Muse, DC, AT, CSCS, Columbus Chiropractic and Rehabilitation Center

The assessment and treatment of non-traumatic cervical and upper quarter complaints has proven to be an area of uncertainty and diffidence in the athletic training profession for many years. While athletic trainers are some of the most capable in managing acute and severe cervical spine injuries, there is a knowledge gap in the realm of assessing and managing non-traumatic cervical and upper quarter complaints. In this presentation, areas of assessment, such as McKenzie Method of Diagnosis and Therapy and Dynamic Neuromuscular Stabilization, will be covered, as well as therapeutic interventions stemming from the same paradigms.

At the end of this session, attendees will be able to:

- Identify the different classifications defined by the McKenzie Method of Diagnosis and Therapy.
- Apply Dynamic Neuromuscular Stabilization principles in the treatment of cervical spine dysfunction.
- Develop a comprehensive treatment plan combining methodology from various treatment paradigms.
- Interpret examination findings and develop a treatment strategy based off of findings.
- Recognize cases that will need appropriate referral for further care.

Interactive Lectures, 7:30 a.m. – 8:25 a.m.

Get Your Motor Running: How Do We Restore Function to an Inhibited Muscle?, (IV), Advanced

Alan Needle, PhD, ATC, CSCS, Appalachian State University

Motor inhibition is a barrier athletic trainers must overcome in returning patients with injuries to function while minimizing risk of reinjury. While isotonic strengthening interventions benefit motor function, recent evidence has shown motor activation is achieved through atypical pathways, such as utilizing frontal and visual cortices, rather than disinhibiting the motor cortex, contributing to reinjury upon return to activity. The purpose of this session will be to discuss and demonstrate techniques that lead to motor disinhibition and subsequently improve function in patients with musculoskeletal injuries, such as neuromuscular electrical stimulation, use of eccentrically focused exercise and implementing transcranial direct current stimulation in rehabilitation.

At the end of this session, attendees will be able to:

- Recognize signs of motor inhibition and summarize the negative effects this injury sequela has on risk of reinjury
- Select and implement clinically accessible interventions that emphasize motor disinhibition, including selecting parameters of neuromuscular electrical stimulation, eccentric exercise and transcranial direct current stimulation
- Interpret and integrate the available evidence regarding the effects of disinhibitory interventions, including the populations and phases of rehabilitation where each might be most beneficial

The Limitations of Unconscious Bias, Microaggressions and Its Effect on Athletic Training, (I, V), Essential

Jaclyn Morrissette, PhD, ATC, William Paterson University

Michele Monaco, DSc, LAT, ATC, Immaculata University

Unconscious bias refers to ways people unknowingly draw on assumptions about individuals and groups to make decisions about them. Researchers have documented unconscious bias in a variety of contexts and professions. These studies demonstrate unfavorable impacts underpinning marginalized groups, creating judgments concerning sexism, racism, ableism, classism, ageism and heterosexism. Striving to counteract unconscious bias will develop promising leadership within health care settings. This session will identify sociocultural barriers and develop intervention strategies to minimize bias and prejudice to improve patient care and outcomes. It will facilitate deconstructing past behaviors to embrace and intertwine neuroscience research concerning how unconscious bias influences health care.

At the end of this session, attendees will be able to:

- Discover the neuroscience behind unconscious bias
- Recognize the gaps in diversity, equity and inclusion through the lens of unconscious bias and microaggressions to prepare quality interpersonal interaction
- Identify strategies on how to prevent making unconscious biases that influence personal interactions
- Develop a strategy on how to incorporate unconscious biases and conscious thought into athletic training education

Learning Lab, 7:30 a.m. – 9:30 a.m.

Evaluation and Treatment of Peripheral Vestibular Dysfunction: Demystifying Benign Paroxysmal Positional Vertigo, (II), Advanced

David Wilkenfeld, EdD, LAT, ATC, Moravian College

Vestibular dysfunctions, which can present as dizziness, vertigo or disorientation/balance issues, are one of the major complaints reported following a head injury and are often associated with prolonged symptom reporting. Of these dysfunctions, benign paroxysmal positional vertigo (BPPV) is commonly

associated with post-concussive symptoms and is the most common cause of vertigo in the general public, affecting approximately 2.4% of individuals across their lifespan. Although not outside of their scope of practice, many ATs don't receive the appropriate training during their professional education to appropriately identify and treat these conditions. This session will help fill this practice gap by providing ATs with an evidence-based approach to the evaluation and treatment of BPPV. This lab is a follow up to the 2020 NATA Virtual Clinical Symposia & AT Expo session on the same topic.

At the end of this session, attendees will be able to:

- Explain the pathophysiology behind BPPV
- Relate clinical signs and symptoms with diagnostic test findings to accurately diagnose BPPV in the athletic training facility
- Recommend appropriate referrals, return-to-activity criteria and documentation coding for patients with BPPV

Scapular Dyskinesia Evaluation and Treatment, (II, IV), Essential

Tim Uhl, PhD, ATC, FNATA, University of Kentucky

Scapular motion is critical for normal motion and function of the upper extremity, It is the critical link between the trunk and upper extremity, is the site of multiple muscular attachments, and provides a mobile base for the humerus to maintain glenohumeral stability. The approach described in this presentation takes an integrated approach incorporating the kinetic chain model, motor control pattern of proximal to distal activation, and incorporating many principles of proprioceptive neuromuscular facilitation to achieve the goals of restoring function. Consideration for the individual impairments and the environment that the individual lives must be integral to the intervention as the patient is often attempting to return to the same activity that may have precipitated the initial injury.

At the end of this session, attendees will be able to:

- Summarize a logical assessment algorithm to determine potential causes of scapular dyskinesia.
- Summarize logical strengthening progression for regaining shoulder and scapular muscle strength and mobility.
- Describe scapular dyskinesia and its components.

Forum, 8:55 a.m. – 9:50 a.m.

Incorporating Intersectionality Into LGBTQIA+ Patient Care, (I), Essential

Emma Nye, DAT, LAT, ATC, Grand View University

Ashley Crossway, DAT, ATC, State University of New York at Cortland

LGBTQIA+ individuals have historically faced stigmas, discrimination and barriers to health care, ultimately leading to negative health care experiences and outcomes. Athletic trainers have worked to incorporate inclusive health care practices into their athletic training facilities, and in recent years have largely focused on those who identify as lesbian, gay and bisexual. Patients who have multiple identifiers, such as those who identify as transgender and non-white, have additional barriers to care

that lead to poor health outcomes. Athletic trainers must improve understanding of intersectional experiences in order to become more culturally competent and patient centered.

At the end of this session, attendees will be able to:

- Identify health inequities across marginalized populations
- Explore how multiple identities impact health outcomes
- Develop strategies to provide inclusive, holistic health care to transgender patients

Interactive Lecture, 8:55 a.m. – 9:50 a.m.

Say 'Ahh' for the Camera: Strategies for Implementing Telehealth into Athletic Training Practice, (II), Essential

Meredith Madden, EdD, LAT, ATC, University of Southern Maine

Dominique Ross, PhD, LAT, ATC, University of Southern Maine

OD*

Telehealth is an important tool for athletic trainers to implement into clinical practice well beyond the COVID-19 pandemic to provide safe and effective patient care as well as equitable access to rural or underserved populations. However, telehealth presents challenges in being able to complete a thorough evaluation due to the limitations on physical examination, non-verbal communication and technology considerations. This session will introduce ATs to telehealth strategies to ensure patient confidentiality, obtain a thorough history and gather objective findings by participating in an introductory lecture and interactive sessions, including a tele-simulation experience using a standardized patient and group debrief.

At the end of this session, attendees will be able to:

- Define telehealth and strategies for establishing a safe and confidential space
- Identify challenges and solutions to implementing telehealth in athletic training practice
- Identify and apply effective approaches to gathering patient history via telehealth
- Demonstrate objective exam by effectively obtaining findings via telehealth

Lectures, 8:55 a.m. – 9:50 a.m.

Empathy Toward People of Different Race and Ethnicity: Delivery of Health Care Through Ethnocultural Empathy, (I, II, V), Essential

Kim Evans, ATC, Idaho State University

Dani Moffit, PhD, LAT, ATC, Idaho State University

The U.S. demographics are changing to a more culturally and ethnically diverse population. Therefore, change is required in ways health care providers address illness and wellness issues among those different from them. Two relevant factors of health disparities are race and ethnicity. Ethnically minority patients report less involvement in medical decision-making, less partnership with physicians and lower satisfaction levels with care received. Due to this shift in demographics and subpar care provided to

ethnically diverse groups, it's important to increase minority providers and educate future professionals on cultural competence in order to improve quality health care to minority groups.

At the end of this session, attendees will be able to:

- Discuss ethnocultural empathy in their own practice
- Determine their own level of empathy toward others
- Describe the meanings of intellectual empathy, empathic emotions and communication empathy and their roles in health care
- Implement a plan to cultivate the development of ethnocultural empathy in their practice

Whole-Body Reactive Agility Metrics To Identify Athletes With a Core and Lower Extremity Injury Risk, (I, II, V), Advanced

Scott Bruce, EdD, ATC, Arkansas State University

Prediction modeling is useful in addressing several orthopedic conditions. Athletes, due to their injury rates, provide a good population for attempting to predict injuries. Performance metrics can be assessed using many different tests. Asymmetry, the difference between right-left performances, has been identified as a possible injury risk factor. But, little research has investigated the role of asymmetry as a predictor of musculoskeletal injury. The purpose of this presentation will be to present methods to determine the whole-body reactive agility metrics, including movement asymmetries, which would identify athletes who might be at elevated risk for core and lower extremity injuries.

At the end of this session, attendees will be able to:

- Apply the procedures to determine whole-body reactive agility asymmetries
- Establish a battery of tests for determining potential musculoskeletal deficiencies
- Interpret the findings of individual tests and combination of tests to determine deficiencies to be addressed
- Generate an appropriate remedial exercise program to address whole-body reactive agility asymmetries
- Estimate an individual's risk for suffering a musculoskeletal injury

The Esports Athlete and the Role of the Athletic Trainer, (I, IV), Essential

Nicholas Grahovec, PhD, ATC, CSCS, Northern Illinois University

Tyler Wood, PhD, ATC, Northern Illinois University

OD*

In recent years, colleges and universities added more than 200 esports teams to their list of intercollegiate and club activities. The esports student athlete may not resemble the traditional student athlete, but they suffer a variety of health concerns ranging from upper extremity dysfunction to mental health disorders. As institutional incorporation of esports may vary, so does the role of athletic trainers with esports-related injuries. Thus, the athletic trainer may have limited knowledge of this new area of

active individuals. The aim of this session is to introduce esports and elaborate on the potential role of athletic trainers with esports student athletes.

