

**Neurology Section Programming at Combined Section Meeting
February 16-20, 2010 San Diego**

Locations are including in this version dated 11-2-09 for programs that are sponsored by the Neurology Section. These locations are subject to change through mid January! I do not have the locations of the co-sponsored programs or other programming at this time. Kari Dunning

TUESDAY February 16

8:00AM to 5:00PM Preconference Course A

Neurologic Practice Essentials: Clinical Decision Making as a Foundation for Expert Practice

2 days: Tuesday February 16 8:00AM to 5:00PM and Wednesday 8:00AM to 5:00PM

Location: Convention Center Room 29A

Speakers: Kathleen M. Gill-Body, DPT, MS, NCS; Cynthia M. Zablony, MS, DPT, NCS, Patty L. Scheets, PT, DPT, NCS

Novices develop clinical competence and evolve into expert practitioners by making decisions that involved the complementary processes of systematic analysis and intuition. This 2-day course was developed with the overall objective of strengthening skills for all therapists seeking to advance their neurologic physical therapist practice. Participants will utilize current frameworks for clinical decision making to assist them in analyzing neurologic patient cases in the areas of balance and falls, brain injury, Guillain-Barre syndrome, Parkinsons disease, spinal cord injury, stroke, and vestibular dysfunction. Participants will apply current evidence and clinical guidelines in making patient management decisions particularly in the areas of evaluation, prognosis, and intervention. Given both the breadth and the depth of the course, participation may assist the physical therapist interested in sitting for the Neurologic Clinical Specialist exam.

Upon successful completion of this course, participants will: 1) Complete a self-evaluation of preparedness for advanced neurologic physical therapist practice and describe strategies for individual professional growth.; 2) Systematically apply clinical decision making frameworks to neurologic physical therapy practice including examination, screening for referral, evaluation, diagnosis, prognosis, and intervention (including treatment progression); 3) Develop focused clinical questions for seeking evidence to support clinical decisions. 4) Accurately apply current evidence and clinical practice guidelines, in combination with patient values, to optimize prognostic and intervention decisions in a variety of neurologic patient populations. 5) Discuss 10 "take home messages" for elevating practice that can be implemented in the clinical environment.

12:30PM to 5:15PM Preconference Course B

Gaming Augmented Physical Therapy: Beyond the Wii

Speakers: Judith E. Deutsch, PT, PhD; Sheryl Flynn, PhD PT; Belinda Lange, PT, PhD

1.5 Days: Tuesday February 16 12:30PM to 5:15PM and Wednesday 8:00 AM to 5:00 PM

Location: Convention Center Room 28DE

This one and a half day workshop will examine the use of gaming to augment physical therapy. The theoretical basis for using gaming in rehabilitation coupled with evaluation of the current evidence to support its use will be presented. Methods for evaluating games and implementing in clinical practice will be discussed. Experiential learning with at least four different gaming consoles will be provided. These will consist of gaming practice and learning as well as case based analysis for implementation of games in practice.

Upon completion of this course, you will be able to: 1. Summarize the theoretical rationale and evidence to support the use of gaming in physical therapy; 2. Analyze and select gaming consoles and specific games for their motor control requirements and feedback

capabilities; 3. Use the Wii and Wii Fit, Play Station II, and U-Dance; 4. Design a plan of care that integrates off-the shelf gaming consoles for a variety of clients; 5. Contrast the strengths and limitations of off-the-shelf gaming systems; 6. Access new information on technology development that affects rehabilitation.

WEDNESDAY February 17

8:00AM to 5:00 M Preconference Course A

Neurologic Practice Essentials: Clinical Decision Making as a Foundation for Expert Practice

Speakers: Kathleen M. Gill-Body, DPT, MS, NCS; Cynthia M. Zablony, MS, DPT

Location: Convention Center Room 29A

8:00 AM to 5:00 PM Preconference Course B

Gaming Augmented Physical Therapy: Beyond the Wii

Speakers: Judith E. Deutsch, PT, PhD; Sheryl Flynn, PhD PT; Belinda Lange, PT, PhD

Location: Convention Center Room 28DE

7:00 PM to 8:30 PM

Opening Ceremonies and American Board of Physical Therapy Specialists (ABPTS) recognition of Clinical Specialists

THURSDAY February 18

6:45AM to 7:45 AM

First Time at CSM? Welcome to First Timers' Breakfast

Location: Hilton Aqua 310

8:00AM to 10:00 AM

Multisection Programming: Concussion and Mild Traumatic Brain Injury: Update 2010

Speakers: Robert Cantu, MD, Kevin Guskiewicz, PhD, ATC, Christopher Nowinski, Susan L. Whitney, PT, PhD, NCS, ATC, FAPTA

This multi-section program is designed to provide attendees from various practice settings the most recent scientific and clinical recommendations for assessing and treating patients who have sustained a sport-related concussion. The emerging field of concussion and mild traumatic brain injury rehabilitation will also be addressed. Multiple Level .2 CEUs

10:30AM to 12:15PM

Sensory Dysfunction Following Stroke: Incidence, Significance, Examination and Intervention

Speaker: Jane E. Sullivan, PT, DHS

Location: Convention Center Room 25 ABC

Recent studies have provided evidence of the widespread incidence of sensory dysfunction following stroke. These findings are important because post-stroke sensory loss has been associated with poorer outcomes in areas such as motor capacity, functional abilities, length of in-patient stay, and in quality of life. Many of the clinical tests commonly used to examine sensation have been not found to be valid or reliable. This is problematic because accurate assessment of sensation may help predict outcomes as well as assist clinicians to select appropriate intervention strategies. Finally, there is emerging evidence supporting the efficacy of interventions that target the sensory systems. This session will review the incidence, significance, examination, and interventions for sensory dysfunction following stroke and summarize the important characteristics of interventions directed at somatosensation.

