APTA NC ANNUAL CONFERENCE 2020 SESSION INFORMATION

1. Diagnostic Ultrasound Imaging: Musculoskeletal Real-time Ultrasound Imaging (RUSI) & Ultrasound Screening for Medical Referral (USMR) in Physical Therapy Practice

Ten years ago, dry needling and thrust manipulation were considered techniques administered by the professional cream of the crop" and separated average clinicians from expert clinicians. Today, everybody's an "expert" as it's difficult to attract an orthopaedic and sports caseload without at least basic skills in these areas (not to mention a healthy Instagram following). So what's next? We believe Musculoskeletal Real Time Ultrasound Imaging and Medical Screening for Medical Referral (collectively known as Diagnostic Ultrasound). The "visual stethoscope" is the most sensitive and specific test in the physical therapy toolbox --- holding the promise of maximizing clinical reasoning and decision making to levels of efficiency and effectiveness never before seen in the profession

Objectives: By the end of this session attendees will be able to:

1. Articulate the superior sensitivity and specificity of diagnostic ultrasound imaging special testing (including MSK RUSI and USMR) versus clinical special tests.
2. Recognize the incompatibility of NCBPTE position statements regarding RUSI and the terms "diagnostic ultrasound" and "musculoskeletal ultrasound."
3. Identify the most common and useful static images and real-time movies (cine loops), therefore able to recognize normal from abnormal.

Andrew M. Ball, PT, DPT, PhD, OCS, CMTPT, CertMSKUS Andrew.ball@atriumhealth.org

Dr. Andrew Ball has a 20 year history spanning several areas of specialty practice from pediatrics to orthopaedics. His reputation is one of professional "firsts." Dr. Ball completed the nation's first fellowship in neurodevelopmental pediatrics, coordinated the first dry needling courses in North Carolina (graduating in the first cohort and becoming one of the state's first 12 dry needlers and ultimately becoming the state's first dry needling instructor), graduated in the inaugural class of North Carolina's first orthopaedic physical therapy residency, and was the first clinician in North Carolina to complete certification in musculoskeletal ultrasound (Cert.MSKUS). Dr. Ball has completed additional training and certification in musculoskeletal real-time diagnostic ultrasound and ultrasound screening for medical referral from the Burwin Institute, Gold Coast Ultrasound Institute, and the USC Ultrasound Institute.

Daryl Palmer, PT, OCS, COMT, CMTPT, CertDxUS
Mr. Palmer has a 20 year history of excellence in the Charlotte community. Achieving certification in the 3rd cohort of North Carolinas' dry needlers as well as holding the distinction of being the first physical therapist to complete certification in MSK RUSI assessment and ultrasound screening for medical referral (USMR) from NxtGen Institute (CertDxUS).

Michael Agnone, PT, OCS, ATC, CMTPT, CertDxUS
Mr. Agnone has a 30 year history of excellence in the Charlotte community. He has worked with a wide range of orthopaedic and sports injuries from post-surgical joint replacements, to soft tissue injuries, to weekend warriors, to professional athletes. Mr. Agnone is the second physical therapist in North Carolina to complete certification in MSK RUSI assessment and ultrasound screening for medical referral (USMR) from NxtGen Institute (CertDxUS).

2. Parkinson's Disease: Evidence for Physical Therapy Assessment and Treatment

This course will provide evidence-based evaluation and treatment strategies to address common impairments and to improve outcomes for people with Parkinson Disease.

Objectives: By the end of this session attendees will be able to:
1. Identify key examination components for this patient population
2. Recommended outcome measures to evaluate people with Parkinson Disease at various disease stages.
3. Describe evidence-based treatment techniques to address common impairments and functional limitations found in people with Parkinson Disease.

Elizabeth D. Buxton, PT, DPT Elizabeth.Buxton@unchealth.unc.edu

Dr. Buxton is a physical therapist at UNC Health Care in Chapel Hill, NC. Dr. Buxton has a strong background in working with patients and teams in the management of Idiopathic Parkinson's Disease and Atypical Parkinsonism as well as in offering continuing education courses in the region related to this topic. Dr. Buxton is a 2009 graduate of UNC Chapel Hill.

