BROOKS Rehabilitation
INSTITUTE OF HIGHER LEARNING

Brooks Institute of Higher Learning Neurologic Residency Program
Curriculum: Physical Therapy

Foundational Courses *(all residency programs)*	**84 CH**
Orientation & Introduction to Residency	8 CH
Scholarly Integration I (live), II, III (Virtual)	9 CH
Clinical Reasoning	4 CH
Clinical Research/Case Reports	4 CH
IHL Pillar Discussions	12 CH
Cardiopulmonary	3 CH
Pain Science	4 CH
Motion Analysis Center	3 CH
Patient-Centered Communication	2 CH
Motor Control Collaboration	8 CH
Brooks IHL Scholarly Symposium	8 CH
Implementation Science & Quality Improvement	3 CH
APTA Clinical Instructor Credentialing Course	16 CH
Clinical Management for the Advanced Practitioner	**37 CH**
Therapeutic Exercise Dosing for Neuromusculoskeletal Conditions	16 CH
Clinical Integration of Gait Analysis	8 CH
Integrating the Cardiopulmonary System into Physical Therapy Practice OR Management of the Medically Complex Patient (these alternate annually)	13 CH
Core Neurologic Content	**246CH**
Continuing Education Format (114)	
Advanced Management of the Neurologic Shoulder	12 CH
Tone and Spasticity in Children and Adults with Neurologic Impairments	8 CH
Advanced Clinical Practice of the Stroke Patient	16 CH
Comprehensive Stroke Rehabilitation: Using Evidence to Guide Your Practice	16 CH
Comprehensive Management Strategies for the Patient Post SCI	16 CH
Functional Application of EBP in Individuals Following Brain Injury	16 CH
Vestibular Rehabilitation I: Foundations and Contemporary Practice	18 CH
Vision Rehabilitation: Understanding and Managing Visual Impairment Across the Continuum of Care	12 CH
Brooks PTNR Courses (132)	
Neurologic Residency Orientation	4 CH
<u>Neurologic Foundations</u>	18 CH

Neurologic Exam
Neurologic Treatment Concepts and Plasticity
Outpatient Neurologic Practice Management
Skilled Nursing Practice Management
Gait Analysis and Orthotics
Consultative Practice

Diagnosis-Specific Content	44 CH
Stroke Rehabilitation and Stroke BLAST	
Spinal Cord Injury (BLAST) and Wheelchair Skills Lab	
Vestibular Rehabilitation/Atypical Vestibular Disorders	
Parkinson's Disease Lecture and Lab	
Degenerative Diseases	
Hereditary Neurodegenerative Conditions	
Peripheral Nervous System Pathologies	
Special Topics in Neuro Rehab	50 CH
ASIA Exam	
Disorders of Consciousness	
Adults with Developmental Disabilities	
Falls Screens, Assessments, Interventions	
Locomotor Training	
Communication and Cognition	
Exercise Prescription for the Older Adult	
Pelvic Health Considerations for Neurologic Populations	
Management in the Acute Care Setting (Virtual Asynchronous) (16)	
Interpretation of Lab Values in Acute Care Rehabilitation	1 CH
Mechanical Ventilation and Tracheostomy in Acute Care	1 CH
Acute Care for Management of Stroke	1.5 CH
Dysfunctional Breathing Part 1: Background Information and Assessments	2 CH
Dysfunctional Breathing Part 2: Intervention Strategies	2 CH
Treatment for Atypical Breathing: Segmental Breathing Facilitation	1.5 CH
Treatment for Atypical Breathing: Positioning and Mobilization	1.5 CH
Early Mobility Best Practices: Evidence and Barriers	1.5 CH
Early Mobility Best Practices: Assessment and Activity Considerations	2 CH
Early Mobility Best Practices: Case Studies	1.5 CH
Total Didactic Credit Hours	**367 CH**
Scholarly Hours	**100 SH**
Written Case Studies (2)	40 SH
Case Study Presentations (2)	10 SH
Attend Journal Clubs, Present 1 article	20 SH
Guest Lectures in DPT Curriculum (2)	16 SH
Scholarly Symposium Presentation	5 SH
Submit Abstract to National Conference	5 SH
Reflection Assignment	4 SH
Observation Hours	**100 (84) OH**
Peer Residents (each rotation switch) (Jax/Daytona)	48/8 OH
Acute Care Observation	24 OH
Parkinson's Disease Specialty Clinic	8 OH
Other Observation (SCI/BI Day Treatment, Balance Center, MD, etc.) (Jax/Daytona)	20 (44) OH
Patient Care Hours, inclusive of the following:	
Direct 1:1 Mentoring or Clinical Practice	150
Serve as Clinical Instructor for a DPT Student	320