Upon completion of this course, you'll be able to: 1) Discuss the incidence and significance of sensory dysfunction following stroke. 2) Summarize current evidence on the psychometrics and clinical utility of various sensory examination tools. 3) Discuss the evidence regarding interventions that target the somatosensory systems following stroke. 4) Describe the key parameters of somatosensory interventions for individuals following stroke. (Multiple Level) .15 CEU

10:30AM to 12:15PM

Implementing a neuroplasticity-principled rehabilitation model across disease severity in Parkinson's Disease

Speakers: Valerie A. Carter, DPT; Becky G. Farley, PT, PhD

Location: Convention Center Room 28 CDE

Recent advances in neuroscience have brought exercise to the forefront of therapeutic options for people with Parkinson disease (PD). This course will summarize the animal research as it relates to driving neuroplasticity, behavioral recovery, and cardiorespiratory and metabolic adaptations in the human condition. These data will provide the rationale for early intervention, intensity, continuous forced use, task-specificity and avoidance of inactivity. We will provide a clinical framework with video case studies for translation to real world intervention and implementation across disease severity. This rehabilitation model will incorporate principles of motor learning, neuroplasticity, Parkinson's disease pathophysiology, evidenced-based guidelines, task-specific training approaches, and recent exercise research. We will include a

discussion of the barriers of implementation along with (potential) solutions and novel programming to promote education, awareness, early referral, motivation, self-efficacy, and continuous access

Upon completion of this course, you'll be able to: 1) Describe historical perspective on treatment and research in PD. 2) Summarize the key exercise research in PD. Upon completion of this course, you'll be able to: animal models of PD as it relates to disease severity in the human condition. 3) Translate neuroplasticity principles identified in animal research to present day practice. (i.e., early intervention, intensity, continuous forced use, task-specificity, and avoidance of inactivity). 4) Provide the framework for a PD-specific intervention approach that integrates function with the neuroplasticity principles. 5) Introduce specific exercises and various progressions using video case studies to expedite the translation of these findings to real world intervention and implementation across disease severity. 6) Discuss barriers to the implementation of neuroplasticity-based therapeutic approaches for people with PD and potential solutions. (Multiple Level) .175 CEU

10:30AM to 1:30PM

Evidence Based Medicine: Multiple Sclerosis Drugs and Exercise Implications

Speakers: Mary Jane Myslinski, PT, MA, EdM, EdD; Steven Kantor, DPT

Joint Programming: Sponsored by Acute care; Co-sponsored by Neurology

This course will focus on the drugs for patients with MS: avonex, beta serone, copaxone,(ABCs,) rebif, the monoclonal antibodies (mAbs) and their exercise implications. A presentation of the newest drugs will also be included. The use of these drugs depending upon the classification of MS and the newest information on pathology and treatment will also be presented. Interventions will be discussed for the different classifications of MS and for the secondary deconditioning that occurs with this pathology. The mechanisms of fatigue will be presented using the muscle fiber type as the basis of the fatigue.

Upon completing the course, you'll be able to: 1. Identify the mechanisms of action of the drugs and the side effects. 2. Classify the disease state into the type of MS and understand which drugs are effective for that classification. 3. Design an exercise prescription for a patient with MS based on the classification of the disease. 4. Identify the newest EBM regarding pathology, drugs, and outcomes. Intermediate Level

10:30AM to 12:15PM

The Role of Biomechanics in the Management of Upper and Lower Extremity Dysfunction: Emerging Interventions for Individuals with Neurological Involvement

Speaker: Speakers: Judith Burnfield, PT, PhD - Lincoln, NE; Stephanie Combs, PT, PhD - Indianapolis, IN; Margaret Finley, PT, PhD - Indianapolis, IN

Joint Programming: Sponsored by: Research; Co-Sponsored by: Federal Physical Therapy Section; Neurology Joint Programming

Biomechanical tools and principles provide a framework for understanding causes of movement pathology and guiding development of new and innovative treatment approaches. The purpose of this 2-hour session is to apply knowledge of upper and lower biomechanics of persons with impairments from chronic stroke and other disabilities to clinical practice. The first session will focus on kinematic measures of upper extremity function and their relationship to clinical outcomes in persons with chronic stroke. Robotic rehabilitation as well as a novel home-based rehabilitation program will be presented. The second session will feature clinical gait analysis including measures of lower extremity intralimb and interlimb coordination, paretic propulsion and joint work in persons with chronic stroke. Clinical outcomes following gait retraining with body weight supported treadmill training will be discussed. The final session will highlight biomechanical findings (lower extremity kinematic, electromyographic and plantar pressure) during gait and exercise and discuss implications for treatment planning in therapy and community settings (e.g., fitness and home environments). Development of to assist with

gait and cardiovascular retraining efforts in clients with neurologic involvement. ICARE (Intelligently Controlled Assistive Rehabilitation Elliptical training system), a novel treatment system for helping individuals regain walking and cardiovascular function will be presented. Throughout the program, attendees will gain an understanding of how biomechanics can be applied to physical therapy examination and how these measurements contribute to the advancement of clinical practice for patients with chronic neurologic disorders. Upon completion of this course, you'll be able to: 1) Understand the relationship of robotic-derived outcome measures to clinically obtained outcome measures. 2) Identify the importance of scapular kinematics in patients with upper extremity impairments from chronic stroke. 3) Illustrate alterations in intralimb and interlimb coordination after body weight supported treadmill training using dynamic collective variables. 4) Recognize contributions of the paretic limb to overground walking in persons with chronic stroke through application of kinetic analyses. 5) Compare the biomechanical demands (kinematic, EMG, plantar pressure) of elliptical training to gait. 6) Describe elliptical trainer modifications that can be implemented.

12:30PM to 2:00PM

Balance Assessment in Different Practice Settings: Can and Should We Use the Same Measures

Balance and Falls SIG Meeting and Educational Session

Moderator: Leslie Allison, PT, PhD;

Panel Members: Melissa S. Fong, PT, DPT, NCS and Tammie Johnson, MS, DPT., Jennifer Ellis, MS, PT

Location: Hilton Indigo GH

Our assumptions concerning balance [how balance is controlled] shape how we assess and treat balance disorders'. Last year we discussed concepts and definitions of balance. We also discussed which balance tests best fit these definitions. We are now to the question: Can a measure or a set of measures apply across practice settings? Can we and should we use a measure (or measures) in both clinical research and practice? Come to the Neurology Sections Balance and Falls SIG meeting and join the thought provoking discussion! Through panel and group discussion, we will review and compare balance measurement tools and discuss in what settings they should be utilized. The goal of this meeting is to take the next big step in determining what balance measures to use when!