3. 10 important things you need to know about musculoskeletal rehabilitation

The program was designed to help clinicians to critically think about several aspects that may influence the rehabilitation process of patients with musculoskeletal disorders. The presenters use stories and examples to provide context to simplify complex topics to usable "Monday morning" considerations.

Objectives: By the end of this session attendees will be able to:
1. Recognize the factors that influence health related outcomes in individuals with musculoskeletal disorders
2. Understand research design nuisances that can markedly influence outcomes
3. Synthesize the evidence on a number of areas of healthcare that are commonly misunderstood
4. Apply strategies to reduce medicalization and overtreatment in patients with musculoskeletal conditions

Chad Cook, PT, PhD, MBA, FAPTA chad.cook@dm.duke.edu

Dr. Cook is a clinical researcher, physical therapist, and profession advocate with a history of clinical care excellence and service. His passions include refining and improving the patient examination process and validating tools used in day-to-day physical therapist practice. He has authored or co-authored three textbooks, including the influential Orthopedic Physical Examination Tests: An Evidence-Based Approach, and has published over 260 peer-reviewed manuscripts, including approximately 50 studies on diagnostic accuracy. He lectures internationally on orthopedic examination and treatment and is currently Program Director and Interim Chief of the Duke Doctor of Physical Therapy program at Duke University.

Alessandra Trepte, PT, DPT, PhD graciatrepte@campbell.edu

Dr. Alessandra Trepte (Garcia) is a physical therapist, specialist in public health, reviewer, and senior reviewer of scientific medical and physical therapy journals. Her training was heavily oriented towards general orthopedic rehabilitation, with emphasis on patients with spine pain. Alessandra has a master's and a PhD degree and recently completed a post-doctoral follow program at Duke University. Alessandra is currently working as an assistant professor at Campbell University.

4. Value-Based Care for Musculoskeletal Pain: Are Physical Therapists Ready to Deliver?

Early physical therapy models hold great promise for delivering high value care for individuals with musculoskeletal pain. In this presentation, we will describe how the value proposition of early physical therapy can be improved by redefining harm, embracing a prognostic approach to clinical decision-making, and adhering to clinical practice guidelines at an individual provider and system-wide level. We will provide practical examples of delivery models designed to promote high value physical therapy.

Objectives: By the end of this session attendees will be able to:

1. Describe the limitations associated with the current concept of "harm" related to direct access PT and why a new concept is needed
2. Explain why a prognostic approach to clinical decision-making is better aligned with value-based care than the current diagnostic-based clinical decision
3. Describe the importance of advocating for individual provider and system-wide guideline-adherent pain care
4. Compare and contrast different care pathways that incorporate physical therapists in innovative ways

CV/Bio for each speaker; include professional licenses and numbers, academic degrees, educational institutions attended and credentials to teach material, relevant clinical experience to course material (2-3 sentences or can attach CV):

Trevor A. Lentz, PT, PhD, MPH trevor.lentz@duke.edu

Dr Lentz is an Assistant Professor in the Department of Orthopaedic Surgery at Duke University School of Medicine, a member of the Duke Clinical Research Institute, and core faculty in the Duke-Margolis Center for Health Policy. He is a physical therapist and health services researcher with an interest in individual and health care system-level factors that influence patient-reported outcomes, opioid use, health care utilization, and costs following orthopedic injury and surgery. His work has included analyses of large population-based and payer datasets to evaluate the influence of psychological, behavioral, and social characteristics on health care spending and utilization for musculoskeletal pain. His more recent work has focused on the design and implementation of programs that integrate management of pain-related disability and comorbid health conditions in populations with osteoarthritis. Dr. Lentz holds a Master of Physical Therapy (MPT), MPH in health policy and management, and PhD in rehabilitation science from the University of Florida in Gainesville. He completed his postdoctoral fellowship in musculoskeletal outcomes research at the Duke Clinical Research Institute.