At the end of this session, attendees will be able to:

- Describe esports and its entrance into modern intercollegiate athletics
- Identify the potential role the athletic trainer has with the esports student athlete
- Discover ways to incorporate the esports student athlete within current health care and sports medicine programs

Engaging, Developing and Advancing Future Association Leaders, (V), Essential

Presented by the NATA State Association Advisory Committee

Greg Janik, DAT, LAT, ATC, King's College

Michael Moll, MEd, LAT, ATC, University of Wisconsin at Madison

Many athletic trainers seek leadership opportunities within their work settings and volunteer associations, yet lack training and experience prior to taking such a role. This session will discuss available leadership programs, including the NATA State Association Advisory Committee's Emerging Leader Toolkit and Leader Fellow Program. The presenters will show how these programs can be used to improve basic internal and external business functions (e.g., planning, operations, staffing, etc.) within an organization, or how to seek advanced experiential opportunities supporting multiorganizational growth, development and sustainability. These programs will help grow ethical leaders who understand statutory and regulatory provisions and the professional standards of athletic training.

At the end of this session, attendees will be able to:

- Identify and differentiate two currently available SAAC leadership programs, including the Emerging Leader Toolkit and the Leadership Fellow Program, to improve personal and organizational outcomes
- Recognize the importance of basic internal and external business functions to develop effective policies and procedures with established documentation necessary for athletic training organizations sustainability, growth and development through these leaders

Evidence Based Injury Prevention of Upper Extremity Overuse Injuries in Baseball, (I, II, IV), Advanced

Paul Buchheit, MS, LAT, ATC, Philadelphia Phillies

Overuse injuries of the upper extremity (UE) are the most prevalent injuries in baseball often requiring lengthy recovery as well as affecting skill development and performance. Injuries to the elbow, specifically the ulnar collateral ligament (UCL), are of special concern due to the trend in the younger population in recent years. While quality evidence to support injury risk identification and prevention is still emerging, athletic trainers can utilize their clinical based reasoning with the best available evidence to create an integrated injury prevention strategy.

At the end of this session, attendees will be able to:

- Identify upper extremity injury trends in baseball.
- Analyze injury risk factors and interpret meaningful changes in clinical presentation.
- Formulate an integrated injury prevention strategy specific for the upper extremity.

Lectures, 10:20 a.m. – 11:15 a.m.

Evaluation and Treatment of Postural Orthostatic Tachycardia Syndrome: An Autonomic Nervous System Disease Known as Dysautonomia, (II, III, IV), Advanced

Kelly Lumpkin, PhD, LAT, ATC, Liberty University

Jeffrey Widmeyer, MD, FACS, RPVI, Vein and Cosmetic Solutions

Postural orthostatic tachycardia syndrome (POTS) can present as lightheadedness, fainting and an increase in heart rate as a person stands. It affecting approximately 1 million to 3 million people. Some patients can't compete or return to work until symptoms are manageable. POTS is often misdiagnosed by doctors as anxiety, panic attacks, depression or some other psychological disorder. Although not outside of their scope of practice, many athletic trainers don't receive the appropriate training to accurately identify this condition. This session will help fill the professional practice gap by providing athletic trainers with the evidence needed to evaluate and treat POTS.

At the end of this session, attendees will be able to:

- Describe the pathophysiology behind POTS
- Identify clinical signs and symptoms and diagnostic test findings to accurately diagnose POTS in the athletic training facility
- Identify appropriate referrals and return-to-activity criteria for POTS

Kinetic Chain Connections: Working Backwards From Injury To Identify the Weak Links, (I, II, IV), Essential

Raena Steffen, MS, LAT, ATC, Children's Orthopaedic & Scoliosis Surgery Associates

While injuries are deemed either chronic or traumatic in nature, there often are predisposing factors that can increase injury risk and potentially delay rehabilitation and subsequent successful return to play. Identification of these weak links along the kinetic chain can help improve injury outcomes as well as potentially prevent reinjury or chronic and/or overuse injuries from occurring. This session will outline key components of the kinetic chain for both upper extremity and lower extremity dominant sports, highlighting muscular imbalances, flexibility constraints and will provide screening tools and rehabilitative recommendations.

At the end of this session, attendees will be able to:

- Identify the components of the body's kinetic chain, including upper and lower, as well as the difference between closed- and open-chain movements
- Recognize common risk factors for injury that are located away from the site of concern along the kinetic chain

- Construct rehabilitation and injury prevention programs inclusive of the kinetic chain and the athlete as a whole, not just the specific joint or muscle group in question

'De-ICED': Weaning Athletic Trainers off Their Dependency on Rest-Ice-Compression 2022 and Beyond, (III, IV), Advanced

Thomas Kaminski, PhD, ATC, FNATA, University of Delaware

OD*

Rest, ice, compression, elevation (RICE) was a term first introduced in 1978 by Dr. Gabe Mirkin as the treatment of choice for acute sports injuries. RICE has become a cornerstone of acute therapies in athletic training for decades, yet the evidence supporting its usage and effectiveness has been inconsistent and, in some instances, controversial. In fact, rest, ice and compression may actually delay the healing process and become an impediment to the natural inflammatory process. The shift to mild movement (passive, active-assisted, active) helps to heal tissues faster and facilitate the body's own immune responses in support of the inflammatory mechanisms. While ice, such as cryotherapy, has shown some analgesic benefits, active recovery involving movement to assist the body's own natural healing mechanism is becoming better understood and use in sports health care emerging. The phrase "just ice it" is taking on a completely new meaning in sport-injury care circles in the 21st century and athletic trainers have a very influential role in creating the contemporary changes taking place. The purpose of this session is to provide athletic trainers with a historical look at RICE in treating athletic injuries, provide counter arguments against RICE based on solid scientific and medical evidence and provide alternative treatment solutions involving active recovery that will benefit athletic trainers in a variety of clinical settings.

At the end of this session, attendees will be able to:

- Gain knowledge and understanding of the concept of acute injury inflammation from a treatment intervention perspective
- Distinguish and comprehend which physiological processes and systems (circulatory, immune, lymphatic, musculoskeletal) that are most important in acute sport-injury management
- Review the history of RICE in acute sport-injury management and decode the myths associated with rest, ice and compression, especially the concept of "secondary cellular death," by using contemporary evidence-based research and offer alternative solutions to athletic trainers involved in acute sport-injury management
- Gain a greater appreciation/understanding for tissue preservation and regeneration, along with the functional restorative processes in the human body
- Gain a greater understanding of the importance of active (controlled) movement post-acute injury and the timetable and benchmarks for promoting treatment progressions

Debunking Race-Based Medicine, (I, II, III, IV, V), Essential

Presented by the NATA Intercollegiate Council for Sports Medicine

Jamie DeRollo, DAT, MBA, ATC, Modesto College

Racial discrimination in medicine is prevalent for patients and clinicians. There is considerable evidence that people from minority ethnic groups are discriminated against at each stage of their medical careers. Medicine is replete with examples of racial injustice inflicted by the use of race and ethnicity as biological constructs to engender hierarchical discrimination. Race and ethnicity are dynamic, shaped by geographic, cultural and sociopolitical forces; they can influence people's socioeconomic position and lead to disproportionately high morbidity and mortality rates among racial and ethnic minorities by sustaining inequitable access to resources, including health care.

At the end of this session, attendees will be able to:

- Identify the core criticisms of race-based medicine and what athletic trainers can do to proactively oppose it in clinical practice, medical education and research
- Recognize the differences in access to resources and opportunities that can hurt or enhance health care
- Analyze current practice and actively stamp out race-based medicine

We Can't Expect Equal Outcomes with Unequal Resources: Addressing Barriers to Concussion Care through a Health Equity Lens, (II), Essential

Race and Concussion Outcomes

Jessica Wallace, PhD, LAT, ATC, University of Alabama

OD*

Social determinants of health (SDOH) are social factors that can have direct or indirect effects on health, and they play a fundamental causal role in understanding health outcomes. Specifically, where individuals live, learn, work, play, etc. powerfully shape health; and, these SDOH have a strong connection to athletic training healthcare. More specific to concussion as a sphere of athletic training healthcare, consensus statements and published literature advocates for individualized patient care considering that a concussion injury itself is highly heterogeneous. With this concept, understanding how SDOH may affect or impact care for a concussion is highly necessary. Ways in which different SDOH have been documented in concussion literature include racial, socioeconomic, and athletic training access disparities that drive disparities in concussion knowledge, attitudes, reporting behaviors, symptoms, baseline assessment measures, and outcomes. Understanding these disparities and barriers can help to improve patient-centered care and health equity pertaining to concussion.

At the end of this session, attendees will be able to:

- Gain knowledge in disparities and barriers to improve patient-centered care and health equity pertaining to concussion.
- Describe social determinants of health and their role in understanding health outcomes.
- Describe disparities in concussion knowledge, attitudes, and reporting behaviors.

Learning Labs, 10:20a.m. – 12:20 p.m

Managing ACLR Rehabilitation with Personalized Blood Flow Restriction Training, (IV), Advanced

Ziad Dahdul, PT, DPT, OCS, Ignite Physio

This session will cover the key components of personalized blood flow restriction (PBFR) training and how to best apply it in order to maximize recovery following an anterior cruciate ligament reconstruction (ACLR). Recent literature will be highlighted that covers how BFR may be best used throughout the ACL rehab continuum in order to optimize the recovery process

At the end of this session, attendees will be able to:

- Explain what PBFR is and the mechanisms of adaptation.
- Explain how PBFR can be used during the early stages of ACLR rehab to optimize recovery.
- Understand the specific physiologic targets when applying PBFR to optimize post-ACLR recovery.
- Safely apply principles of loading utilizing PBFR to improve strength and hypertrophy of the involved limb.

Manual Therapy Techniques of the Cervical Spine, (II, IV), Essential

Jill Manners, PhD, ATC, University of Georgia

Although cervical spine pain is a common complaint in patients of all ages and activity levels due to insidious or acute mechanisms. However, it is also an area that few athletic trainers are comfortable with treating. Therefore, it is essential that athletic trainers be familiar with the assessment and treatment of the upper cervical spine. This session will focus on the performance of manual therapy treatment techniques of the cervical spine and associated joints according to the available literature. Additionally, the 2020 CAATE Standards include: “Standard 73 Select and incorporate interventions (for pre-op patients, post-op patients, and patients with nonsurgical conditions) that align with the care plan. Interventions include (but are not limited to) the following:…Joint mobilization and manipulation” yet many athletic trainers have never been formally educated in the performance of manual therapy techniques of the spine.

At the end of this session, attendees will be able to:

- Explain normal anatomy and joint biomechanics of the cervical spine.
- Identify patients likely to benefit from mobilization or manipulation.
- Identify contraindications and precautions to manual therapy of the cervical spine.

Lectures, 11:45 a.m. – 12:40 p.m.

Navigating the Examination of Medical Conditions, (II), Essential

Micki Cuppett, EdD, LAT, ATC, Micki Cuppett Consulting

Many practicing athletic trainers may not have had a separate medical conditions course during their professional preparation. This session will review examination of medical conditions, including differences from a focal orthopedic examination, and provide attendees with tips to improve their examination techniques of common medical conditions in the physically active. Signs, symptoms and red flags for medical conditions will be reviewed along with examination techniques for various systems and comorbidities.