Upon completion of this course, you'll be able to: 1) Share with the group the balance tests you use, any evidence that supports the use of those tools and within what setting are the tools used. 2) Identify and propose appropriate balance measures used in different settings. 3) Develop a first-draft consensus agreement on the optimal balance outcome measure(s) across practice settings. (Multiple Level) .15 CEU

12:30PM to 2:00PM

Vestibular disorders after Head Trauma: Cutting Edge Diagnosis and Management: The Team Approach

Brain Injury SIG Meeting and Educational Session

Speakers: Kim R. Gottshall, PhD, PT, ATC; Michael E. Hoffer, MD; Steve D. Pluth, PhD

Location: Convention Center Room 28 CDE

Blunt and blast head traumatic brain injury (TBI) is a common cause of vestibular disorders. TBI secondary to blast exposure is a significant operational issue of international concern. Our Comprehensive Combat Casualty Care Center experience evaluating and treating a large group of patients with mild TBI. In this presentation the vestibular physical therapist, otolaryngologist, and neuropsychologist will discuss the integrated approach and patient goal setting for vestibular patients with mTBI. This is the Neurology Section Brain Injury SIG meeting and educational session.

Upon completion of this course, you'll be able to: 1) Discuss the proposed pathophysiology associated with mTBI. 2) Recognize the vestibular symptoms of mTBI. 3) Compare and contrast the signs and symptoms of post concussive syndrome versus post-traumatic stress disorder. 4) Accurately identify cognitive, vestibular and balance disorders in patients who have sustained mTBI and require further assessment and intervention. (Basic) .15 CEU

2:30PM to 4:30PM

Treating the Acute Stroke Patient: Making treatment decisions utilizing best practice guidelines from available evidence

Clinical Excellence Awardee

Speaker: Diane Nichols, PT, NCS

Location: Hilton Indigo GH

Current evidence in the treatment of stroke subjects suggests early ambulation optimizes outcomes in the acute phase of recovery. How does this best-practice guideline fit with our notions of managing patients with dense hemiplegias, sensory deficits and poor postural control in those early weeks after stroke? Do we simply want higher FIM numbers or do we want improved motor control that leads to improved function? This session will integrate management of significant impairments of the limbs and trunk with task specific training to improve functional mobility. Through task analysis and problem solving of impaired movement, we will discuss how to guide your treatment strategies to achieve better outcomes in the acute and sub-acute phases of stroke recovery. Current research with the Zero G, a dynamic BWS over-ground gait system, and other technologies to enhance recovery will also be discussed.

Upon completion of this course, you'll be able to: 1. Describe current evidence on best practices to guide your treatment decisions 2. Identify critical deficient components of your patient's movement through task analysis and problem solving 3. Discuss treatment strategies to address missing or deficient components in task related training 4. Synthesize available information for decision-making regarding when to allow compensations versus reeducating a task within a treatment session or for long term goals 5) Utilize activity categories to aid progression of tasks. (Intermediate) .2 CEU

2:30PM to 4:30PM

Use of computer gaming as an adjunct during outpatient stroke rehabilitation to obtain repetitive task-specific upper extremity practice

Speakers: Ann K. Reinthal, PT, PhD, NCS; Mary Milidonis, PT, PhD; Marcy Stalvey PT, MS, NCS; Susan Linder, PT, MHS, NCS; Kathy Szirony, PT

Location: Convention Center Room 28 CDE

Current research supports that multiple repetitions of task specific practice are essential to improvement in function post stroke. However, recent work has shown that individuals post stroke are not getting the necessary repetitive practice in the outpatient setting, especially related to upper extremity activities. This presentations reviews a pilot multi-site study that assessed the effectiveness of providing additional repetitive, task-specific upper extremity practice using computer gaming as an adjunct to concurrent outpatient physical/occupational therapy post stroke

Upon completion of this course, you'll be able to: 1) Understand the importance of repetitive task specific practice in recovery of function post stroke. 2) Review evidence on the occurrence of repetitive task specific practice in the current outpatient setting. 3) Analyze how computer games, specifically Wii and Playstation2 with the Eye Toy, can be used to achieve repetitive task specific upper extremity practice. 4) Examine modifications to commercial gaming applications that are necessary at various levels of upper extremity motor function post stroke. 5) Discuss feasibility issues related to achieving repetitive upper extremity task specific practice in the outpatient setting. 6) Interpret changes in motor function found as a result of repetitive

task specific practice using computer gaming. 7) Identify additional questions raised by this pilot clinical study and directions for additional investigation. (Multiple Level) .175 CEU

2:30PM to 3:30PM

Action Potential

Speakers: Lee Dibble, PT, PhD, ATC; Elizabeth Rasch, PT, PhD; and Sandra A. Billinger, PT, PhD, FAHA

Location: Convention Center 30 A

Physical Therapists who practice in the area of neurology often express an interest in getting involved and participating in the Neurology section. However, many have conveyed a lack of awareness of the structure and function of the Neurology section and the ways in which one can become involved. The goal of this session will be to give participants a succinct overview of the organization of the section to increase their knowledge of the responsibilities associated with each position. Many physical therapists are also interested in further professional development which may span a variety of areas including clinical practice, leadership, research and education. Instructors will use examples to demonstrate how participation in the section can facilitate one's professional growth in a particular area of interest. Course faculty will clearly delineate the steps get involved in a variety of positions within the Neurology Section

Upon completion of this course, you'll be able to: 1) Recognize the role of the Neurology Section, the benefits of being a member and the ways in which you can become involved. 2) Describe the organizational structure of the Neurology Section and the responsibilities associated with each position (elected and appointed). 3) Describe how participation in the Neurology section is applicable to your career goals in the areas of: (a) improving clinical skills; (b) leadership; (c) research; (d) education. (Basic) .1 CEU

4:30PM to 6:30PM

Exhibit Hall Break

FRIDAY February 19

7:00AM to 8:30 AM

Neurologic Clinical Specialists' Breakfast: How Can You Become a Change Agent for Reasonable Reimbursement for Neurologic Clinical Services?