Total Residency Program Hours (Jax/Daytona): 567/551 Hrs

BROOKS Rehabilitation
INSTITUTE OF HIGHER LEARNING

Brooks Residency & Fellowship Foundations Course Overview:

This course will present concepts related to several components of practice for residents and fellows that are applicable across areas of specialization. The classes in this course will be attended by the Physical Therapy Residents and Occupational Therapy Fellows in an academic cohort including several specialties (Neurology, Pediatrics, Orthopaedics, Sports, Women's Health, Geriatrics). Residents/Fellows will learn: knowledge and skills germane to effective, self-monitored clinical reasoning in the context of multidisciplinary clinical practice; the principles of clinical inquiry, specifically related to the development of clinically related questions and the process of answering the developed questions; the knowledge and skills to develop written and oral case presentations; concepts related to pain science, including the identification and assessment of pain; the value of incorporating vital signs into patient management across settings and specialties; knowledge and skills to promote positive patient centered communication; concepts and skills for the development of quality improvement and implementation science projects; motor control concepts across varying clinical paradigms; skills to improve one's ability to teach, instruct, and guide the development of a professional student; a deeper understanding of the Brooks IHL Pillars (Advanced Clinical Competence, Professionalism, Practice Management, Scholarship, Education) including application to their professional practice; knowledge and skills from classmates/specialties that will enhance their ability to communicate with and care for their patients.

Course Objectives:

Clinical Reasoning

1. Understand and define clinical reasoning
2. Describe clinical reasoning theories
3. Recognize types of bias within clinical reasoning
4. Learn skills to apply and improve your clinical reasoning

Scholarly Integration I, II, III

1. Demonstrate ability to develop a clinically meaningful question
2. Demonstrate ability to efficiently answer clinical questions
3. Differentiate study critical appraisal process by type of publication
4. Interpret common statistical terms used for reporting within publication types
5. Apply critical appraisal process to disseminate study findings and inform your clinical practice

Case Reports & Presentations

1. Understand the advantages of contributing case reports to the professions body of knowledge
2. Describe the limitations of case reports within the hierarchy of evidence
3. Develop an understanding of the steps involved with writing a case report or oral case presentation

BROOKS Rehabilitation
INSTITUTE OF HIGHER LEARNING

Pain & Rehabilitation

1. Recognize value of pain assessment across clinical disciplines and settings
2. Distinguish different types of pain
3. Describe different pain theories
4. Describe variability in pain perception
5. Distinguish between different clinical assessment methods.

Cardiopulmonary Rehabilitation Considerations*

1. Define vital signs
2. Identify value of assessing vital signs in clinical practice across settings and populations
3. Describe normal vs abnormal cardiovascular responses to exercise across the lifespan
4. Review functional implications of common cardiopulmonary conditions and its influence on a patients response to exercise
5. Determine health conditions; signs and symptoms that would be appropriate to obtain consultation with vs refer to a cardiopulmonary clinical specialist; other health care provider (across the spectrum of patients, athletes to peds etc.)
6. Recognize acute injuries and illnesses that require immediate medical intervention

Patient-Centered Communication

1. Define elements of patient centered communication
2. Understand value of incorporating PROs into patient centered care
3. Define and apply shared decision making
4. Understand how non-specific effects an impact a patient's outcome and satisfaction

Implementation Science & Quality Improvement

1. Identify convergent and divergent themes
2. Identify common methods and strategies
3. Develop mock group projects related to area of clinical interest

Motor Control Collaboration

1. Gain a comprehensive and high-level knowledge and appreciation of motor control concepts
2. Understand how such concepts are implemented from differing clinical paradigms or perspectives
3. Discuss and understand how perspectives and frameworks might differ in varying clinical situations

BROOKS Rehabilitation
INSTITUTE OF HIGHER LEARNING

APTA Credentialed Clinical Instructor Program/AOTA Fieldwork Educator Workshop

APTA:

1. Plan and prepare for physical therapy students during their clinical education experience.
2. Support continuing education through questioning and effective feedback.
3. Acquire performance evaluation skills.
4. Identify and manage students with exceptional situations.
5. Recognize legal implications for clinical educators, including issues presented by the Americans with Disabilities Act.