At the end of this session, attendees will be able to:

- Differentiate between a focal orthopedic examination and a medical examination of conditions that may affect an organ system
- Recognize common pathological conditions, including signs and symptoms, differential diagnosis and standard medical treatment for common non-musculoskeletal conditions in the physically active
- Identify appropriate initial management of common disorders and conditions that may preclude the athlete from participation and recognize which symptoms are self-limiting
- Develop a plan with online resources to practice examination of medical conditions

The Athletic Trainers' Role in Gender-Affirming Health Care and Inclusive Athletic Participation for Transgender Athletes, (I), Essential

Emma Nye, DAT, LAT, ATC, Grand View University

Jennifer Raybern, MS, ATC, CSCS, Ottawa University

Transgender patients face barriers to athletic participation as well as access to inclusive health care. As more transgender athletes continue to be included within organizational sports, ATs must have a foundational level of knowledge regarding inclusive health care. Additionally, ATs must understand their role in not only gender affirming health care, but also in patient and stakeholder education regarding current participation policy. Researchers in athletic training demonstrated that ATs were comfortable treating patients who identified as transgender yet lacked comfort and competence in specific aspects of transgender patient care; therefore, the purpose of this session is to provide additional clinical and advocacy strategies for transgender patients.

At the end of this session, attendees will be able to:

- Identify resources available to aid in the equitable treatment of transgender athletes
- Integrate best practices in providing equitable health care to transgender athletes
- Describe clinical considerations for ATs providing gender-affirming health care to transgender athletes
- Review current policies regarding transgender sport participation for a variety of athletic organizations

Let's Talk About Sex(ual Conduct): The Position of Power, (I, V), Advanced

Dani Moffit, PhD, LAT, ATC, Idaho State University

Jamie Mansell, PhD, LAT, ATC, Temple University

OD*

Athletic trainers are health care providers committed to practicing in alignment with the NATA Code of Ethics and BOC Standards of Professional Practice. In a patient-provider relationship, the power dynamics can place either individual in the position of power. The patient is vulnerable due to injury or illness, and expects the provider to act in their best interest. However, the athletic trainer may also be vulnerable in situations in which someone else exhibits power, such as a coach or athlete. As a profession, there needs to be a clear stance on the primacy of the patient and the protection of all members.

At the end of this session, attendees will be able to:

- Discuss the gray areas of sexual exploitation
- Determine the best way to protect themselves from sexual exploitation
- Share their experiences and contribute to better understanding of how to be better in this area
- Implement a plan for ending power situations in their place of employment

Factors That May Influence the Response to Critical Incidents and Biopsychosocial Elements of Self-Care for the Athletic Trainer, (I, II, III, V), Essential

Presented by the NATA ATs Care Commission

Biopsychosocial Elements of Self-Care for Athletic Trainers

Timothy Neal, MS, ATC, CCISM, Concordia University at Ann Arbor

Recognizing Compassion Fatigue in Athletic Trainers

Mark Cairns, LAT, ATC, PRT, Neu Physical Therapy

OD*

The athletic trainer is involved in critical incidents (e.g., emergencies occurring to athletes or patients) throughout their career. The psychological response by the athletic trainer to a critical incident is a vital concern in navigating the aftermath of the incident, and may well influence their overall well-being and retention in the athletic training profession. Two areas for consideration in the aftermath of a critical incident for the athletic trainer are compassion fatigue and burnout that may exacerbate their response to a critical incident, and the biopsychosocial elements of self-care. This session will address the issues that may affect the athletic trainer's response to a critical incident and offer biopsychosocial considerations to enhance their hardiness and well-being.

At the end of this session, attendees will be able to:

- Describe the prevalence of mental health disorders and their influence on the response to critical incidents
- Recognize compassion fatigue as it relates to athletic training practice and burnout
- Implement the biopsychosocial elements of self-care for themselves and others to prevent burnout

Moving Away from Race-Based Practice, (V), Essential

Presented by the NATA Ethnic Diversity Advisory Committee

Jeffrey Kawaguchi, ATC, PT, Pacific University

According to the Human Genome Project (2014), the genome between socially constructed racial groups is 99.5% to 99.9% identical, and the 0.1% to 0.5% variation between any two unrelated individuals is greatest between individuals in the same racial group. In spite of this knowledge, race continues to be used as a biological reality in health disparities research, medical guidelines and standards of care, reinforcing the notion that racial and ethnic minorities are inferior. This session will discuss how the continued misuse of race in medicine reinforces this racial hierarchy, and represents examples of racism in medicine that harms all of us.

At the end of this session, attendees will be able to:

- Define and describe the term race-based practice
- Provide examples of race-based practice in health care professions
- Identify and eliminate any inappropriate use of race in their own practice

PFATS: Ronnie Barnes Educational Session, (I, II, IV), Essential

Presented by the Professional Football Athletic Trainers Society

The Importance of Deceleration in Sport

Jon Hernandez, PT, DPT, SCS, Los Angeles Rams

Criterion Based Progression for ACL Rehabilitation

Justin Maher, PT, DPT, ATC, New York Giants

Athlete Specific Mobility and Movement for Performance

Julie Frymyer, DPT, MS, PT, Kansas City Chiefs

The PFATS Ronnie Barnes Educational Session aims to provide athletic trainers education, tools, and techniques that can be practically applied across a wide variety of health care settings. This year's series will focus on return to sport/activity and individualized movement and screening for performance.

At the end of this session, attendees will be able to:

- Identify critical movement patterns as they relate an athletes' overall performance.
- Define various objective criteria used to progress varying stages of ACL rehab.
- Analyze and determine results of these criteria to implement and return to sport program.
- Implement corrective exercises based on quality of movement patterns.

Forum, 11:45 a.m. – 12:40 p.m.

Best Practices and Barriers to Implementing Concussion Rehabilitation and Patient-Reported Outcome Measures, (IV), Advanced

Janet Simon, PhD, ATC, Ohio University

Thomas Bowman, PhD, ATC, University of Lynchburg

Concussion rehabilitation has evolved dramatically in the past five years. As a result, best practices to achieve a safe return to participation and good mental wellness outcomes remain elusive due to the continuous dissemination of new information in journals not readily available to athletic trainers. This forum will discuss evidence surrounding general exercises and focused concussion rehabilitation as well as appropriate patient-reported outcome measures to track concussion outcomes.

At the end of this session, attendees will be able to:

- Summarize the evidence for general exercises and focused concussion rehabilitation on safe return to participation and mental wellness outcomes
- Identify opportunities to optimize athletic training clinical practice with regards to implementing concussion rehabilitation best practices
- Summarize the evidence on appropriate patient reported outcome measures related to concussion rehabilitation

Interactive Lecture, 11:45 a.m. – 12:40 p.m.

Hamstring Injury Risk Mitigation: New Concepts and Future Directions, (I), Advanced

Thomas Waters, MS, MHPS, LAT, Utah Jazz

OD*

Hamstring injuries (HSI) are a major source of person-games lost for a plethora of sports and recreational pursuits. These types of muscle injuries are notoriously difficult to prevent, particularly in repeat-injury scenarios. This session will focus on the latest in evidenced-based and empirical research available to obtain an understanding in end-user athletic trainers can mitigate hamstring injury risk in athletes and patients. Particular attention will be paid to types of exercise, training loads and techniques that have been shown to significantly lower the risk of HSI.

At the end of this session, attendees will be able to:

- Identify the risk factors that lead to HSI
- Recognize different types of HSI and their return-to-play timelines
- Identify the types of training techniques and exercises that are most effective in reducing HSI risk
- Develop programming that utilizes these techniques and exercises to mitigate HSI risk.

Lectures, 1:40 p.m. – 2:35 p.m.

Dry Needling: What's the Point?, (I, IV), Advanced

Sue Falsone, PT, SCS, ATC, S&F: Structure and Function Education, PLLC

OD*

Dry needling is a treatment intervention that is gaining popularity in the U.S. among a variety of health care practitioners, including athletic trainers. Dry needling is a skilled intervention that inserts a thin monofilament needle(s) to penetrate the skin and underlying structures, stimulating the underlying neural, muscular and connective tissues. This insertion creates a healing response within the tissue that can be used to treat a variety of neuromusculoskeletal conditions and assist in pain management. This session will explain the physiological pathways of dry needling, discuss safety concerns and demonstrate via video clinical application.

At the end of this session, attendees will be able to:

- Interpret the science of dry needling and how it affects the body
- Explain the technique of using dry needling
- Describe different uses for dry needling while a patient is training
- Describe different uses for dry needling during the rehabilitation process

Guillain-Barre Syndrome: Rare but Serious, (II), Essential

Janet Craft, MA, LAT, ATC, LaGrange College

Signs and symptoms of Guillain-Barre syndrome (GBS) are similar to several conditions that athletic trainers are exposed to on a normal basis. GBS is an autoimmune response to previous conditions such as respiratory illness. It's a rare condition that isn't widely discussed in athletic training education programs or continuing education opportunities. With new data showing the development of GBS in those who have had COVID-19, it's important for athletic trainers to be able to recognize this condition and, ultimately, decrease the time from diagnosis to treatment, leading to better prognosis.

At the end of this session, attendees will be able to:

- Summarize the nervous system and nerve anatomy
- Interpret the history, signs, symptoms, diagnostic tools and management of GBS
- Contrast the differences between GBS and similar signs and symptoms of other conditions
- Define the role of the athletic trainer in the rehabilitation process for GBS

Adverse Childhood Experiences and the Athlete: An Introduction to a Trauma-Informed Care, (I), Essential

Ashley Long, PhD, LAT, ATC, Mt. Olive Family Medicine Center

Allison Bickett, PhD, Atrium Health

OD*

Adverse childhood experiences (ACE) are traumatic events that occur during childhood, including exposure to violence, abuse, substance use, mental health issues and parental separation. ACE can negatively impact mental and physical health in adulthood. More than 64% of adults report one ACE and 20% report more than three. The impact of ACE can be mitigated with connection to supportive adults and positive activities that promote social-emotional learning and coping. Athletic trainers are uniquely positioned to support individuals who have experienced ACE by assessing mental health, developing a robust referral network and providing trauma-informed care.

At the end of this session, attendees will be able to:

- Define ACE and their impact on mental and physical health
- Implement a trauma-informed approach to the roles and responsibilities of athletic training
- Develop a compendium of developmentally appropriate trauma-informed resources, referrals and brief interventions

Facilitating Race Dialogue with Preceptors Working with Student-Athletes and Athletic Training Students, (V), Essential

Tamaria Hibbler, MS, AT, ATC, University of Arkansas

Approximately 35% of all National Collegiate Athletic Association (NCAA) athletes are of a racial or ethnic minority. It is important that healthcare providers and athletic training students recognize that cultural differences exist in order to make informed medical decisions. Therefore, this lecture will describe concepts related to identity, culture, diversity and inclusion, including implicit bias. In addition, it will provide preceptors with practical skills to become more culturally competent (or inclusive) in their athletic training practice. Finally it will provide preceptors with ways to facilitate race dialogue with athletic training students and student-athletes.