Speakers: Cynthia M. Zablony, MS, DPT; Susan L. Whitney, PT, PhD NCS, ATC, FAPTA
Location: Hilton Indigo 206

Congratulations to our new and recertified ABPTS Clinical Specialists in Neurologic Physical Therapy! New and current NCS's are invited for breakfast, stimulating conversation, networking opportunities, and an exciting presentation. Please take this opportunity to meet other neurologic clinical specialists. Upon completion of this course, you'll be able to: 1) Discuss the role of the neurologic clinical specialist in advocating for reasonable reimbursement for neurologic physical therapy services. (Intermediate) .15 CEU

8:00AM to 11:00AM

Neuro-Oncology for the Physical Therapist: Rehabilitation Considerations in Adults with Primary and Metastatic Central Nervous System Malignancies

Speakers: Willie Ching, PT, NCS; Melissa Luhmann, MSPT

Joint Programming Sponsored by: Oncology; Co-Sponsored by: Neurology

As options for the medical management of primary and metastatic CNS malignancies increase, mortality has decreased or been delayed. However, as a result, patients are often left with increasing disabilities. In this course a review of current medical treatments for adult patients with CNS malignancies will be presented, including possible complications and side effects that could impact the patient's quality of life and functional independence. The importance of accurate rehabilitation assessments and interventions, and current obstacles of such will be highlighted. Both evidence-based and experiential practices for the physical therapist will be offered. Future directions for the rehabilitation professional in this area of practice will be discussed. This session will include case studies. Upon completion of this course, you'll be able to: 1) Describe the current medical management of the adult patient with CNS malignancies that can impact rehabilitation interventions. 2) Identify the complications and/or side effects of the cancer treatments of the adult neuro-oncologic patient. 3) Distinguish between the sequelae of the primary lesions of the malignancies versus the possible side effects of cancer treatments, and 4) Choose the proper assessment tools for adult patients with CNS malignancies. 5) Develop the most appropriate treatment strategies to maximize the rehabilitation potential of the adult patient with CNS malignancies. (Intermediate) - 0.30 CEUs

8:00AM to 11:00AM

Stepping Forward with Gait Rehabilitation

Speakers: Sara Mulroy, PT, PhD; Rebecca Craik, PT, PhD

Location: Hilton Indigo EF

Researchers who contributed to PTJ's Special Series on Gait share the highlights of their work and demonstrate cutting-edge and future directions in gait assessment and rehabilitation. Get a crash course in new knowledge related to theoretical frameworks; insights from a variety of gait paradigms; measurement strategies, such as accelerometry for measuring community ambulation in stroke and ambulatory self-efficacy in frail older adults; and gait applications such as virtual reality, mental practice, and body-weight supported treadmill training. You'll also identify exciting opportunities in both research and practice. PTJ's Special Series on Gait, published in late 2009, honors Dr Jacqueline Perry and her many invaluable contributions to the field of gait rehabilitation over more than 40 years

Upon completion of this course, you'll be able to: 1) Discuss theoretical frameworks of gait and determinants of gait and the clinical implications of these frameworks. 2) Integrate into your own practice some of the neurophysiological insights from the split belt walking paradigm

and the cognitive insights from various gait paradigms. 3) Explain how to apply new gait measurements, including the use of accelerometry for measurement of community ambulation in stroke, energy expenditure in gait, and ambulatory self-efficacy in frail older adults. 4) Describe intervention applications in gait, from virtual reality, to mental practice, to gait function post hip fracture, to use of gait for surgical intervention and screening, to gait intervention in conditions such as cerebral palsy and Parkinson disease, to gait and patellofemoral joint injury (Intermediate) .3 CEU

8:00AM to 11:00AM

Research Platform I: Balance and Falls in Multiple Patient Populations

Location: Hilton Sapphire L

11:00AM to 1:00PM

Neurology Posters

11:00AM to 1:00PM

Exhibit Hall Break

1:00PM to 3:45PM

A Learning Module for Neurorehabilitation Curriculum: Walking Recovery, Locomotor Training, and Incomplete Spinal Cord Injury

Speakers: Andrea Behrman, PhD; Sue A. Sisto, PT, MA, Ph.D.; Elizabeth Ardolino, PT, MS; D. Michele Basso, Ed.D., PT; Linda Behar-Hornstein, PhD

Location: Convention Center 29 AB

This course is recommended for PT academic faculty and clinicians who teach adult neurorehabilitation. A learning module for use in an entry-level DPT curriculum will be presented that introduces the PT student to locomotor training (LT) aimed at walking recovery for individuals with incomplete spinal cord injury (SCI). Both content and process will be emphasized. Thus, this module addresses what the students learn and specific experiences to optimize learning. Overall, faculty/clinicians attending this session will learn principles that guide locomotor training; understand its development and translation from basic science to a clinical intervention; and understand its context within rehabilitation interventions. Practical application will be introduced including training skills, progression, clinical decision-making, and outcome measures. The entire module will be made available to the attendees on CD

Upon completion of this course, you'll be able to: 1) Apply an introductory knowledge of the clinical application of locomotor training as a therapeutic intervention for walking recovery after incomplete spinal cord injury for instruction in academic programs training entry-level DPTs. 2) Apply learning and teaching strategies emphasizing experiential learning, discovery, critical thinking, professionalism in meeting the needs of varied student learning styles.

Course objectives specific to the locomotor training content: Students will be able to: 1) Identify a framework for the neural control of walking as the basis for developing interventions and performance measures, and for application to rehabilitation. 2) Compare and contrast compensation vs. recovery-based (activity-based approaches) to the rehabilitation of walking after incomplete SCI. 3) Describe basic science evidence and its translation in development of a physiological-based intervention for walking recovery after SCI. 4) List training principles for walking recovery across training environments. 5) Use a decision-making algorithm in selecting patients for LT and in progression of patients for walking recovery. 6) Add to a 'therapeutic toolbox' and to an 'assessment toolbox' for rehabilitation after incomplete SCI. 7) Assess on-going evidence for application to walking recovery and rehabilitation. (Intermediate) .275 CEU

1:00PM to 3:45PM

An instrumented step beyond gait speed: Mechanisms of Gait Dysfunction and Recovery Post-stroke

Speakers:Carolynn Patten, Ph.D.; Marilyn Wyatt, MA, PT; Ilse Jonkers, Ph.D., PT; Steve Kautz, Ph.D

Location: Hilton Sapphire KLOP

Observational gait analysis and walking speed represent fundamental clinical measurements in neurorehabilitation. While efficient for clinical use, these tools provide non-specific information regarding gait impairments or mechanisms of locomotor recovery. Instrumented motion analysis elaborates upon descriptive clinical assessments and provides means to: quantify key gait parameters; identify neuromechanics of gait dysfunction; and monitor these specific mechanisms longitudinally. This session will introduce clinicians and clinical researchers to instrumented motion analysis as a set of tools to better understand gait dysfunction in persons post-stroke. Case studies and video examples will provide a basis for clinical interpretation including translation between instrumented and clinical measures. Finally, data from contemporary interventions will be discussed in an effort to provide evidence for recovery and/or compensation across levels of the ICF Model.