AOTA:

1. Deeper understanding of your role as a fieldwork educator
2. Effective strategies to integrate learning theories and supervision models
3. Increased skills to provide high-quality educational opportunities during fieldwork experiences
4. Interaction with trainers through dialogue and reflections about fieldwork
5. Engagement in 4 curricular modules: administration, education, supervision, and evaluation
6. Analysis of strategies to support best practice in fieldwork education

Brooks IHL Pillar Discussions

1. Describe the Residency/Fellowship graduate expected outcomes related to each pillar
2. Apply concepts from each pillar to clinical and professional scenarios
3. Understand perspectives and paradigms of colleagues from other specialties, settings, and professions

Instructors:

Jason Beneciuk PT, DPT, PhD, MPH
Michael Braun MSOT, OTR/L, BCPR
Stephanie Bush PT, DPT, Med, WCS
Sara Cristello PT, DPT, OCS, FAAOMPT
Trent Harrison PT, DPT, OCS, FAAOMPT
Devin Jourde PT, DPT, SCS, CSCS
Jessica Magee PT, DPT, WCS
Raine Osborne PT, DPT, EdD
Bob Rowe PT, tDPT, MHS, DMT
Caroline Scott PT, DPT, PCS, CSCS
Ryan Vickers PT, DPT, OCS, FAAOMPT
Geoff Willard PT, DPT, NCS, CSRS
Current PT Residency and OT Fellowship cohorts

Brooks Neurologic PT Residency: Management for the Advanced Practitioner
Course Description:
This course includes several continuing education courses taught by clinical experts. Each course addresses special topics that cross all specialty areas and can be related to neurologic conditions that would be addressed by a neurologic specialist. Residents will learn advanced assessment and evaluation skills in a variety of special topic areas, along with intervention and patient management strategies.

Therapeutic Exercise Dosing for Neuromusculoskeletal Patients Course Instructor
Robert Rowe, PT, DPT, DMT, MHS, FAAOMPT
Objectives

1. Define anatomy, biomechanical, motor control, and neuroplasticity nomenclature as it relates to exercise dosing.
2. Describe the composition, mechanism of injury, and optimal stimulus for regeneration for the various connective tissues.
3. List, describe, discuss, and perform the optimal dosed stimuli for rehabilitation of patients with primarily neuromusculoskeletal impairments
4. Prescribe a specific dose of exercise based on the neuromusculoskeletal impairment and the goals of the treatment.
5. To design specific exercise progressions by performing exercises/activities related to revascularization/regeneration, motor control, endurance, speed, strength, and function to promote a strong foundation, capacity and improved performance.

Clinical Integration of Gait Analysis

Course Instructor
Mary Mohay, PT, DPT, NCS
Sara Brennan, PT, DPT, OCS, FAAOMPT
Objectives

1. Discuss a biopsychosocial framework for clinical gait analysis including:
    a. Definitions
    b. Integration of the ICF Model
    c. Assessment
    d. Nomenclature
2. Identify and apply outcome measures related to clinical gait analysis including selection, administration and interpretation.
3. Identify the parameters of normal gait.
4. Identify pathologic mechanisms of gait.
5. Identify common gait deviations such as:
    a. Those at the ankle, foot, knee, hip, pelvis, and trunk.
    b. Those common to adult neurologic dysfunction

Integrating the Cardiopulmonary System into Physical Therapy Practice*

Course Instructor

Jamie Dyson, PT, DPT

Objectives

1. Describe incidence, prevalence, and characteristics of individuals who suffer from stroke
2. Discuss the cardiovascular Systems role in human movement
3. Discuss the Pulmonary System's role in Human movement
4. Describe cardiopulmonary anatomy
5. Discuss cardiopulmonary pathophysiology
6. Interpret results of pulmonary function tests, arterial blood gases and chest x-ray.
7. Describe modes of mechanical ventilation and invasive monitoring
8. Perform Basic interpretation of EKG
9. Describe the phases of cardiac rehab and energy conservation
10. Integrate cardiovascular/pulmonary pharmacology into Plan of care

OR (these two courses alternate annually)