Steven Z. George, PT, PhD, FAPTA steven.george@duke.edu

Dr. George received his BS in Physical Therapy from West Virginia University, MS in Orthopedic Physical Therapy and PhD in Rehabilitation Science from the University of Pittsburgh, and completed post-doctoral training in Pain Research and Rehabilitation Outcomes at the University of Florida. At Duke University he is the Laszlo Ormandy Distinguished Professor in Orthopaedic Surgery, Vice Chair of Research in the Department of Orthopaedic Surgery, and Director of Musculoskeletal and Surgical Sciences, Duke Clinical Research Institute. Dr. George's clinical research focuses on musculoskeletal pain populations, including learning more about the transition from acute to chronic pain states and the effectiveness of non-pharmacological treatments. His research projects have been supported by the National Institutes of Health, Department of Defense, Patient Centered Outcomes Research Institute, and the Orthopaedic Academy of the American Physical Therapy Association. Dr. George and his collaborators have authored more than 250 peer-reviewed publications in physical therapy, rehabilitation, medical, orthopaedic, and pain research journals. He is a Contributing Editor for Physical Therapy and on the Editorial Board for Journal of Pain and Archives of Physical Medicine and Rehabilitation. Dr. George's work has been recognized with prestigious awards from the American Physical Therapy Association, American Pain Society, and International Association for the Study of Pain. He was a panel member for the National Academies Workshop on Role of Non-Pharmacological Approaches to Pain Management and currently is working on clinical practice guidelines for the American Physical Therapy Association and American Psychological Association.

5. Screening the Lower Quarter for Alignment and Soft Tissue Extensibility

This session will assist clinicians in assessing the lower quarter of patients who have musculoskeletal pathology. The session should also help clinicians make informed decisions regarding interventions.

Objectives: By the end of this session attendees will be able to:

1. Participants should be able to perform a lower quarter screening exam for alignment and soft tissue extensibility.
2. Participants should be able to determine mechanical contributors to patient pathology of the lower quarter.
3. Participants should be able to design appropriate interventions for these pathologies.

Michael T. Gross, PT, PhD, FAPTA

Dr. Gross is currently Professor, Division of Physical Therapy and Program in Human Movement Science at the University of North Carolina at Chapel Hill. He has taught orthopaedic course content in the DPT Physical Therapy Program and biomechanics in the PhD Program in Human Movement Science for the last 27 years. He has also taught in the athletic training and occupational therapy curricula and currently does didactic and clinical teaching in the Division of Physical Therapy's Orthopaedic Residency Program. He has conducted an active research program with students and has over 60 refereed journal publications. He has lectured nationally

and internationally on musculoskeletal tissue biomechanics, shoulder rehabilitation, lower quarter/foot/ankle rehabilitation, and fabrication of foot orthoses. Dr. Gross has been a physical therapist for 34 years and continues to see patients in the Division of Physical Therapy faculty practice. Dr. Gross received his BA degree from Miami University (Ohio) and a BS in Physical Therapy from the University of Florida and PhD in Education from the University of North Carolina at Chapel Hill.

6. A Concussion CPG for Physical Therapists: What You Need to Know

Concussion is a common injury in the general population, with injury numbers exceeding those for sports concussion. Physical therapists who are treating patients of any age in any practice setting could encounter a patient with concussion. The CPG provides guidance for determination of possible concussion after a concussive event with algorithms for how to approach examination and intervention.

Objectives: By the end of this session attendees will be able to:
1. Describe the process for determining patient readiness for a PT evaluation after sustaining a concussive event.
2. Summarize the recommended sequence of examination and intervention options for patient case examples.
3. Identify PT and other health professionals for referral to address concussion impairments beyond one's scope of practice.

Karen L. McCulloch, PhD, PT, MS, NCS kmac@med.unc.edu

Dr. McCulloch is a Professor in Physical Therapy in the Division of Physical Therapy, Department of Allied Health Sciences, School of Medicine at University of North Carolina – Chapel Hill, where she has taught entry-level and advanced-level students in neurorehabilitation since 1993. She has served in multiple roles within the Academy of Neurologic Physical Therapy, including the inaugural Director of Education, and has been honored with the Service to the Section Award and the APTA Lucy Blair Service Award.