At the end of this session, attendees will be able to:

- Develop practical skills to become more culturally competent (or inclusive) in their athletic training practice.
- Define concepts related to identity, culture, diversity and inclusion.
- Define implicit bias and how it is related to working with student-athletes and athletic training students.

[Interactive Lecture, 1:40 p.m. – 2:35 p.m.](#)

Reduction in Musculoskeletal Injuries Through Active Gaming, Proprioceptive Devices and Balance Zones, (I), Advanced

NASA/KSC's Balance Zones for Occupational Injury Reduction and Employee Physical and Mental Health & Wellness Neuromuscular Learning and Cognitive Response, Proprioceptive Training and Body Systems Review

Mary Kirkland, MS, LAT, ATC, KSC Rehab Works

The Use of Exergaming to Enhance Neuroplastic Reorganization, Long-Term Retention and Transfer of Skills and Exercise Compliance

Keith Naugle, PhD, ATC, NSCA-CPT, University of Florida

Athletic trainers, regardless of employment setting, employ a diverse range of methods to achieve injury prevention and treatments for patients. This session will introduce a NASA and Occupational Safety and Health Administration Voluntary Protection Program best practice for reduction of workplace injuries and enhancement of employee health and wellness. Attendees will learn how to establish “balance zones” within the occupational and industrial settings, increase employee engagement in taking ownership of their health and reduce occupational injuries. Evidence of the diverse applications of active gaming will be provided to demonstrate enhanced neuroplastic reorganization, long-term retention and transfer of motor skills and exercise compliance.

At the end of this session, attendees will be able to:

- Incorporate balance zones to reduce slips, trips and falls in the workplace
- Incorporate active gaming as a mode of exercise to improve motor patterns and control and reduce musculoskeletal injuries
- Utilize a systems approach and organizational partnerships in addressing the health and wellness of an employee in the occupational setting

Learning Labs, 1:40 p.m. – 3:40 p.m.

What if a Hamstring Strain Is Not a Hamstring Strain?, (IV), Essential

Kyle North, LAT, ATC, University of Idaho

Hamstring strains (HS) treated with novel treatment techniques have shown significant improvements in pain and dysfunction following one treatment. Considering the tissue healing model, anecdotal evidence suggests that grade I strains lack significant tissue damage. Rather, the body overreacts when abnormal stimuli is applied, which is the source of pain and dysfunction. By simply resetting the system using treatment paradigms, such as primal reflex release technique and total motion release, clinicians can immediately reduce pain, dysfunction and loss of playing time. The purpose of this session is to demonstrate the efficacy of a novel approach to treating HS.

At the end of this session, attendees will be able to:

- Determine whether there is true tissue damage to the hamstring muscles
- Demonstrate the ability to apply the basic concepts of total motion release and primal reflex release technique
- Educate stakeholders with the severity of soft tissue injuries
- Allow athletic patients to return to activity sooner following a perceived HS

Manual Therapy of the Thoracic Spine & Ribs, (IV), Advanced

James Scifers, DScPT, LAT, ATC, Moravian College

Spine pain is a significant occupational and athletic health issue. While the majority of attention is focused on assessment and treatment of the cervical and lumbar spine, thoracic spine and rib pain (TSP) is a common complaint in primary care and athletic practice settings. Median prevalence rates of TSP are 30% in laborers, with higher incidence in young patients and women. TSP is also commonly associated with cervical spine and shoulder pathology. Common causes of TSP include high workload and intensity; faulty posture and ergonomics; and repetitive rotational stress. Evidence-based interventions for TSP include manual therapy for the thoracic spine and ribs. Research also supports the use of thoracic spine mobilization techniques in the treatment of cervical spine and shoulder pain.

At the end of this session, attendees will be able to:

- Determine appropriate, evidence-based treatment programs, including manual therapy techniques, based on classification systems following mechanical assessment of the thoracic spine and ribs
- Select and apply appropriate manual therapy techniques for the thoracic spine and ribs based on the available evidence
- Apply clinical prediction rules for manual therapy intervention of the thoracic spine and ribs

Forum, 3:05 p.m. – 4 p.m.

Legal Concerns Associated With Wearable Devices in Sport, (V), Advanced

Joe Myers, PhD, ATC, Tampa Bay Rays

Barbara Osborne, JD, University of North Carolina at Chapel Hill

Sports teams are financially and emotionally motivated to excel and, therefore, aim to gather as much data about their players as possible. While the advent of wearable devices to easily gather biometric data in an effort to optimize player performance and avoid injury has facilitated this process, it has also introduced a number of legal ramifications. This session will discuss the legal concerns (e.g., protected health information, Family Educational Rights and Privacy Act, Fair Credit Reporting Act).

At the end of this session, attendees will be able to:

- Define legal terminology
- Identify legal concerns associated with the biometric data collected by wearable devices
- Educate stakeholders in the legal concerns associated with the use of biometric data collected from wearable devices

Lectures, 3:05 p.m. – 4 p.m.

Utilizing Vestibular and Oculomotor Rehabilitation and Clinical Profiles To Prevent Concussion Reinjury, (IV), Essential

Ryan Moran, PhD, ATC, University of Alabama

Recent evidence has begun to support early physical activity and vestibular/ocular rehabilitation to aid in symptom resolution and recovery from sport-related concussion (SRC). Matching targeted and active treatments to clinical profiles of concussion may also aid in improving recovery and decreasing risk of subsequent SRC. Additionally, the rate of lower extremity musculoskeletal injuries to the ankle and knee increases following return to play from SRC. Therefore, it's essential that athletic trainers understand how to recognize clinical profiles and dysfunction and be able to utilize vestibular, ocular and neurological rehabilitation techniques to prevent reinjury in the human body.

At the end of this session, attendees will be able to:

- Discuss the role of active recovery for SRC
- Explain the implementation of active vestibular and ocular motor baseline assessment and post-concussion rehabilitation
- Implement clinical profiles into rehabilitation to prevent reinjury and ensuring proper return to play
- Describe, develop and incorporate neurological exercises into active rehabilitation.

Strategies for Developing and Measuring Outcomes of Education Advancement Grants, (V), Advanced (Non-CEU Session)

Presented by the NATA Education Advancement Committee

Developing and Conducting Longitudinal Data Collection in Educational Research
Julie Cavallario, PhD, ATC, Old Dominion University

Education Research: Shaping Your Scholarship To Improve Your Practice
Sara Nottingham, EdD, LAT, ATC, University of New Mexico

There is a need for quality research to objectively evaluate the merit, validity and utility of theories and processes in education and professional development of athletic trainers. In 2015, the NATA Research & Education Foundation launched a request for proposals for Educational Advancement Grants aimed to enhance educational research. Since that time, the NATA Foundation has funded seven grants worth \$127,010. The purpose of this session is to present an example of a funded educational research grant and discuss strategies for developing education research studies with a focus on outcomes and application to practice.

At the end of this session, attendees will be able to:

- Describe research that advances education in athletic training
- Apply grant application guidelines and implementation processes to educational research grants
- Discuss strategies for developing educational advancement grants
- Develop outcomes of educational research studies

Practical Infection Control Considerations for the Secondary School Athletic Trainer, (I, V), Essential

Presented by the Board of Certification

Thomas Woods, MEd, MS, ATC, Spring Independent School District

Kirsten Hochbert, PhD, Clorox

OD*

Identifying and minimizing potential sources of infection is a difficult, but important, task in the secondary school setting. Athletic trainers face a variety of challenges in their quest to protect athletes from illness. Utilizing the BOC Facilities Principles Manual and the BOC Guiding Principles for AT Policy and Procedure Development Manual, this session will address several areas for consideration when implementing a comprehensive infection control program.

At the end of this session, attendees will be able to:

- Identify regulatory entities and resources that address infection control in the provision of athletic health care services
- Describe how various infection control products work to kill pathogenic organisms
- Assess their athletic training facilities for potential sources of disease transmission, along with other programmatic sanitation and hygiene issues
- Develop policies and implement procedures to mitigate the spread of infectious diseases throughout their athletics program
- Develop, implement and document an ongoing in-service and educational program for the mitigation of infectious diseases

Transgender Athletes, Athletic Trainers and the Law, (I, V), Advanced

Presented by the NATA Government Affairs Committee

Sam Johnson, ATC, Oregon State University

Rebecca Lopez, PhD, LAT, ATC, University of South Florida

OD*

Multiple states have enacted restrictions on participation in sports by transgender athletes, and over half states have bills restricting participation. As health care professionals, athletic trainers are duty-bound to provide the best care to all patients and thus must consider their role in providing care to transgender patients. To do this, athletic trainers must understand the health disparities experienced by transgender individuals, the common features of transgender athlete laws, how these laws intersect with state practice acts and professional standards of practice and the possible benefits and drawbacks of state athletic training organizations advocating for or opposing these bills.

At the end of this session, attendees will be able to:

- Recognize the common elements of transgender athlete laws
- Interrelate transgender athlete laws and athletic training practice acts, regulations and other professional standards (e.g., NATA Code of Ethics, BOC Standards of Practice)
- Explain the potential impact of state athletic training organizations including transgender athlete laws in their legislative advocacy goals

- Describe the potential impact of transgender athlete laws on patients

Hispanic/Latinx Patient, Health Care Provider and Health Care System Barriers to Appropriate Care, (V), Advanced

Addressing Acculturation and Language Barriers in our Athletic Training Practice

Nancy Uriegas, MS, SCAT, ATC, University of South Carolina

Toni Torres-McGehee, PhD, SCAT, ATC, University of South Carolina

OD*

Racial and ethnic health disparities are recognized as significant issue for minoritized groups. While efforts have been made, Hispanics/Latinx face a variety of financial and nonfinancial barriers to obtaining appropriate and timely healthcare. Degree of acculturation, language barriers, discrimination, poverty, and immigration status may directly affect access to healthcare. We must identify barriers faced by healthcare providers and healthcare systems in treating Hispanic/Latinx patients, including cultural competence, culturally appropriate patient education materials, affordability, and cultural orientation. It is critical to identify the barriers that have impaired clinician's ability to deliver appropriate health care to Hispanic/Latinx patients.

At the end of this session, attendees will be able to:

- Identify financial and nonfinancial barriers to health care faced by Hispanic/Latinx groups.
- Distinguish the barriers clinicians may face that impair health care delivery to Hispanic/Latinx groups.
- Improve their health care practices and patient education for minoritized groups.

Unusual Injuries in the Pediatric Athlete, (I, II, III, V), Essential

Presented by the Pediatric Research in Sports Medicine Society

Kenneth Rogers, PhD, ATC, Nemours Children's Health

Pediatric and adolescent athletes undergo significant musculoskeletal maturation during these short years of their lifespan. When seeing an athlete for "growing pains", one must be cognizant of the unique anatomic changes that can occur from the internal and external stresses from being active. Athletes at this age may also have congenital and/or genetic predisposition to anatomic variations that need to be properly diagnosed and managed for optimal function into adulthood. Epidemiology, etiology, medical imaging and physical examination information to be presented to enhance the participant's management of pediatric athlete.