Making Rehabilitation Clinical Decisions with the Medically Complex Patient*

Course Instructor

Jamie Dyson, PT, DPT

Objectives

1. Describe incidence, prevalence, and characteristics of individuals who suffer from stroke
2. Describe the inter-professional relationships in the typical intensive care unit.
3. Describe the medical equipment encountered in the acute care setting.
4. Describe the common pathologies and pathophysiology of the cardiovascular, respiratory musculoskeletal, neuromuscular, integumentary, gastrointestinal, genitourinary and endocrine systems and their effect on the movement system.
5. Demonstrate understanding of EKG interpretation.
6. Perform active, active assistive and passive forms or airway clearance.
7. Perform system specific examination integrating diagnosis, lab results and radiological results into evaluation, plan of care and progression through the continuum of care.
8. Incorporate the system specific surgical and medical procedure into the plan of care know their effect on movement.
9. Describe evidence based interventions specific to the system begin discusses and integrate interventions with those for other systems of the body

Brooks Neurologic PT Residency: Core Neurologic Content
Continuing Education Format
Course Description:
This course content includes several continuing education courses taught by clinical experts. Each course addresses relevant topics that span practice management of individuals with neurologic conditions and areas that would be addressed by a neurologic specialist. Residents will learn advanced assessment and evaluation skills in a variety of topic areas, along with intervention and patient management strategies.

Advanced Management of the Neurologic Shoulder

Course Instructor

Michael Braun, MSOT, OTR/L, BCPR
Ryan Vickers, PT, DPT, OCS, FAAOMPT
Neal Covas, PT, DPT, NCS
Objectives

1. Demonstrate and describe the requirements for optimal shoulder girdle alignment, stability and mobility.
2. Identify the number of fully innervated muscles of the shoulder girdle for each cervical level and its impact on shoulder girdle alignment, stability and mobility.
3. Demonstrate the components of examination and evaluation of the shoulder girdle for mobility, alignment and stability.
4. Demonstrate and describe treatment interventions for preparing the neurologic shoulder for function.
5. Demonstrate assessment techniques for physical capability with function through activity analysis, and treatment progression.

Therapeutic Management of Tone and Spasticity in Children and Adults with Neurologic Impairments*

Course Instructor

Caroline Scott, PT, DPT, PCS, CSCS
Objectives

1. Describe the difference between tone and spasticity
2. Describe evidence for medical, surgical, and therapeutic interventions for tone and spasticity
3. Discuss appropriate ways to measure tone and spasticity
4. Compare outcomes of interventions related to function
5. Apply serial casting application to upper and lower extremities
6. Demonstrate knowledge of appropriate patient and after care for casting application

Advanced Clinical Practice of the Stroke Patient: Gait and Movement Analysis for Targeted Treatment and Maximal Recovery after Stroke

Course Instructor

Walt Weiss, PT, MPT, NCS, KEMG

Objectives

1. Perform a detailed observational gait analysis for persons with neurologic deficits
2. Classify individuals with stroke into one of 4 cluster-analysis groupings
3. Prioritize gait deviations and problems for targeted treatment of movement dysfunction
4. Utilize the Rancho ROADMAP to assist decision-making for orthotic intervention after stroke
5. Identify evidence-based treatment interventions for individuals with hemiparesis from stroke

Comprehensive Stroke Rehabilitation: Using Evidence to Guide Your Practice*

Course Instructor

Amy Jo Rohe, MSOT, OTR/L, CBIS, CSRS
Geoff Willard, PT, DPT, NCS, CSRS

Objectives

1. Describe incidence, prevalence, and characteristics of individuals who suffer from stroke
2. Apply understanding of neuroanatomy to functional exam and treatment planning
3. Integrate task analysis into functional examination and treatment planning
4. Develop appropriate evidence-based treatment utilizing the principles of neuroplasticity through case-based learning
5. Collaborate with other healthcare professionals to develop comprehensive patient care plan
6. Discuss secondary risks for stroke survivors and professional role in intervention

Comprehensive Management Strategies for the Patient Post Spinal Cord Injury*

Course Instructor

Julie Braun, PT, DPT, NCS
Michael Braun, MSOT, OTR/L, BCPR
Kate Cavka, PT, DPT, NCS

Objectives

1. Demonstrate a thorough understanding of expected functional outcomes for each level of spinal cord injury and develop a comprehensive, interdisciplinary plan of care.
2. Educate patients in preventative care topics such as skin care and wound prevention, functional ROM and positioning, preservation of shoulder and hand function, as well as autonomic dysreflexia, heterotopic ossification, and other preventable sequelae.
3. Describe therapy's role in bowel and bladder management for the person with a SCI.
4. Gain increased confidence in mat work when developing preliminary skills training sessions for individuals with SCI.
5. Identify appropriate intervention progression and goals aiming for early recovery in acute care with the end goal of return to community and enhanced quality of life.