7. Cardio-Oncology: A New Kid on the Block

Increasingly treatment modalities for many cancers are now recognized as being cardiotoxic and cardiac rehabilitation is being advanced as a way to treat these cardiotoxicities. While this approach reasonable, cancer survivors frequently suffer from physical functional deficits in addition to cardiovascular deficits. As such folding oncology rehabilitation into this emerging field of cardio-oncology can provide more robust and comprehensive rehabilitation services to the cancer survivor.

Objectives: By the end of this session attendees will be able to:
1. Discuss the emerging need for clinicians trained in both oncology and cardiology
2. Justify the presence of physical therapist/physical therapist assistant in cardio-oncology settings
3. Argue for the expansion of oncology rehabilitation to include cardiac rehabilitation

G. Stephen Morris, PT PhD., FACSM s.morris@wingate.edu

Dr. Morris is a Distinguished Professor in the Dept. of Physical Therapy, Wingate University, Wingate, NC and a Fellow of the American College of Sports Medicine. For the past 20 years he has focused his research interests on applying the principles of exercise training to the oncology population and has presented his work regionally, nationally and internationally. He is the Past President of the Academy of Oncologic Physical Therapy of the American Physical Therapy Association. Most recently he served as a member of the planning committee of the Multidisciplinary Roundtable on Exercise and Cancer Prevention and Control sponsored by the American College of Sports Medicine and the APTA.

8. The Role of a Non-Wound Care Trained Therapist in Pressure Injury Prevention

Physical and Occupational Therapists are not always thought of when it comes to pressure injury prevention, however their training and knowledge makes them key players on the interprofessional team. Pressure injuries are a costly medical issues that can impact a patient's ability to rehabilitate. It is important for therapists to understand the causes of pressure injuries in order to help reduce a patient's risk. Nursing uses risk assessment instruments to identify patients that are at risk for developing a pressure injury. Many of the elements that therapists address in an evaluation and daily treatment are also being addressed in the risk assessment instruments. This presentation will provide an oversight to help therapists recognize ways to incorporate pressure injury prevention into their evaluation and daily practice and effectively communicate with other healthcare professionals.

Objectives: By the end of this session attendees will be able to:

1. Define patient risk factors for developing pressure injuries
2. Verbalize how therapy evaluations components correspond with Risk Assessment Instruments
3. Explain how identified risk factors can be addressed in patients plan of care
4. Understand how to be part of an interdisciplinary team for prevention of pressure injuries

Stephanie A Slayton, PT, DPT, CWS, CLT-LANA sslayton@vidanthealth.com

Dr. Slayton has been a full-time clinician at Vidant Medical Center for eighteen years and adjunct faculty member at East Carolina University since 2004 in Greenville, NC. Dr. Slayton received her B.S. degree from University Wisconsin – La Crosse, her MPT and tDPT from Elon University. She has board certifications as a Certified Wound Specialist through the AAWC, Certified Lymphedema Therapist from ACOLS, and Board Certified in Lymphedema through LANA. Dr. Slayton was chosen to be a clinician member of the National Pressure Injury Advisory Panel's (NPIAP) Select Support Surface Initiative (S3I) in 2019, has written a book chapter for the American Diabetes Association, has authored and co-authored several peer-reviewed journal articles and poster presentations, and has spoken at a variety of conferences regarding pressure injury prevention and wound management. She has multiple hospital based, regional and national lectures by invitation on wound management and pressure injury prevention throughout years of practice.

Michelle Deppisch, PT, CWS, FACCWS

Michelle Deppisch has practiced in all health care settings. She joined Molnlycke Health Care in 2015 as the Eastern US Clinical Manager for NPWT. She is an alumni of the National

Pressure Ulcer Advisory Panel (NPUAP) Board of Directors, where she served as chairman of the Research Committee, and co-chair to the Support Surface Standards Initiative Task Force. Michelle was instrumental in the development of the 2009, 2014 and 2019 NPIAP Root Cause Analysis instruments. She has authored and co-authored NPIAP White Papers and Position statements. She currently serves as a panel member to the NPIAP representing Molnlycke Health Care, LLC. Michelle has lectured to both nurses and allied health professionals at hospitals, local chapter meetings and national professional organizations and conferences. She has provided facility assessments for pressure injury pathway gap analysis.