At the end of this session, attendees will be able to:

- Recognize the etiology of specific pediatric injury that can occur from acute, sub-acute and overuse mechanism of injury.
- Utilize critical thinking skills once they return to their organization when they are examining a pediatric patient and utilize appropriate clinical tools.
- Utilize the information to understand the occurrence of low frequency diagnoses that occur in this population that if not managed appropriately can have life altering consequences.

Interactive Lectures, 4:30 p.m. – 5:25 p.m.

Using Virtual Reality to Assist in Objective Return-to-Play Decisions in Concussion Management, (I, II), Advanced

Rebecca Bliss, DPT, DHSc, University of Missouri

OD*

Emerging evidence in objective measures in concussion management includes the use of virtual reality to measure eye tracking and performance. Objective visual tracking performed via virtual reality can measure attention, target selection, sustained engagement and spatial-temporal working memory as well as predict of required actions of the visual system. This session will introduce the use of technology, including virtual reality systems, to objectively measure common visual and vestibular dysfunction in post-concussion athletes. Active learning methodologies will be utilized to engage the audience and offer live demonstrations for optimal learning and engagement.

At the end of this session, attendees will be able to:

- Describe common oculomotor and vestibular deficits seen following concussion injury that put athletes at risk for protracted recovery
- Differentiate between utilization of clinical measures versus technology assisted assessment measures for return-to-play decisions
- Discuss barriers and facilitators to utilizing technology for assessment and intervention in post-concussive rehabilitation.

Hip and Pelvic Assessment and Corrective Exercises for Golfers, (I), Advanced

Pradeep Vanguri, PhD, ATC, Nova Southeastern University

Brady Tripp

Patrick Roosta,

Hip and pelvic mobility and stability are critical to rotary movements in golf, with injury or restriction impeding optimal function. This session will provide assessment strategies to evaluate hip and pelvis dysfunction using physical screening techniques as well as analysis of the golf swing using video to showcase body-swing deficiencies. The presenters will demonstrate these assessments on multiple attendees and facilitate small group collaboration among participants to further identify deficiencies. Additionally, the presenters will synthesize evaluation results from participants and provide corrective exercises to practice in pairs or small groups.

At the end of this session, attendees will be able to:

- Identify hip and pelvic mobility and stability issues among golfers
- Recognize body-swing connections to hip and pelvic mobility and stability issues
- Apply knowledge gained through their assessments and design hip and pelvis corrective exercise progressions

Lectures, 4:30 p.m. – 5:25 p.m.

Staying Courtside and Out of Court: What Athletic Trainers Need to Know About the Legal Process, (V), Advanced

David Cohen, ATC, Esq., Major League Business, LLC

Tamara Gaw, MS, ATC, Esq., Advantage Rule, LLC

OD*

Law may not be the first thing an athletic trainer considers, but the changing landscape of the law and society is having a major impact on the profession. Recent lawsuits involving the standard of care have put athletic trainers in the legal crossfire. This session will provide an overview of legal principles that affect the athletic training practice, including HIPAA, state privacy laws and laws regarding carrying/dispensing medications. It will also provide an overview of professional liability issues and a discussion on recent legal issues and trends that affect the practice.

At the end of this session, attendees will be able to:

- Explain the basis of a malpractice lawsuit
- Understand strategies to avoid malpractice litigation
- Explain the basis of the U.S. legal system

Skeletal Muscle Adaptations Following ACL Rupture and Surgical Reconstruction: Potential Targets for Therapeutic Intervention, (II), Advanced

Timothy Tourville, PhD, ATC, CSCS, University of Vermont

Adam Lepley, PhD, ATC, University of Michigan

The pathophysiological factors contributing to post-traumatic osteoarthritis (PTOA) following anterior cruciate ligament (ACL) rupture are poorly understood. One factor shown to contribute to knee PTOA is quadriceps muscle dysfunction, which may not be remediated during rehabilitation. As clinicians, our goal is to address these neuromuscular maladaptations in their infancy through targeting their root causes with therapeutic interventions; however, we must first characterize specific cellular- and tissue-level adaptations that promote strength loss. This session will provide novel information that impacts clinical care by informing the development of new interventions to target adaptations that contribute to the pathoetiology of knee PTOA.

At the end of this session, attendees will be able to:

- Summarize how intrinsic alterations in skeletal muscle function at the cellular level scale to whole muscle strength, and are correlated with patient-oriented outcomes, such as pain and quality of life following ACL reconstruction
- Explain how sustained deficits in quadriceps strength may alter gait biomechanics and can be a risk factor for PTOA

- Describe state-of-the-art evaluation techniques for examining changes in quadriceps strength, function and quality through cellular-level evaluation and advanced quantitative imaging modalities, and how they are being utilized to quantify maladaptations

FRIDAY, JULY 1

Lectures, 7:30 a.m. – 8:25a.m.

Respiratory Considerations of COVID-19 Infection in Athletes, (II), Advanced

Katie Walsh Flanagan, EdD, LAT, ATC, East Carolina University

Since winter 2020, the COVID-19 pandemic has had a profound impact on not only the world, but with athletic participation. Data from the summer of 2020 have indicated some athletes have cardio-respiratory challenges returning to full participation following COVID-19 illness. This session provides a brief overview of pulmonary physiology and respiratory responses to COVID-19. It will also review various published papers from the past 14 months regarding return-to-play protocols. Participants of this session will be advised of up-to-date data involving respiratory responses to COVID-19 as well as best practices for return to sport.

At the end of this session, attendees will be able to:

- Understand pulmonary anatomy, function and physiology
- Analyze respiratory response to COVID-19
- Contrast typical versus atypical respiratory recovery post COVID-19 infection
- Compare various published return-to-sport protocols following COVID-19 infection
- Determine best practices with current data regarding athlete to return to activity after COVID-19 recovery

Cultural Practices and the Impact of Vitamin D on Health and Performance in the Secondary School Setting, (I), Essential

Presented by the NATA Secondary School Athletic Trainers' Committee

The Intersection of Cultural Practices and Athletic Training in the Secondary School Setting
Florence Wasko, MS, ATC, Oceania University of Medicine

The Impact of Vitamin D on Health and Performance
Ernest Eugene, EdD, LAT, ATC, Orlando Magic

OD*

Cultural competence is essential for providing patient centered care. Cultural practices, traditions and religion can intersect with athletic training. Athletic trainers can navigate medical considerations with traditional and Western worlds. To provide appropriate medical care for secondary school athletes, athletic trainers should educate athletes on nutrition, hydration and dietary supplementation. Vitamin D is an important factor in the overall health of athletes. Vitamin D deficiency is common, especially among ethnically diverse athletes. Increasing knowledge on vitamin D deficiency and sufficiency can help athletic trainers educate athletes on the significance of vitamin D with injury prevention and athletic performance.

At the end of this session, attendees will be able to:

- Discuss culture, tradition and religion and their impact on athletic training practices
- Identify appropriate behavior and expectations when working with student athletes and coaches who identify as “fa’afafine”
- Discuss vitamin D and the impact of deficiency within ethnically diverse patients
- Review the sources and benefits of vitamin D
- Identify the latest research and ways to integrate vitamin D in the secondary school setting

Functional Medicine for the Athlete and Athletic Trainer, (I, II, IV), Advanced

Adam Cady, ATC, CSCS, PA-C, Cedars-Sinai Kerlan-Jobe Institute

OD*

Functional medicine (FM) is a specialty that determines why illness occurs and restores health by addressing the root cause of disease, rather than treating symptoms. The FM framework facilitates an individualized, patient-centered and evidence-based approach. FM framework seeks to improve health by modification of the following personal lifestyle factors: sleep, exercise/movement, nutrition, stress and relationships. This session will provide a current evidence-based review of FM literature. The primary goal is to provide athletic trainers with tools to implement aspects of FM into their current practice, thereby improving athlete health as well as personal health.

At the end of this session, attendees will be able to:

- Utilize current FM evidence to inform practice and improve athlete health
- Utilize current FM evidence to improve personal health and well-being
- Describe to peers and patients the importance addressing root causes of illness rather than treating symptoms

Efficacy of Neurodynamic Mobilization on Range of Motion and Performance, (I, II, IV), Advanced

Vincent Dicrisio, PhD, ATC, CSCS, Notre Dame of Maryland University

OD*

Hamstring strain injuries remain a common occurrence in sport and a challenging issue for the health care clinician to adequately manage while minimizing the risk of reinjury and time to return to play. Adverse neurodynamics is a dysfunction within the nervous system and may play a significant role in the recovery of hamstring strain injuries. Based on current evidence neurodynamic techniques are effective interventions in improving hamstring flexibility while not diminishing performance measures as compared to traditional stretching methods.

At the end of this session, attendees will be able to:

- Compare the efficacy of neurodynamic mobilization to traditional stretching methods for improving range of motion
- Compare the efficacy of neurodynamic mobilization to traditional stretching methods for performance measures
- Discuss the use of neurodynamic mobilization as a reinjury prevention method for hamstring strain injuries

Learning Labs, 7:30a.m. – 9:30a.m.

ACL RTP Testing and Programing, (IV), Advanced

Joseph Hart, PhD, ATC, University of Virginia

Anterior cruciate ligament (ACL) return-to-sport (RTS) test batteries are popular and are employed to test athletes' sport performance and help ensure a safe return to sport. Despite all of our testing, we continue to show poor outcomes even 12+ months after reconstruction. To simply say it comes down to strength is not enough. Quadriceps strength are highly important, but we must not forget about hamstring: quadriceps ratios, gluteus strength, force attenuation, and fatigue-state rehab and mental readiness of the athlete. To help address these problem researchers should aim to rigorously evaluate: (1) which tests can help clinicians help athletes return to play successfully, (2) the optimal values for cut-off scores and (3) alternatives to limb symmetry indexes.

At the end of this session, attendees will be able to:

- Explain the current concepts of strengthening the quadriceps after ACL surgery.
- Describe the current concepts of ACL RTP testing and programming.
- Explain the variables that comprise ACL RTP decisions.
- Summarize the risk of re-injury upon RTP.

'Tilt-A-Hip': Mulligan Concept, a Novel Approach to the Assessment and Treatment of Non-Specific Low Back Pain, (II), Advanced

Shayane Santiago, MS, ATC, University of Idaho

Treatment of non-specific low back (LB) pain is often elusive due to the complexity of the hip and pelvic joint. Misdiagnosis may facilitate the selection of ineffective treatment delaying recovery. Along with pain, patients also may present conditions associated with muscle imbalance, neural involvement and positional fault. The Mulligan Concept (MC) technique can be one of the treatments for non-specific LB pain. Implementation of the MC technique can improve treatment outcomes instantaneously and effectively. The purpose of this session is to show how clinicians can utilize the MC techniques to quickly and successfully address non-specific LB pain.