Upon completion of this course, you'll be able to: 1) Recognize and identify observational gait events from kinematics, kinetics and EMG. 2) Recognize critical gait impairments that contribute to stroke-related walking dysfunction. 3) Understand the critical biomechanical contributions to clinical assessment tools including: fast walking speed, gait speed modulation and paretic step length ratio. 4) Understand current research results reporting outcomes of therapeutic interventions including: clinic-based gait training, dynamic strengthening, and locomotor training. (Intermediate) .275 CEU

1:00PM to 2:00PM

Getting Published in JNPT: A Chat with the Editor and Editorial Board

Speaker: Edelle C. Field-Fote, PT, PhD

Location: Hilton Cobalt 505

The Journal of Neurologic Physical Therapy (JNPT) is YOUR Neurology Section journal. Do you have ideas to enhance the usefulness of the journal's print or digital content? Have you thought about submitting an article, but were uncertain about what it entails? Do you have questions about becoming a reviewer? This informal discussion session will provide information about becoming involved with JNPT either as a contributor or reviewer for the Neurology Section's journal. The Editor and Editorial Board look forward to chatting with you.

Upon completion of this course, you'll be able to: 1) Describe the manuscript submission process. 2) Describe how to become a reviewer. 3) Discuss what's new at JNPT. 4) Interact with the Editor and Editorial Board. (Intermediate) .1

1:00 to 3:00 pm

Endurance in the Neurologic Rehab Population: Assessment, Intervention, and Outcome Measures

Joint Programming: Sponsored by Acute Care; co-sponsors: Geriatrics; Neurology

Speakers: Pamela Bartlo, DPT; Angela Jocoy, PT, MSPT, NDT

Endurance is a key impairment seen in the adult neurological rehabilitation population. Impairments in cardiorespiratory endurance will affect activity tolerance, rehabilitation participation, and patient function. As integral parts of the rehab team, physical therapists and physical therapist assistants must address issues of endurance assessment, intervention, and measurement of outcomes. This session will guide the therapist through the utilization of appropriate standardized tests, as well as general interventions for endurance. Measurement of endurance outcomes will also be presented. The primary patient populations for this session

will be spinal cord injury (SCI), traumatic brain injury (TBI), and stroke. Some minor information will be presented in regards to patients with multiple sclerosis and post-polio syndrome. \ Upon completion of this course, you'll be able to: 1) Identify appropriate standardized tests of endurance for patients with SCI, TBI, and stroke. 2) Explain benefits and drawbacks of each test in relation to patients with SCI, TBI, and stroke. 3) Analyze various intervention strategies for endurance to decide which is most appropriate for the patient. 4) Describe appropriate methods to address endurance within the neurological treatment program. 5) Explain methods of measurement of endurance outcomes with a patient with a neurological injury. (Intermediate) .2 CEU

4:00PM to 5:30PM

**Cervicogenic Dizziness: Perspectives on Evaluation and Treatment
Vestibular SIG Meeting and Educational Session**

Speakers: Rob Landel, DPT, OCS; Diane M. Wrisley, PhD, PT, NCS

Location: Hilton Indigo EF

Patients with cervical dysfunction can present with complaints of dizziness and disequilibrium associated with impairments of the cervical spine. Traditionally considered a diagnosis of exclusion, cervicogenic dizziness rarely presents in isolation, making recognition and treatment of this condition challenging. Current practice suggests that a combination of vestibular rehabilitation, balance retraining and manual therapy techniques may be effective in treating persons with this condition. Two nationally recognized experts will share their expertise in the evaluation and treatment of persons with cervicogenic dizziness. This is the Neurology Section Vestibular SIG meeting and educational session.

Upon completion of this course, you'll be able to: 1) Identify patients with complaints of dizziness and/or disequilibrium associated with cervical spine dysfunction. 2) Evaluate and use objective measures for persons with cervicogenic dizziness. 3) Describe effective treatment techniques for persons with cervicogenic dizziness. 4) Describe current and emerging evidence regarding cervicogenic dizziness. 5) Discuss the current relevant literature regarding manifestations of cervical impairments on postural and oculomotor control and complaints of dizziness. (Intermediate) .15 CEU

4:00PM to 5:30PM

An intensive whole body deficit-targeted exercise approach for people with Parkinson's disease – LSVT® BIG

Degenerative Diseases SIG Meeting and Educational Session

Speaker: Becky G. Farley, PT, PhD

Location: Convention Center Room 30 CD

Exercise protocols that promote neuroplasticity are characterized by intensive practice (i.e., total time, repetition, difficulty) and 'forced use' of the impaired limbs that is greater than what would be self-selected. Traditional approaches for patients with Parkinson's disease typically do not advocate for intensive bouts of practice, or progressively challenge patients to use high effort to override whole body hypokinesia. This presentation will discuss the rationale and efficacy data supporting a novel behavioral intervention that directly targets high effort for bigger/faster movements while retraining sensory perceptions to teach self-monitoring. The standardized protocol (LSVT BIG) adheres to the essential neuroplasticity principles of practice. Training a single focus (BIG) can be applied across disease severity, tasks and disciplines, potentially maximizing retention and transfer of effects across motor systems. This is the Neurology Section Degenerative Disease SIG meeting and educational session.