9. Physical Therapy Management of Reverse Total Shoulder Arthroplasty

With the prevalence of elective shoulder surgeries rising in the United States amongst the aging population, reverse total shoulder arthroplasty is becoming an ever-popular option. The purpose of this session is to delve into this up-and-coming surgical intervention and better understand the variances in anatomy, protocols, interventions, and outcomes in order to best guide rehabilitation standards of care going forward. Through lecture and discussion, participants will gain a better understanding of how we as physical therapists can play an important role in establishing proper standards of care within our health systems to improve functional outcomes, as well as determine which outcomes are most pertinent to utilize within this population. Case studies and input from leaders in the field of orthopedic surgery and physical therapy will be incorporated, in order to provide attendees knowledge and expertise to initiate discussion within their own clinics and health systems on the topic.

Objectives: By the end of this session attendees will be able to:
1. Describe shoulder anatomy, implications and surgical technique for the reverse total shoulder arthroplasty.
2. Discuss post-operative precautions and prevention of the most common post-surgical complications.
3. Review and discuss variance of physical therapy intervention and protocols, including the importance of early mobilization versus immobilization.
4. Compare the clinical outcomes of reverse total shoulder arthroplasty, total shoulder arthroplasty and hemiarthroplasty.

Benjamin Ramger, PT, DPT bcr9@duke.edu

Dr. Benjamin Ramger is a physical therapist working for Duke University Health System in the outpatient orthopedics and neurologic setting. He recently graduated from Duke University School of Medicine's Doctor of Physical Therapy program in 2019, where he was awarded the Robert Bartlett Student Recognition Award. His clinical interests and experiences lie in general orthopedics, with a particular interest in shoulder and overhead athletes, as well as neurologic conditions including concussion, vestibular rehab, and movement disorders. His clinical expertise in treating patients post-rTSA has transpired from providing patient centered care with Duke Orthopedic Surgeons who specialize in rTSA, reviewing evidence-based practice and collaborating with experienced practitioners within the Duke Health System.

Alixandra Lakow PT, DPT

Dr. Alixandra Lakow is a physical therapist at Duke University Health System where she works with a wide variety of patient populations with a primary focus in Orthopedics. She completed

her Doctorate of Physical Therapy at Florida International University (2016) in Miami, FL where she started her career in both Acute Rehab and Acute Care settings. She transitioned into the outpatient setting in 2018 and is in the process of becoming an Orthopedic Clinical Specialist. She is a clinical instructor for the STEPS students at Duke University DPT program and has presented at the Durham VA grand rounds for the medical residents. Her clinical expertise in treating patients post rTSA has transpired from providing patient centered care with Duke Orthopedic Surgeons who specialize in rTSA, reviewing and implementing evidence-based practice and collaborating with experienced practitioners within the Duke Health System.

10. Combating The Opioid Crisis: An Orthopedic Resident and Manual Therapist's Perspective

In 2017, the Department of Health and Human Services (HHS) declared a public health emergency regarding the opioid crisis. As an allied health profession, physical therapy plays a major role in non-opioid chronic pain management. This course will relate the background and the history of the opioid crisis using statistics of opioid-related events, why these events are on the rise, and its effects on society and physical therapy practice. Utilizing evidence, pain mechanisms and development of chronic pain will be explained. The role of physical therapists in the management and prevention of chronic pain will be explained. The role of PT and PTA's in advocacy for counteracting the opioid crisis will also be examined. Utilizing a multi-disciplinary approach for the management of chronic pain and creating an individualized-action plan will also be explored. Orthopaedic resident and manual therapist's experiences of managing chronic pain and providing patient education will be discussed.