At the end of this session, attendees will be able to:

- Recognize foundational knowledge of theories and principles of the assessment and treatment of non-specific LB pain
- Explain how to perform MC techniques used to treat non-specific LB pain
- Identify when to utilize MC within their clinical practice in combination with traditional treatment paradigms
- Select optimal outcome measures to assess the efficacy of the MC techniques in patient care

Lectures, 8:55 a.m. – 9:50a.m.

Current Understanding of the Relationship Between Cumulative Workload and Injury in Youth Team Sport, (I), Essential

Katie Sniffen, MS, ATC, West Virginia University

OD*

Internal and external workload exceeding player tolerance or capacity is significantly associated with increased injury risk across a variety of sports, competition levels and age groups. There is a lack of consensus about the threshold of workload capacity and onset of injury in youth team sport. This session will present the current literature on the association between cumulative workload and risk of injury in youth team sports as identified via a systematic review by the authors. Evidence will be discussed in terms of appropriate measures and definitions, current knowledge and future research.

At the end of this session, attendees will be able to:

- Define internal and external workload measures
- Describe the relationship between workload measures and injury risk in youth team sports
- Discuss the limitations of current literature related to the relationship between workload and injury risk in youth team sport
- Discuss the opportunities for future research in improving understanding of the relationship between workload and injury risk in youth team sport

SIDELINED: Helping Athletes Adapt and Thrive After Medically Forced Exit From Sport, (I, II, III, IV, V), Essential

Jordan Anderson, MS, ATC, North Shore University Health System

Christine Pinalto, Sidelined USA

OD*

The transition following unanticipated and involuntary exit from sport is described as disruptive and traumatic. Understanding the patterns of psychological response for athletes no longer able to compete due to career-ending injury, health condition or concussion is essential to patient care. Medically disqualified athletes experience a range of emotional responses such as grief, identity loss, depression, anxiety and suicidal ideation. This session will address the psychological and social domains for athletes experiencing medical disqualifications, implications for loss of athletic identity and risk of related mental health concerns. Emphasis on research and practical methodology to support these athletes in their transition.

At the end of this session, attendees will be able to:

- Identify the three domains of experience that characterize the injured athlete's journey
- Examine most recent data reflecting trends in psychological response and the mental health concerns following medically forced exit from sport as identified in Sidelined USA's 2020 original IRB approved research study
- Explain components of a healthy psychological adjustment following medical disqualification as referenced in Brown & Hogg's Model of Healthy Transition Following Career-Ending Injury
- Discuss ways athletic trainers can support the medically disqualified athlete in six key areas: grief and identity loss, social support, coping strategies, affiliation/competence, rebuilding motivation and mental health concerns
- Identify free support resources available through NATA-sponsored nonprofit Sidelined USA.

Examining the Intersection of Sex and Gender on Sport-Related Concussion: Considerations for Individualized SRC Management, (I), Essential

Abigail Bretzin, PhD, ATC, University of Pennsylvania

Carrie Esopenko, PhD, Rutgers University

A number of consensus groups strongly recommend clinicians use individualized approaches to concussion management and treatment. However, large, collaborative, research studies demonstrate that specific biological and social factors, including sex and gender, may increase the risk of sports-related concussion (SRC), and result in worse outcomes and protracted recovery timelines post-injury. This session will discuss the epidemiology of SRC risk and outcomes in male and female high school and collegiate athletes, while also operationalizing how sex and/or gender may impact SRC risk and recovery. Understanding the influence of sex and/or gender will promote safer sport participation and proper management of SRC.

At the end of this session, attendees will be able to:

- Describe the epidemiology of SRC in high school and collegiate settings
- Compare differences in concussion incidence between male and female athletes
- Examine differences in concussion outcomes and recovery between male and female athletes
- Differentiate between sex and gender related effects in concussion incidence, outcomes and recovery

How Important is Core Stability for Lower Extremity Function?(I, II, IV), Essential

Presented by the American Academy of Podiatric Sports Medicine

Alicia Canzanese, DMD, FASD, Abington Jefferson Health

Core Stability plays an important role in the coordinated movement and function of the lower extremities. Core Stability includes the entire Abdominal-lumbo-pelvic-hip complex. When evaluating the lower extremity, we must consider the entire kinetic chain. Proximal instability/weakness/poor neuromuscular control is an important factor in the prevention, treatment, and rehabilitation of lower extremity injuries however more research is needed in terms of cause and effect. There is a growing body of evidence in the sports medicine literature to support the importance of core stability in lower extremity function and really all gross motor activity.

At the end of this session, attendees will be able to:

- Recognize which muscle groups make up the “core” and their importance in lower extremity function.
- Identify the role core instability can play in the development of lower extremity injuries.
- Apply simple special tests that can be performed in the office to evaluate for core instability.

Role of Sports Specialization on Overtraining, Burnout and Mental Health Considerations, (I, V), Advanced

Tamara Valovich McLeod, PhD, ATC, FNATA, A.T. Still University

OD*

Early sports specialization has been associated with an increased risk of overuse injury, however, less is known regarding the psychosocial and mental health considerations of sports specialization. This session will review the benefits of sports participation on psychological health, the impact of early sports specialization on overtraining, burnout and mental health and recommendations to reduce the risk of these outcomes. Strategies to screen for overtraining and burnout will be discussed with case examples to illustrate practical considerations.

At the end of this session, attendees will be able to:

- Summarize the benefits of sports on psychological health
- Explain the impact of early sports specialization on mental health conditions and burnout
- Employ strategies to screen for overtraining and burnout
- Develop sports participation pathways to mitigate overtraining and burnout
- Defend existing athlete development models that aim to mitigate overtraining risk

[Interactive Lecture, 8:55 a.m. – 9:50a.m.](#)

Applying Psychological First Aid to a Simulated Patient, (I), Advanced

Jennifer Ostrowski, PhD, LAT, ATC, Moravian College

Suicidal ideation is thinking about, considering or planning suicide. Suicide is the second-leading cause of death in individuals age 10 to 34. Non-suicidal self-injury (NSSI) is the deliberate, self-inflicted destruction of body tissue resulting in immediate damage, without suicidal intent. The lifetime prevalence of NSSI in adolescents and young adults is 15 to 20% and in adults is 6%. There are many myths surrounding suicide and NSSI, and most individuals aren't comfortable approaching someone with their concerns. This session will provide communication strategies and simulated practice approaching an individual experiencing a suspected suicide or NSSI crisis via video simulated patient clips and small group discussion.

At the end of this session, attendees will be able to:

- Summarize prevalence and incidence statistics related to suicide and NSSI
- Recognize myths and facts, risk factors and warning signs related to suicide and NSSI
- Choose communication strategies specific to approaching an individual with mental health concerns
- Apply communication strategies following video simulation of a patient experiencing a mental health crisis

Lectures, 10:20 a.m. – 11:15a.m.

Evidence-Based Management of Multi-Ligament Knee Injuries and Knee Dislocations From the Sideline to the Operating Room, (II), Mastery

Anatomy and On-Field Recognition

Patrick Buckley, MD, Moore Center for Rehabilitation

Treatment Options and Surgical Management

Kenneth Swan, MD, University Orthopedic Associates

Multi-ligament knee injuries (MLKI) are complex injuries with an array of factors that can impede return to play and cause short- and long-term morbidity to the athlete. They're injuries involving more than one ligament in the knee, often with associated meniscus, chondral or neurovascular pathology that must be recognized and addressed. Outcomes following MLKI are influenced by prompt on-field recognition, proper initial care and appropriate surgical treatment followed by a rigorous rehabilitation program. The athlete with a MLKI from a knee dislocation is an event that is often thought about but rarely encountered. This session will review the on-field diagnosis of a knee dislocation as well as the initial treatment including joint reduction and a thorough neurovascular evaluation. Presenters will detail their experience with treating patients with MLKI and highlight cases with X-rays, imaging, intraoperative videos and post-operative follow-up.

At the end of this session, attendees will be able to:

- Explain anatomical concerns with MLKI

- Recognize signs and symptoms of MLKI
- Determine the appropriate management of MLKI
- Consider the potential impact of complicating factors associated with MLKI

Working With Transgender Student Athletes in Women's Collegiate Athletics: A Clinician's Perspective, (I, II), Essential

Devon Serrano, DAT, ATC, NREMT, Sweet Briar College

As more transgender student athletes prepare to enter collegiate athletics, it's vital that athletic trainers understand the necessary steps they must take as the student athletes' health care provider. This session will focus on the stories of two transgender student athletes at a women's college: a pre-op transman and a pre/post-op transwoman. The purpose of this session is to give athletic trainers an outline of possible steps needed to help transgender student athletes safely participate in athletics, and advocate within the athletic department on their behalf. Both student athletes were consulted throughout the session's development and consented to their stories being shared for educational purposes.

At the end of this session, attendees will be able to:

- Create an environment of inclusivity and respect in their athletic training facility for transgender student athletes
- Understand the role of the athletic trainer as an advocate for transgender student athletes
- Better understand the steps to take to help those athletes safely participate in sport
- Better understand the possible campus resources for student athletes to utilize
- Integrate best practices in providing equitable health care to transgender patients

Is Your Student Athlete Hungry? Food Insecurity and How the Athletic Trainer Can Help, (I, II), Advanced

Presented by Sports and Human Performance Nutrition Dietetic Practice Group

Kathleen Searles, MS, RD, CSSD, Food Nutrition Specialist

Recent studies have identified food insecurity (FI) among student athletes, increasing the risk of performance deficit, impaired injury recovery, poor academic performance, and mental health challenges. As a trusted professional the AT can help screen for FI, make referrals, and help student athletes identify resources. This presentation will review recent research on food insecurity in high school and college athletes, will introduce an evidence-based screening tool, the Hunger Vital Sign™, for identifying FI, and suggest resources for student athletes experiencing FI. The ongoing impact of the COVID 19 pandemic will be also addressed.

At the end of this session, attendees will be able to:

- Define food insecurity and state its impact on student athletes.
- Utilize the Hunger Vital Sign™ validated screening tool to identify food insecurity.
- Identify resources available to help athletes experiencing food insecurity in student athletes.

Vision and Sport: Maximizing Visual Function From PPE to Training, (I, II, IV), Advanced

Presented by the American Optometric Association Sports Vision Section

Fraser Horn, OD, FAAO, Pacific University

Amanda Nanasy, OD, RightEye

Vision is the dominant sense when it comes to movement and mobility and yet it vision has not received much attention until recently. Vision can be assessed, trained, and maximized to help with performance and potentially reduce injury risk. We will discuss various ways to incorporate vision assessment in your Pre-Participation Exam, evidence as to why vision is important, ways to work with eye care providers, and how to incorporate training into what you already do. You will walk away with a new focus on vision and performance.

At the end of this session, attendees will be able to:

- Summarize the role of vision with performance.
- Develop an evidence-based screening protocol assessing vision for PPEs.
- Identify areas where vision assessment and/or training may play a role in AT clinical practice.

Forum, 10:20 a.m. – 11:15 a.m.