Upon completion of this course, you'll be able to: 1) Discuss the theoretical and empirical rationale for extending the application of an efficacious amplitude-focused speech therapy treatment (LSVT' LOUD) to physical therapy (LSVT' BIG). 2) Review the initial efficacy results of an NIH funded RCT of amplitude-focused physical therapy in people with PD with mild to

moderate disease severity. 3) Provide the rationale and pilot data for targeting speech and limb motor deficits simultaneously in an integrated whole body and speech amplitude-focused rehabilitation approach (LSVT' Hybrid). 4) Discuss how PD-specific neuroplasticity-principled approaches can target the prevention of motor disability and be integrated into community fitness programs. 5) Present amplitude-focused speech and physical therapy treatment concepts (interactive) with video demos. (Intermediate) .15 CEU

6:00PM to 9:00PM

Myelin Melter: Neurology Section Reception and Business Meeting

Location: Hilton Indigo D

SATURDAY February 20

8:00AM to 10:00AM

Practice Issues Forum: Exploring Opportunities for Life Long Learning in a Doctoring Profession

Speakers: Genevieve Zipp, PT, EdD; Valerie Teglia, PT,DPT,NCS; Kathryn Mitchell, PT, DPT, NCS; Heather Hayes, PT

Location: Convention Center Room 28 CD

As members of a doctoring profession we must continually search for opportunities to advance our skill level and grow as professionals. Determining the most effective path to reach this goal is not always clear given the diverse options for knowledge advancement. Upon completion of this course, you'll be able to: 1) Explore a model of diverse educational experiences that meets the needs of a neurologic physical therapist from novice to the advanced level. 2) Evaluate the skill levels of continuing education experiences. 3) Propose and assess options for effective life long learning opportunities. (Intermediate) .2 CEU

8:00AM to 11:00AM

Research Platform II: Motor Learning and Training

Location: Convention Center Room 31 C

8:00AM to 11:00AM

Functional Electrical Stimulation for Persons with Neurologic Gait Dysfunction: Theories to Practice

Speakers: Keith McBride, PT, PhD; Kari Dunning, PT, PhD; Candy Tefertiller, MPT, ATP, NCS; Suzanne L. Tinsley, PT, PhD

Joint Program: Clinical Electrophysiology and Wound Management; Co-Sponsored by Neurology, Geriatrics

Functional electrical stimulation (FES) has been utilized for many years in the treatment of persons with neurologic injury. Recent advancements in the technology have made the intervention more amenable to clinical and community use. Along with technological improvements, the evidence base investigating the use of FES is growing. Specifically, foot drop stimulation (FDS) has been garnering a good deal of attention in person with stroke, spinal cord injury and multiple sclerosis. Reports of the effects of FDS customarily fall into two categories/approaches; orthotic and therapeutic. FDS systems vary in construct, but offer similar basic parameters (waveforms, ramping, delays, frequency, duration) to achieve their outcome. The theoretical impact of these parameters on physiologic response and the biomechanics of gait are often overlooked by clinicians. Successfully deploying the systems in the clinical setting often requires additional decision making and understanding of the technology as part of a comprehensive evidence based approach. This purpose of this session will be to describe the methodology of set up of FES as well as presenting case studies using FES for gait training in various patient populations. The presentation will describe the basic theories behind parameter selection of FDS systems as they pertain to their impact on gait dysfunction including swing clearance, stance control, fatigue, recruitment, spasticity, tolerance, and rehabilitative training. Comparative discussion to standard ankle foot orthoses (AFO) will also be included. Case studies will be presented reflecting clinical integration of FES in persons with stroke, spinal cord injury and multiple sclerosis. Models of approach (orthotic versus therapeutic) will be discussed and adjunctive stimulation of the lower limb as well as combination of other rehabilitative techniques will be explored. Examples of currently used clinical protocols/algorithms will also be discussed as well as home-use progression. Upon completion of this course, you'll be able to: 1) Define the difference between orthotic and therapeutic effects of FES. 2) Describe the basic parameters of FES, clinical rationale for adjustments, and potential impact on patient response/outcome. 3) Describe potential

biomechanical differences between FDS and an AFO. 4) Identify specific gait deficits that may be amenable to change with FES. 5) Integrate FES into a comprehensive treatment approach for gait training. 6) Describe various strategies with FES utilization in patient populations and presentations including stroke, spinal cord injury and multiple sclerosis.

Course Level - Intermediate) - 0.28 CEUs

8:00AM to 11:00AM

Innovations in Technology for PT: Wii and Beyond

Joint Program: Sponsored by: Health Policy and Administration; Co-Sponsored by: Orthopaedics; Neurology

Judith E Deutsch, PT, PhD; Robert Latz, PT, DPT, GCFP; Steven G Wilkinson, PhD

This course will review the current use of interactive gaming technology in Physical Therapy. Topics will include the use of the Nintendo Wii and related technology in the clinical setting and in learning environments. This presentation will review how these devices can be used as intervention tools in various clinical settings. Their use as instructional tools will also be discussed. We will include an update of related research from the past year. The presentation will conclude with an interactive discussion with the audience. Upon completion of this course, you'll be able to: 1) Recognize the use of the Wii and related technology within Physical Therapy. 2) Discuss the current research as related to the Wii and similar technology from an evidence based practice perspective. 3) Describe the potential use of the Wii as an instructional tool. 4) Recognize potential clinical uses of Wii and similar technology. (Course Level - Basic) - 0.30 CEUs

11:00AM to 1:00AM

Exhibit Hall Break

1:00PM to 3:00PM

Neurology Section SIG Round Table Discussions

- **Fall Risk Assessment and Measures Used for Fall Risk: Are They the Same as Measuring Balance?**

Balance and Falls SIG Roundtable

Moderators: Linda Csiza, PT, DSc, NCS; Mary Hudson-McKinney, PT, MS, DPT, NCS

Location: Hilton Indigo 202 AB

Our assumptions concerning balance [how balance is controlled] shape how we assess and treat balance disorders' The NIH and the Neurology Section have called for the development of an Outcomes toolbox in preparation of Pay for Performance (P4P) initiatives. Through group discussion, the Balance and Falls SIG wants your input regarding tools that you currently use to assess fall risk in various populations. Is this assessment different than assessing Balance? The group will discuss this tools and examines the current evidence for the tools used. We then will categorize this working list within the framework (2) for different clinical practice settings and different patient populations. Upon completion of this course, you'll be able to: 1) Develop and share their working definition of 'fall risk' and any evidence in support of that definition. 2) Identify and define the different components of fall risk (factors?) based on contemporary research and clinical practice. 3) Develop a first-draft consensus agreement on these components as groundwork for the development of a formal consensus definition. 4) List and share the fall risk screening tools they currently use in practice. (Advanced) .175 CEU

- **Prediction and Management of Postconcussive syndrome
Brain Injury SIG Roundtable**