Objectives: By the end of this session attendees will be able to:
1. Explain the importance of the opioid crisis and its effects on physical therapy practice.
2. Analyze the evidence behind the mechanism of pain and discuss the development of chronic pain.
3. Translate the evidence of an individualized approach in the management of chronic pain
4. Evaluate a multidisciplinary approach for chronic pain management

Kyle Stapleton, SPT kyle.b.stapleton@gmail.com

Kyle Stapleton, SPT is a third year DPT student at Sacred Heart University graduating in May of 2020. He will be completing his orthopedic residency at Duke University/Duke Health starting in July 2020. Kyle has been highly involved in the APTA at the national and state level, currently serving on the Academy of Orthopaedic Physical Therapy Public Relations Committee. He previously served as the Director of Communications of the 2018-2019 APTA Student Assembly Board of Directors. Kyle is interested in orthopedic physical therapy, manual therapy, and chronic pain management. Kyle is excited to join North Carolina, become involved in APTA North Carolina and contribute to APTA North Carolina Early Professional SIG.

Emmanuel Yung, PT, DPT

Dr. Emmanuel "Manny" Yung, PT, DPT is a Clinical Assistant Professor and Residency Mentor at Sacred Heart University. He previously mentored Orthopaedic PT residents for 10 years and lectured to over 25 residents yearly at Southern California Kaiser Permanente following completion of his Manual Therapy Fellowship training. Dr. Yung has over 60 peer-reviewed

presentations (nationally and internationally) and publications. He is the Education Committee Vice Chair and Medical Screening Clinical Practice Guideline co-author of the Academy of Orthopedic Physical Therapy, and AAOMPT Core Research Committee Member. Manny has won research, teaching, practice and presentation awards/grants presented by AAOMPT, Sacred Heart, Kaiser and AAOMPT respectively.

11. Don't Fall Behind in Fall Prevention: Using Virtual Fall Risk Screenings to Reach Older Adults at Home

With older adults compelled to stay indoors and practice social isolation in order to combat potential Covid-19 infection, their ability to access evidence-based fall risk screening and fall prevention programming has essentially disappeared. This necessary social distancing and closure of much needed community resources has left older adults at risk for decreased mobility, loss of social interaction, increased frailty, and a potential increase in risk for falls. One potential and timely solution to this problem for some elderly involves bringing fall risk assessments to them virtually as they shelter at home and limit their community engagement in exercise classes of all types. The purpose of this presentation is to share with the learner a piloted virtual fall risk system implemented over the summer of 2020 aimed at providing evidence-based assessment data, education, and online options for fall prevention programming to older adults in the Piedmont Triad area of North Carolina.

Objectives: By the end of this session attendees will be able to:
1. Design an evidence-based virtual fall risk assessment for older adults that is safe and effective
2. Differentiate between the options of virtual platforms for virtual fall risk screenings that would best fit the users' needs, accessibility, and capabilities
3. Recognize best practices for documentation and communication for virtual fall risk screenings
4. Apply a fall risk algorithm to determine fall prevention interventions

Sara Migliarese PT, PhD migliaresesj@wssu.edu

Dr. Migliarese is an associate professor in the Physical Therapy Department at Winston-Salem State University. She received her master's degree in physical therapy from Texas Woman's University in 1985 and worked at The Institute for Rehabilitation and Research (TIRR) in Houston before moving to North Carolina. Sara practiced physical therapy at Forsyth Memorial Hospital and Gentiva Home Health Services, along with adjunct teaching at WSSU BSPT program from 1993-1995 and full-time teaching and ACCE duties in the MPT programs from 1996 - 2004. Sara received her certification in neurology from the American Physical Therapy Association (APTA) in 1995, recertification in neurology in 2005 and in 2014 from the APTA, and Herdman certification in vestibular rehabilitation in 2008. She completed her doctorate in Exercise and Sport Science at the University of North Carolina at Greensboro in 2009 and serves since 2018 as the director of the WSSU-Novant Clinical Neurologic Residency Program. She received her designation as a Multiple Sclerosis Certified Specialist in 2020. She is the PI for the WSSU-Piedmont Partners in Fall Prevention ACL grant, 2019-2021.