Facts vs. Fiction: What Every Athletic Trainer Needs To Know About Cannabis, (II), Essential

Tiffany Morton, MS, LAT, ATC, Kansas City Chiefs

Kevin Morley, DAT, LAT, ATC, Nashville Predators

Jeff Konin, PhD, PT, ATC, Florida International University

There is emerging data advocating for the use of cannabis. Does this treatment option fit into the plan of care provided by athletic trainers? A significant amount of misinformation and myths regarding the use of cannabidiol (CBD) and tetrahydrocannabinol (THC) among other cannabinoids is abundant. Is there evidence that cannabinoids are performance enhancers? Patients aren't waiting for evidential studies to affirm safe, effective or even evidence-based results when using different variations of the cannabis plant to improve performance or reduce symptoms. This session will discuss the scientific evidence and clinical applications for the use of cannabis.

At the end of this session, attendees will be able to:

- Summarize the evidence regarding cannabis use
- Explain the risks and benefits of CBD, THC and other cannabinoid interventions

- Develop a process for maintaining currency of cannabis laws, clinical evidence and the role of the athletic trainer with patient education

Interactive Lecture, 10:20 a.m. – 11:15 a.m.

Relevance of Functional Connectivity Among Brain Networks to Level of Sport-Related Injury Risk, (I, II, IV), Advanced

Gary Wilkerson, EdD, ATC, FNATA, University of Tennessee at Chattanooga

Recent advances in neuroimaging and neurophysiological testing have dramatically increased understanding of brain function. Injury susceptibility in a rapidly changing sport environment clearly relates to neural processing efficiency, which requires integration of perceptual inputs, cognitive decision-making and muscle activations. Reaction time is a widely used index of neural processing speed, which quantifies the time that elapses from visual stimulus appearance to completion of a specified response. The session will provide a synopsis of research evidence pertaining to the neurological basis for rapid and accurate reactive responses, mechanisms responsible for impaired neural processing and intervention strategies to promote favorable neuroplastic adaptations.

At the end of this session, attendees will be able to:

- Explain the relevance of specific brain processes to an athlete's ability to rapidly and accurately respond to environmental threats
- Describe the functions of key brain networks that must be activated and coordinated to generate rapid and effective responses to potentially injurious scenarios
- Describe the limitations and relative advantages of various approaches to assessment of perceptual-motor efficiency
- Develop an individualized approach to reduction of sport-injury risk that addresses evidence of suboptimal perceptual-motor efficiency

Learning Lab, 10:20 a.m. – 12:20 p.m.

Preventing Injury by Addressing Neurological Compensation Pattern and Creating Neurological Core Stability, (IV), Advanced

Angela McRobbie, DPT, Dynamic Sports Massage Recovery

When addressing soft tissue injuries to the nervous system and the body stays more in a heightened state of sympathetic we have a greater chance of soft tissue injuries. As practitioners, we want to help calm the system before activity. The fight/flight stage is considered a survival stage, when our brain is in that heightened state it will make survival mode decisions to protect us from whatever situation we are in. It is not the best decision but in that moment it is the best decision to get us out of the situation. The brain and body cannot be disconnected, when our brain is in the fight/flight/survival mode our bodies

make survival mode movement decisions and those are movements that create compensation. We cannot talk ourselves out of sympathetic or fight or flight, but we can breathe ourselves out of that state. If we can't breathe properly then we cannot move to our best potential. As practitioners we all know core stability is important, as we speak about core and addressing it, the core is the diaphragm, psoas, and glutes. The connection between the diaphragm and psoas has a profound influence on how well our bodies function. When patients are not utilizing their diaphragm to their potential and breathing from the chest the psoas stays in a contracted state. With our psoas being our flexor and being contracted, the glutes then cannot neurologically perform to their best potential which creates an unstable core. When the core becomes unstable and all flexion and extension movement comes from the core the body needs to create stability so in turn it creates compensation from the lower body limbs or from upper body limbs. When that compensation starts, muscles in the distal portion of the body compensate to create stability in the core and patients can have limited flexibility and mobility. As practitioners we can mechanically make changes to the muscle but if we aren't addressing the nervous system prior to doing that we aren't changing the neurological compensation pattern. Over short periods of time it will resort back to the core becoming unstable, which can create poor movement patterns and then have an increase in injuries.

At the end of this session, attendees will be able to:

- Understanding the nervous system compensation patterns.
- Discuss fight versus flight and the survival stage.
- Recognize the connection between the diaphragm and the psoas.

Evidence-Based Principles for Improving Lumbo-Pelvic-Hip Muscle Function in Overhead Athletes, (IV), Advanced

Sakiko Oyama, PhD, ATC, University of Texas at San Antonio

The speakers will discuss the current evidence on the benefits of improving lumbo-pelvic-hip function on injury prevention, modification of pitching biomechanics and performance (i.e., throwing velocity) in overhead athletes. The speakers will also introduce participants to the principles behind the exercises used to address lumbo-pelvic-hip function and discuss how to structure the training program based on the current evidence. In the lab portion of the session, the speakers will take the participants through the progression of exercises used to train the lumbo-pelvic-hip function as they play the role of clinician and the patient.

At the end of this session, attendees will be able to:

- Discuss the potential benefits of improving lumbo-pelvic-hip function on pitching biomechanics and injury prevention
- Discuss the potential benefits of improving lumbo-pelvic-hip function on throwing velocity
- Summarize the principle behind the selection and progression of exercises used to train lumbo-pelvic-hip muscles in overhead throwing athletes

Lectures, 11:45 a.m. – 12:40 p.m.

Health Disparities and Athlete Health Outcomes, (I), Essential

Presented by the NATA Professional Development Committee

Kemba Noel-London, PhD, ATC, CES, Saint Louis University

Health disparities disproportionately impact minority population health outcomes. ATs are key health care providers who can assist in the wider reduction of the impact of health inequity on athlete health and health outcomes. In order to do so, ATs must be aware of and have an understanding of health disparities, their drivers and how they may manifest in communities being served. This will aid in developing strategies to improve AT practice rooted in the needs of the community and in mitigating their impacts. This session will provide ATs with information regarding health disparities and present strategies to appropriately address these issues.

At the end of this session, attendees will be able to:

- Define health inequities, health disparities and social determinants of health
- Identify systematic and structural drivers of health inequities, health disparities and social determinants of health
- Discuss the impact of health inequities and health disparities on athlete health care and health outcomes
- Prepare strategies to address health inequities and health disparities in the delivery of athlete health care

What It Takes To Be an AT Business Owner: Characteristics and Personalities, (V), Essential

Alisha Pennington, MS, ATC, ATvantage Athletic Training

Keri Sotak, MS, ATC, The Athletic Training Room

The pursuit of business ownership in athletic training has grown, and with it the interest of more professionals to consider it in their career path. But does everyone have what it takes to navigate entrepreneurship successfully? Especially as it pertains to the application of traditional athletic training knowledge to business practices. This session explores common characteristics and personality traits of successful business owners. This information is then applied to basic business concepts of athletic training private practice models.

At the end of this session, attendees will be able to:

- Describe the personality traits of a successful AT business owner
- Demonstrate the first steps for business formation
- Apply basic business concepts to athletic training private practice models
- Determine the personal and professional traits that create success in athletic training business operations

Considering Sex Differences to Improve Patient Care after Traumatic Knee Injury, (II, IV), Essential

Christopher Kuenze, PhD, ATC, Michigan State University
Shelby Baez, PhD, ATC, Michigan State University

OD*

Recent evidence indicates that women encounter physical, psychological, and environmental barriers that negatively and disproportionately influence their recovery following traumatic knee injury when compared to men. As a result, physically active women are more likely to experience non-contact knee injuries, are less likely to return to their preinjury level of activity after injury and are at greater risk of experiencing persistent functional limitation when compared to their male peers. This suggests a potential disconnect between the patients' goals and the approach to rehabilitation that results in suboptimal and inequitable outcomes. Further, women also have a higher prevalence of osteoarthritis, as well as demonstrating worse disease severity and disability within the first 1 to 2 decades following injury. Sex differences exist in various biomechanical, strength, structural, and biochemical outcomes following knee injury that may create sex-specific risk factors for the onset of knee osteoarthritis. Therefore, the purpose of this session will be to understand the impact of patient sex on functional limitation, quality of life, and long-term joint health after knee injury. Our session will include a combination of the best current evidence and testimonials from women with knee injury about their lived experiences during and after rehabilitation.

At the end of this session, attendees will be able to:

- Identify physical, psychological, and environmental barriers that disproportionately affect women during the rehabilitation process after knee injury using best current qualitative and quantitative evidence.
- Discuss the influence of patient sex on functional and behavioral outcomes after knee injury.
- Identify sex differences in biomechanics, strength, and osteoarthritis-related biomarkers related to the development of knee osteoarthritis following knee injury.

Cervical Spine Topics in Athletes, (II, IV), Essential

Presented by the North American Spine Society

Omar Bhatti, MD, University of Washington
Neelwant Sandhu, MD, University of Washington
Stephen Johnson, MD, MS, University of Washington

Recognition, diagnosis, management, treatment, and return to play of cervical spine injuries in athletes is one of the most important aspects of sports coverage across the spectrum of athletics. Thorough knowledge and awareness of cervical spine injuries and disorders are fundamental to all health care providers who work with athletes and requires an evidence-based understanding of the medical literature.

At the end of this session, attendees will be able to:

- Summarize differential, clinical evaluation, and work-up for athletes with common and less common cervical spine injuries.
- Analyze evidence for management options for an athlete with a cervical spine injury.
- Explain return to play for athletes with a cervical spine injury.

Interactive Lectures, 1:10 p.m. – 2:05 p.m.

General Medicine Case Review 2.0: Audience-Driven Management of the Exercise-Associated Collapsed Athlete, (II, III), Advanced

Ralph Castle, PhD, LAT, ATC, NREMT, Louisiana State University

Rebecca Hirshhorn, PhD, ATC, NRAEMT, Louisiana State University

Exertional-associated collapse (EAC) can occur due to a variety of conditions at the completion of an exertional event or exercise with similar clinical presentations. The athletic trainer must be equipped and skilled to manage the causes of EAC, including but not limited to: thermias; cardiac anomalies; acute or chronic metabolic syndromes; pharmacological; and/or cerebrovascular. This session will provide an overview of the recognition and management of EAC; audience participation in reviewing their overall preparedness to effectively manage EAC; a live simulation where the audience will drive patient care provided during the case scenario via interactive audience responses; and a post-scenario debrief to review best practices in the management of EAC. The live simulation will include several decision steps in which attendees will be provided with multiple options to select; attendee response will determine the care that will be demonstrated during each step of the simulation.