Moderators: Michelle Peterson, DPT, NCS

Location: Hilton Indigo 202 AB

Postconcussive symptoms has been a recent focus of the media in the professional sports and military arenas. This round table presentation will be an open discussion reviewing best clinical practice and current evidence available in the management of postconcussive syndrome. Upon completion of this course, you'll be able to: 1) Become knowledgeable about national trends of treatment for postconcussive syndrome 2) Create a networking system to discuss case difficulties 3) Understand the predictors of postconcussive syndrome. (Intermediate) .175 CEU

- **Community-Based Health Promotion Exercise Programs for Individuals with Neurodegenerative Diseases
Degenerative Diseases SIG Roundtable**

Moderators: Anne Kloos, PT, NCS, PhD; Deb Kegelmeyer, DPT, MS, GCS

Location: Hilton Indigo 204 AB

Neurodegenerative disorders such as Parkinson's disease (PD) and multiple sclerosis (MS) result in motor deficits which by their very nature result in lower levels of physical activity, fatigue, impaired mobility, and a high incidence of falls. These impairments result in lower quality of life and limited community participation compared to age-matched, able-bodied peers. Inadequate physical activity increases the risk of serious secondary conditions such as heart disease, stroke, diabetes, osteoporosis and cancer. Given the prevalence of physical inactivity and the serious risk factors associated with it, there is a need for effective preventative health and cardiovascular community-based exercise programs for individuals with neurodegenerative disorders. Participants in this roundtable will discuss how to design, implement, and maintain community-based exercise programs that effectively promote health and increase quality of life for individuals with neurodegenerative diseases. Upon completion of this course, you'll be able to: 1) Describe the components of successful community-based exercise programs for individuals with disabilities based on literature. 2) Describe personal, societal and environmental barriers that limit participation by the disabled in community exercise facilities and how to overcome these barriers. 3) Discuss the advantages and disadvantages of community-based group exercise classes versus individualized programs for health promotion in people with neurodegenerative diseases. 4) Discuss how to initiate, implement, and maintain effective community-based exercise programs for individuals with neurodegenerative diseases. (Intermediate) .275 CEU

- **Rehabilitation of Patients with SCI: An International Perspective
Spinal Cord Injury SIG Roundtable**

Moderators: Joy A. Bruce, MSPT, ABD, NCS

Location: Hilton Indigo 202 AB

This roundtable's discussion will focus on the practice of physical therapy across the world. Information solicited from an international listserv will be presented as a basis for the discussion. Upon completion of this course, you'll be able to: 1) Enhance American PT's exposure to the differing social, political, and cultural issues that influence the care of patients with SCI around the world. (Basic) .175 CEU

- **Assessing gait speed in all types of settings**

- **Stroke SIG roundtable**

Moderators: Susan Ryerson, PT, DSc; Kay Wing, PT DPT NCS GCS

Location: Hilton Indigo 204 AB

Gait speed is an important objective measure of progress. How can we ensure that therapists perform this evaluation regardless of type of setting they work. Upon completion of this course, you'll be able to: 1) Identify how to measure gait speed in 3 different treatment settings. (Multiple Level) .175 CEU

- **Developing an Ideal Dizziness and Balance Program**

- **Vestibular SIG roundtable**

Moderators: Sapan Palkhiwala, PT, DPT; Colin Grove PT, MS, NCS; Janene Holmberg, PT, NCS; Janet Callahan, PT, MS, NCS; Kenda S. Fuller, B.S. PT, N.C.S.

Location: Hilton Indigo 206

Participants will interact with colleagues to discuss the components of ideal programs for treating persons with dizziness and balance programs. Experts from successful dizziness and balance programs in a variety of care settings will share their experiences and guide the group discussion. Topics including interdisciplinary collaboration, equipment needs, marketing, and financial considerations will be addressed. Upon completion of this course, you'll be able to: 1) Describe a variety of perspectives about critical components of the ideal dizziness and balance center. (Intermediate) .175 CEU

1:00PM to 2:45PM

New Technologies in Stroke Research: What are the immediate clinical applications?

Speakers: Julius P. Dewald, PT, PhD; Michael D. Ellis, PT, DPT; David Brown, PT, PhD; Joseph Hidler, PhD

Location: Convention Center Room 28 CD

The session will explore new technologies utilized in stroke rehabilitation research. Advanced laboratory-based technologies such as robotics, brain imaging and brain computer interface will be discussed along with 'Monday morning strategies' for practical application in the clinician's current clinical setting. A lecture/discussion format will include clinical scientists with research endeavors in both the basic and applied clinical sciences. Content will include a) scientific underpinnings of impairments and activity limitations and the manner in which technology has assisted in the discovery of new knowledge; b) development of novel therapeutic interventions in the context of new scientific knowledge and the manner in which new technologies can augment current processes of evaluation and intervention. The content will emphasize the importance of integrating recent discoveries with current patient management

Upon completion of this course, you'll be able to: 1) Discuss the scientific underpinnings of upper and lower extremity discoordination in patients with stroke and how new technologies have given rise to recent discoveries. 2) Identify recent advances in the measurement of upper and lower extremity impairments and activity limitations by new technologies and the immediate practical clinical applications. 3) Identify recent advancements in therapeutic interventions for upper and lower extremity by new technologies and the immediate practical clinical applications. 4) Discuss advantages of utilizing movement and rehabilitation science principles, recently supported by new technologies, to augment clinical evaluation and treatment of individuals with stroke. (Intermediate) .175 CEU

1:00PM to 2:30PM

A Model to Facilitate Student Clinical Decision-Making for the Patient/Client With a Neuromuscular Condition

Speakers: Cheryl B Footer, PT, PhD; Marcia B Smith, PT, PhD; Patricia A Winkler, PT, DSc, NCS