Alison Hartman, PT, DPT, is a 2017 graduate of the Physical Therapy Program at Winston-Salem State University. She received her undergraduate degree in exercise science at the University of South Carolina, where she was a member of the Equestrian team. Ali is a representative for Pro-Activity Physical Therapy and owns her own private practice. She is an

adjunct professor at WSSU, while also serving as a grant team member for the ACL WSSU-Piedmont Partners in Fall Prevention 3-year grant.

Dr. LaVerene Garner is a visiting assistant clinical professor in the Department of Physical Therapy at Winston-Salem State University. She received her MPT degree at Elon University in 2001 and is board Certified Clinical Specialist in Neurology since 2018. She is a Parkinson's Foundation Physical Therapy Faculty Scholar and has a certification in vestibular rehabilitation, advanced vestibular certification, and cervicogenic dizziness certification through the APTA. She is pursuing her EdD in Kinesiology at the University of North Carolina – Greensboro.

Nancy Smith, PT, DPT, PhD received her MPT and DPT from Saint Louis University, and her PhD in Curriculum and Instruction with a specialization in Learning Design and Technology at North Carolina State University. She is a Certified Clinical Specialist in Geriatrics from the American Board of Physical Therapy Specialists. Prior to teaching at Winston-Salem State University, she practiced in geriatrics and acute care for 11 years. In her practice, her experiences have ranged from practicing as a staff level therapist to managing multiple skilled nursing facilities clinically and operationally. Dr. Smith holds a Credentialed Clinical Instructor certification and has experience as a clinical instructor. Dr. Smith has also presented locally and nationally on human patient simulation. Dr. Smith's research focuses on the effects of mobile technology on clinical reasoning, and interprofessional education using human patient simulation, community engagement, and standardized patients.

Dr. Christina Criminger, PT, PhD, GCS received her Doctor of Philosophy degree in Physical Therapy from Texas Woman's University, her Master of Physical therapy degree from Winston-Salem State University and her Bachelor of Science in Exercise and Sports Science with a concentration in Sports Medicine from the University of North Carolina at Greensboro. She is a is Board Certified Geriatric Clinical Specialist through the American Board of Physical Therapy Specialist and a Certified Exercise Expert for Aging Adults through the American Physical Therapy Association. Dr. Criminger is an Assistant Professor for the Doctor of Physical Therapy program. She currently teaches human gross anatomy, neuroscience, and neurologic rehabilitation courses within the DPT curriculum. Her areas of clinical practice are with the geriatric and neurologic populations. Her research interests include the use of transcranial direct current stimulation in Parkinson's disease and dual tasking, and the use of innovate educational tools in anatomy education for physical therapy students. She also serves annually on international medical teams providing physical therapy services and education across the globe.

12. Emerging Concepts in Neuroplasticity and Neurorehabilitation

Developing effective rehabilitation programs, especially for chronic central nervous system damage is difficult. Each individual with neurologic dysfunction is unique, with varying sequelae and little similarity in functional deficits. Decades of research have focused on neural plasticity as a component of rehabilitation; however, exciting new research reveals that the nervous system's ability to adapt to experience extends well beyond the synapse. This symposium will provide a summary of experience-dependent neural and myelin plasticity and their roles in motor learning and skill acquisition. We will highlight emerging intervention approaches designed to enhance or preserve plasticity and function in individuals with spinal cord injury, stroke, and Parkinson disease. Training parameters that likely modulate plasticity and function, such as task difficulty, novelty, repetition, intensity, engagement, and others will be considered along with considerations for monitoring effects.

Objectives: By the end of this session attendees will be able to:
1. Understand the neurobiology of activity-dependent neural and white matter plasticity as well as approaches to facilitate plasticity in populations with neurologic dysfunction.
2. Differentiate between the concepts of neuroprotection, neuroplasticity, and neurorestoration through the model of exercise-induced changes in individuals with Parkinson disease.
3. Understand emerging evidence and clinical implications for combining high intensity task-specific rehabilitation therapies (e.g. mCIMT, locomotor training) and non-invasive brain stimulation (e.g., tDCS) to enhance brain plasticity and motor recovery after stroke
4. Understand and recommend approaches for gait rehabilitation in individuals with neurologic dysfunction in the context of emerging concepts in neuroplasticity and motor learning.