At the end of this session, attendees will be able to:

- Differentiate the pathophysiology, key assessment findings and management goals for conditions related to EAC in the acutely ill patient
- Demonstrate appropriate clinical management of EAC using evidence-based protocols through high-fidelity simulation scenarios
- Evaluate and develop evidence-based protocols for conditions that may lead to EAC

Clinical Virtual Reality To Augment Rehabilitation and Return-to-Sport Testing, (IV), Mastery

Dustin Grooms, PhD, ATC, CSCS, Ohio University

OD*

The majority of rehabilitation and return-to-play testing is completed with full focus of attention on the injured joint, exercise or movement test. However, during sport, it's rare to have such dedicated attention to maintaining neuromuscular control. Simple and cost-effective (smartphone-based) virtual reality applications can provide an adjunct to already typically prescribed therapy and return-to-sport tests to better prepare athletes for the neurocognitive complexities of sport in addition to the standard of care of ensuring adequate physical function. Specifically, virtual reality can reduce dependence on visual-cognition for sensorimotor control, engage mirror neurons and allow for enhanced mental

practice, target aspects of neural control found to be disrupted after injury but not targeted with current therapy and provide a more engaging platform to complete typical rehabilitation exercises.

At the end of this session, attendees will be able to:

- Understand the virtual reality options available to clinicians
- Evaluate the available literature supporting virtual reality in orthopedic rehabilitation
- Experience various virtual reality clinical exercises

Forum, 1:10 p.m. – 2:05 p.m.

Telemedicine for Primary and Secondary Injury Prevention, (I), Advanced

Zachary Winkelmann, PhD, SCAT, ATC, University of South Carolina

David Gallegos, MA, ATC, Cert. MDT, FYZICAL Therapy & Balance Centers

The process of prevention improves the quality of life for individuals. Prevention in athletic training can include primary activities, such as intervening before health effects occur, and secondary prevention in which screenings are implemented to identify injury or illness before the onset of signs or symptoms. Local prevention efforts are often implemented by athletic trainers, but a lack of time and available space as well as workload are barriers to implementation. Telemedicine, or the delivery of health care services from a distance using technology, can serve as an avenue to improve prevention practices to improve patient outcomes.

At the end of this session, attendees will be able to:

- Define telemedicine and describe the health delivery method for active participants
- Apply primary and tertiary prevention strategies via telehealth and telemedicine technology
- Summarize the best evidence on early screening strategies and interventions to reduce the impact of injury, illness and disease and translating it to telemedicine

Lectures, 1:10 p.m. – 2:05 p.m.

Something Else To Blame on Your Parents: Genetic Association to Concussion Recovery, (I), Mastery

Jane McDevitt, PhD, ATC, CSCS, Temple University

OD*

Variability in recovery between concussed athletes can be attributed to modifying factors both intrinsic and extrinsic. One risk factor not definitively explored is genetic variation. Genetic variations, such as variable number tandem repeats and single nucleotide polymorphisms, are normal in the population, but can lead to disparities in the amount of protein produced as well as alter function of that protein. This could be presumably disrupting neuronal recovery and increase the risk for prolonged concussion

recovery. Understanding genetic markers could help medical professionals counsel patients as well as provide a more individualized approach to the patient's concussion care.

At the end of this session, attendees will be able to:

- Summarize the basic concepts of genetics
- Define different types of genetic variations
- Identify various concussion variability risk factors
- Classify genetic and protein biomarkers
- Analyze genetic variations associated with prolonged concussion recovery

Lectures, 2:35 p.m. – 3:30 p.m.

Health Care Policy Update and Advocacy for the Health Professions, (V), Advanced

The 2020 Election and Beyond – What Does It Mean for Health Care Policy and Health Professionals?
John Colbert, JD, Association of Schools Advancing Health Professions

You Can Make a Difference! How Athletic Trainers Can Engage in Advocacy
Valerie Herzog, EdD, LAT, ATC, Weber State University

Health care policy profoundly influences patients and providers. Decisions made in Washington, D.C., and state governments are impacted by the 2020 election and the systemwide disruption caused by the COVID-19 pandemic, along with a greater focus on health equity and social justice. Athletic trainers are affected by these issues and hope to make a difference, but often don't have the policy knowledge and advocacy skills to confidently engage with legislators and other important stakeholders. This session provides attendees with knowledge of the current health care policy landscape and interprofessional strategies for athletic trainers to be change agents in their specific contexts.

At the end of this session, attendees will be able to:

- Describe federal and state health care policies that affect athletic trainers, health professionals and academic institutions
- Describe key and influential stakeholders in federal and state government with regard to health care policy
- Identify your own state and federal legislators and other influential stakeholders, how to contact them and advocate for the athletic training profession
- Describe the need for advocacy by athletic trainers and health professionals
- Implement key strategies athletic trainers and health professionals can use when engaged in advocacy

(Non-CEU Session)

Educational Pathways in Athletic Training: The Current Roadmap, (V), Essential

Presented by the NATA Post Professional Education Committee

Brady Tripp, PhD, LAT, ATC, University of Florida

Stephanie Jevas, PhD, LAT, ATC, Texas Christian University

Recent advances in post-professional education for athletic trainers begs the question, "Which way should I go?" With the recent development of specialty certification and evolution of residency and doctorate programs, navigating the roadmap of educational pathways to align with personal and professional goals becomes paramount. Prospective post-professional students should become well-informed before deciding to engage on a pathway, ensuring their pathway will get them to their intended destination. This session will detail the current roadmap of post-professional pathways for ATs and discuss related employability and return-on-investment data.

At the end of this session, attendees will be able to:

- Evaluate educational pathways within the field of athletic training for opportunities for professional growth
- Analyze the pros and cons of selecting various pathways to achieve a professional goal
- Use contemporary data to inform pathway selection decisions
- Recognize the evolving role of the athletic trainer on the health care team, including pathways that enable achievement of valued team care skills and roles that advance the field of athletic training

Want To Improve Your Documentation Patterns? An Educational EMR Can Help!, (V), Essential

Cailee Welch Bacon, PhD, ATC, A.T. Still University

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The use of health information technology, including electronic medical records (EMR), has been a core component of health care for two decades. As highlighted in the Athletic Training Research Agenda, EMRs are essential as effective EMR use can improve patient care documentation, promote data use to drive evidence-based decisions and enhance patient care quality. EMRs are important to the success of the profession. While clinicians have expressed strong interest in improving patient documentation skills, they have reported limited resources and training opportunities to do so. An educational EMR offers a flexible and effective platform by which to improve patient documentation skills.

At the end of this session, attendees will be able to:

- Discuss common challenges reported by clinicians associated with patient care documentation in athletic training (i.e., perceived lack of guidance and resources, no incentive, uncertainty, inconsistency, high patient load) and effective use of EMR during clinical practice (e.g., lack of facility resources, limited exposure and repetition to establish habitual practice patterns, unfamiliarity with health care informatics and health information technology to drive patient care).

- Discuss how the use of an educational EMR can address common challenges and offer an effective way to improve patient care documentation skills. As an active learning continuing education opportunity, the use of an educational EMR may offer an opportunity to develop habitual practice patterns that will easily translate to clinical practice.
- Examine their own patient care documentation patterns to identify opportunities where an educational EMR may improve their documentation skills and engage in the learning opportunities provided by an educational EMR (documentation audit, social determinants of health observation, billing/coding, economic estimates reporting, practice characterization) to reinforce habitual practice patterns and maximize their patient care documentation to drive evidence based decisions and enhance patient care quality.

Tailoring Clinical Walking and Running Gait-Training Interventions To Meet Lower Extremity Injury Patients' Needs, (I, II, IV), Advanced

Alexandra F. DeJong Lempke, PhD, ATC, Boston Children's Hospital
 Luke Donovan, PhD, ATC, University of North Carolina at Charlotte

Gait evaluations are often conducted for lower extremity injury patients to elucidate contributing biomechanical factors to injury. Researchers have begun to leverage clinic-friendly equipment to prescribe injury-specific gait-training, such as using a laser level to reduce ankle inversion for chronic ankle instability patients. While these advancements are promising, clinical barriers to implementation include identifying patients who are most likely to benefit, frequency of the treatment and gait-training dosage. Furthermore, with advancements in wearable technology, there is the potential to administer gait-training interventions in natural training environments. It's important to consider these factors to advance gait-training research and clinical practice.

At the end of this session, attendees will be able to:

- Incorporate key elements of gait-training prescriptions for both clinic and field-based interventions for patients with lower extremity injuries
- Apply knowledge of lower extremity injury occurrence, exacerbation and recovery to generate specific recommendations for walking and running interventions
- Critically appraise the currently available evidence for gait-training prescriptions (i.e., faded feedback prescriptions) to create effective intervention program timelines for patients

Interactive Lectures, 4 p.m. – 4:55 p.m.

Engaging in Patient-Centered Care: Tools for Communicating Across Differences?, (II, IV), Essential

Rene' Revis Shingles, PhD, AT, ATC, Central Michigan University

The 2020 CAATE Standards introduced patient-centered care as a core competency requirement for athletic training education. A component of patient-centered care involves providing appropriate communication with patients and family members. In order to engage in patient-centered care, and educate patients about their injury, illness, treatment and plan of care, athletic trainers need to be able to communicate effectively across differences (e.g., race, ethnicity, gender, gender identity, religion and

other social identities). Therefore, the purpose of this session is to discuss patient-centered care, provide examples of and practice with tools and case studies to communicate across differences.

At the end of this session, attendees will be able to:

- Discuss patient-centered care
- Explain the differences between dialogue and debate
- Utilize tools to practice communicating across differences (e.g., race, ethnicity, gender, gender identity, religion)

Sexual Harassment: Bringing Awareness to Affect Change, (I, V), Essential

Michele Monaco, DSc, ATC, Immaculata University

Jaclyn Morrissette, PhD, ATC, William Paterson University

Sexual harassment is a vital issue that affects individuals and groups in many different organizations and institutions, including in the athletic training profession. Sexual harassment can be delivered in various means causing physical, mental and emotional trauma. It has been documented in the health care community to where medical schools have integrated sexual harassment training into educational curricula. Sexual harassment isn't limited to male-female interactions and can occur between and within LGBTQIA+, cultures and hierarchical professional roles. This session will facilitate action items to develop and implement training programs to prevent sexual harassment from occurring within athletic training.

At the end of this session, attendees will be able to:

- Discover various diverse groups that are plagued with sexual harassment
- Identify strategies on how to prevent sexual harassment in the workforce
- Develop appropriate protocols on reporting sexual harassment

Lecture, 4 p.m. – 4:55 p.m.

Emerging Trends in Concussion Prevention, (IV), Essential

Erica Beidler, PhD, ATC, Duquesne University

This presentation will provide an overview of current concussion prevention strategies. Injury prevention is a multi-level process that is most effective when primary (i.e., measures to prevent the occurrence of injury; safe sport technique education and interventions), secondary (i.e., measures that reduce the impact of an injury after it occurs; policies and procedures to promote rapid concussion identification and removal from activity), and tertiary (i.e., measures aimed to lessen the lasting effects of an injury; individualized, dysfunction-specific concussion management plans) approaches are employed. The important role of athletic trainers in establishing and implementing concussion prevention measures will also be highlighted.

At the end of this session, attendees will be able to:

- Demonstrate a foundational understanding of injury prevention models.

- Recognize the important role of the athletic trainer in primary, secondary, and tertiary concussion prevention initiatives.
- Construct appropriate and site-specific concussion prevention measures based upon the current research evidence available.