Joint Programming Sponsored by: Education; Co-Sponsored by: Neurology

Effective clinical decision-making is critical to the success of a physical therapist, but teaching clinical decision-making, especially for complex diagnoses, is difficult. This session describes a model for facilitating clinical decision making and critical thinking with students enrolled in a professional curriculum. The model is designed to link foundational sciences with a method for teaching a consistent thought process in the management of the patient/client with a neuromuscular condition. The conceptual model integrates The Guide to Physical Therapist Practice (Guide), the World Health Organization's International Classification of Functioning, Disability and Health (ICF), and the Hypothesis-Oriented Algorithm for Clinicians (HOAC) to form a framework that encourages students to organize clinical problems into workable solutions. The Guide ensures that students address the five elements of patient/client management, while the ICF enablement model assists faculty to teach students to systematically build associations between body structure/function, activity, and participation. HOAC provides an algorithm for clinical decision-making in which task analysis, as reflected by patient/client identified problems, drives diagnostic hypotheses leading to tests and measures. Application of the model promotes use of evidence, as well as reinforces motor control and motor learning principles for interventions. All three are integrated in a manner that provides systematic guidance for effective clinical decision making. The process to develop clinical decision making is team taught over two consecutive semesters, and includes paper-pencil scenarios, video cases, simulated patients/clients, and volunteer patients/clients. Emphasis is on providing rationale for decisions and clinical judgments made by the student based on current best evidence. Each activity demands increasing ability to use critical thinking. Student outcomes with practical examination, student-led formal discussions before a panel of clinical experts, and written and oral justifications of decisions made will be shared.

Upon completion of this course, you'll be able to: 1) Apply the model to facilitate clinical decision making and critical thinking by having the student: a) Link task analysis to hypothesized body/structure function impairments, as they relate to activity and participation. b) Select appropriate tests and measures for each hypothesis. c) Develop a clinical diagnosis. d) Establish goals and outcomes as a component of the prognosis. e) Design interventions and plan of care based on current best evidence while applying motor learning and motor control principles. f) Consistently match clinical choices between components of the model. 2) Discuss the progression of learning clinical decision making for patient/client management utilizing paper and video scenarios, simulated patients, and volunteer patients. 3) Describe methods of assessing student outcomes related to clinical decision making and critical thinking for the patient/client with a neuromuscular disability. Course Level - Multiple Level - 0.15 CEUs

1:00PM to 4:30PM

NIH Toolbox for Assessment of Neurological and Behavioral Function: Implications for Physical Therapy Practice and Research

Speakers: Rose Marie Rine P.T., Ph.D.; Richard Gershon, PhD; Susan Whitney P.T., Ph.D, NCS, ATC, FAPTA; Michael Schubert, P.T., Ph.D. ; Susan Magasi, PhD, O.T.

Joint Programming : Research Co-Sponsored by: Neurology

The NIH Toolbox is a five year project to identify, create and validate brief comprehensive assessment tools to measure outcomes in longitudinal, epidemiological and intervention studies across the lifespan in the areas of cognition, emotion, motor and sensation. The project is one of the initiatives in the NIH Blueprint for Neuroscience Research. Many studies collect information on aspects of neural function. However, the lack of uniformity among

measures used makes comparisons between studies and combining data from multiple studies problematic. Further, many measures are omitted in large studies due in part to the lack of brief, well-validated instruments. To address these issues, NIH awarded a contract in 2006 to develop the NIH Toolbox. State of the art psychometric research and novel testing methods are being employed to develop an innovative approach to neurological and behavioral health measurement across the lifespan (3-85 years). Participants will be provided with an overview of the NIH Toolbox project, the domains and tests developed, and the application to physical therapy research and practice. Investigators, to include physical therapists involved in this project, will provide detailed information of tools developed and validated for testing vestibular and motor function across the lifespan. Upon completion of this course, you'll be able to: 1) Describe the purpose and expected outcomes of, and tools developed for use in, the NIH Toolbox project. 2) Appreciate the usefulness of tools developed in the NIH Toolbox for physical therapy research. 3) List and describe the tools developed to test vestibular function, including the reliability and validity of the measures. 4) List and describe the tools developed to test motor abilities, including the reliability and validity of the measures. (Course Level - Intermediate) - 0.35 CEUs

3:00PM to 4:30PM

**PT Implementation of SCI Clinical Practice Guidelines: A Comprehensive Review with a Focus on Upper Limb Preservation
Spinal Cord Injury SIG Meeting and Educational Session**

Speaker: Kendra Betz, MSPT, ATP

Location: Convention Center 28 CD

Clinical Practice Guidelines (CPG) for comprehensive management of the individual with Spinal Cord Injury (SCI) have been written by the Consortium for Spinal Cord Medicine and published by Paralyzed Veterans of America (www.pva.org). CPG documents provide recommendations across a broad spectrum of topics for interdisciplinary roles, responsibilities and opportunities to support the individual with SCI to achieve optimal independence, health and quality of life. The CPG for upper limb Preservation following SCI outlines specific recommendations that require PT evaluation, intervention and client education. Topics addressed include wheelchair selection and configuration, postural support, functional skills training, pain management and exercise recommendations. During this session, strategies for practical PT clinical implementation of CPG will be reviewed with case examples utilized to demonstrate key points and successful interventions. This is the Neurology Section Spinal Cord Injury SIG meeting and educational session.

Upon completion of this course, you'll be able to: 1) Reference at least five published SCI Clinical Practice Guidelines that include PT specific recommendations. 2) Describe how to appropriately incorporate published SCI Clinical Practice Guidelines into evidence-based PT clinical applications. 3) Discuss five specific recommendations for upper limb preservation following SCI that require PT client evaluation, treatment and education. (Basic) .15 CEU

3:00PM to 4:30PM

**Measuring and Improving Cardiovascular Health in People Post Stroke
Stroke SIG Meeting and Educational Session**

Sandra A. Billinger, PT, PhD

Location: Convention Center 29 ABC

This presentation will discuss the current state of cardiovascular health and fitness following stroke. The lecture begins with a review of the central and peripheral cardiovascular adaptations associated with cardiorespiratory fitness after stroke and evidence for methods of exercise training. The lecture ends with a discussion of the potential limitations of assessing cardiorespiratory fitness and the interpretation of exercise testing in this unique population. This is the Neurology Section Stroke SIG meeting and educational session. Upon completion of

this course, you'll be able to: 1) Discuss one central and peripheral cardiovascular adaptation in people post stroke. 2) State the findings of one research study that investigates methods of cardiovascular exercise training post stroke. 3) Create one cardiovascular exercise routine for people post stroke. (Multiple Level) .15 CEU

5:00PM to 6:30PM

Eugene Michels Research Forum: Neuroimaging: The Story Behind the Blob

Moderator: Judith E. Deutsch,PT,PhD

Speakers: Scott Grafton, MD and Scott Frey, PhD

Research Section Programming