Timothy Faw PT, DPT, PhD timothy.faw@duke.edu

Dr. Faw is a Medical Instructor in the Doctor of Physical Therapy Division at Duke University. He received his BS in Exercise Science from Pfeiffer University in 2005 and DPT degree from Duke University in 2009. He completed a clinical residency in Neurologic Physical Therapy through The University of Southern California and Rancho Los Amigos National Rehabilitation Center in 2010 and was certified as a Neurologic Clinical Specialist in 2011. In 2019, Timothy received his PhD in Neuroscience from The Ohio State University. During his PhD training, he received many awards for his research including the Florence P. Kendall Post-professional Doctoral Scholarship and four Promotion of Doctoral Studies scholarships from the Foundation for Physical Therapy Research, including the Patricia Leahy and Mary Lou Barnes Awards. He received an F31 National Research Service Award from the National Institutes of Health for his translational research on experimental rodent models of spinal cord injury (SCI) and human SCI interventional studies. He has several publications focused on training-induced improvements in function and plasticity after SCI.

Jeffrey Hoder PT, DPT, NCS

Dr. Hoder is an Associate Professor within the Doctor of Physical Therapy Program at Duke University, where his primary responsibilities are teaching adult neurologic rehabilitation and gait analysis content across the curriculum. He received both his MSPT and DPT degrees from Rutgers University. Additionally, he received his clinical specialist board certification in Neurology through the American Board of Physical Therapy Specialties in 2003 and was recertified in 2013. At Duke, his clinical areas focus on the management of gait and balance issues for individuals with movement disorders and central vestibular dysfunction. He also supervises and coordinates DPT students for the Duke Health Inter-professional Education (IPE) Clinic within the Emergency Department. Dr. Hoder has been a faculty member for over 13 years in the “Vestibular Rehabilitation: A Competency-Based Course”, now co-sponsored by the Duke University Doctor of Physical Therapy Division and the APTA. He has lectured nationally and internationally on topics related to Movement Disorders and central vestibular dysfunction.

Jody Feld PT, DPT, PhD

Dr. Jody Feld is an Assistant Professor within the Doctor of Physical Therapy Program at Duke University and a Board-Certified Clinical Specialist in Neurologic Physical Therapy. She graduated from Dickinson College in 1991 with a BS in Biology, Hahnemann University in 1995 with an MPT degree, Stony Brook University in 2005 with a DPT degree, and University of North Carolina at Chapel Hill in 2019 with a PhD in Human Movement Science. During her PhD training, she received numerous awards for her research including PODS and P.E.O. Scholar

Award. Her dissertation was supported by an NCTraCS Translational Research Grant supported by NIH funding. As a clinician scholar, her research focus is to reduce mobility disability in people living in community with subacute neurological conditions. Dr. Feld is currently involved in multiple NIH funded studies including a multicenter randomized controlled clinical trial for upper extremity stroke recovery (TRANSPORT2) examining the treatment effect of transcranial direct current stimulation (tDCS) with modified Constraint-Induced Movement Therapy (mCIMT) on measures of motor impairment, functional motor activity, and quality of life.

Kelly Reynolds PT, DPT, NCS

Dr. Kelly Reynolds is a current Faculty Development Resident at Duke University. Dr. Reynolds is a board-certified clinical specialist in neurologic physical therapy by the American Board of Physical Therapy Specialties. She earned a B.S. in Education with a concentration in Sports Medicine from the University of Virginia in 2001 and a Doctor of Physical Therapy degree from Virginia Commonwealth University in 2004. She is currently pursuing a Ph.D. in Health Sciences from Rocky Mountain University and her research interests include identifying noncognitive factors that are predictive of academic success and supporting disadvantaged populations in graduate health professions education. Her clinical work has focused on inpatient adult neurorehabilitation with an emphasis on spinal cord injury and she has presented on this population at several state and national conferences.