Functional Application of Evidence-Based Practice in Individuals Following Brain Injury*

Course Instructor

Alyssa Findlay, PT, DPT, NCS
Ryan Patterson, MOT, OTR/L, BCPR

Objectives

1. Identify neuroanatomical pathology related to clinical presentation
2. Identify primary and secondary effects of brain injury
3. Discuss commonly used medical, pharmacological and rehabilitative techniques used in brain injury management
4. Discuss complications following brain injury and the goals of rehabilitation in minimizing and/or managing these
5. Recognize the importance of family involvement in rehabilitation and how to direct their role
6. Explain presentation and treatment strategies of all levels of brain injury using the Ranchos Los Amigos scale
7. Develop treatment plan inclusive of outcome measures and behavior shaping strategies for individuals following brain injury
8. Evaluate patients following brain injury for appropriate comprehensive treatment planning

Vestibular Rehabilitation I: Foundations & Contemporary Practice*

Course Instructor

Geoff Willard, PT, DPT, NCS, CSRS

Objectives

1. Understand the anatomy and physiology of the vestibular system
2. Describe the pathophysiology of common vestibular disorders
3. List the most common diagnoses/causes of vestibular dysfunction
4. Recognize the clinical presentation of the most common causes of vestibular dysfunction including
    a. History/Subjective Complaints
    b. Objective Tests and Measures
5. Correctly perform common vestibular/balance objective measures including
    a. Dix Hallpike and Roll Test
    b. Oculomotor Exam
    c. Head Thrust Test
    d. Dynamic Visual Acuity
    e. Functional Gait Assessment
6. Identify peripheral, central and non-vestibular causes of dizziness
7. Understand the compensation process following a vestibular disorder
8. Prescribe appropriate rehabilitation programs to address compensation for vestibular dysfunction including HEP's, patient education and ways to progress treatment
9. Accurately assess and perform appropriate canalith repositioning maneuvers for the various forms of BPPV
10. Identify red flags and when to refer for further diagnostic testing

Vision Rehabilitation: Understanding and Managing Visual Impairment Across the Continuum of Care

Course Instructors:
Sarah LaRosa, OTD, MOT, OTR/L, SCLV, CLVT
Katelyn W. Jordan, O.D., FAAO

Objectives

1. To understand optometric/ophthalmologic documentation
2. To understand prescribed optometric interventions for vision loss and neurological visual changes
    a. Prisms
    b. Lenses
    c. Low vision devices
3. To understand sighted guide technique and how it may be utilized to improve mobility and therapeutic outcomes in individuals with neurologic conditions
4. Practice sighted guide technique to be able to implement it in practice

Brooks Neurologic PT Residency: Core Neurologic Content

Brooks PTNR Courses

Neurologic Foundations

Course Description:

This course will present concepts related to advanced Neurologic Physical Therapist (NPT) practice with emphasis on patient examination, neuroanatomy, physiology, interventions utilized by the advanced NPT, motor control and learning, outcome measure selection, practice management and utilization of technology.

Course Faculty:

Geoff Willard, PT, DPT, NCS, CSRS

Neurologic Exam*

Objectives

1. Discuss the conceptual framework behind the neurological exam and compare/contrast to other PT examination processes
2. Identify differences between screening and examination procedures for investigating neurologic function
3. Discuss movement analysis and its role in the neuro exam and practice task analysis using patient cases/videos
4. Practice and/or discuss testing procedures of the following:
    a. Cranial nerves
    b. Sensation
    c. Tone/reflexes/spasticity
    d. Motor control
    e. Cognition
    f. Balance/equilibrium
    g. Outcome Measures
5. Understand implications of examination findings and procedure of how to perform the appropriate action in response

Neurologic Treatment Concepts and Plasticity*

Objectives

1. Discuss concepts of recovery and compensation, as well as how they fit into neurologic PT practice
2. Discuss the ten principles of neuroplasticity and integration strategies to utilize in practice
3. Discuss motor learning theory and skill acquisition based on stages of learning, as well as strategies to increase motor learning potential

Outpatient Neurologic Practice Management

Objectives

1. Discuss role and emphasis of the neurologic PT in multiple settings, as compared to OP
2. Discuss discharge planning based on setting
3. Identify community resources and long-term thinking
4. Role-play through case scenarios to develop clinical reasoning through potential encounters

Skilled Nursing Practice Management

Objectives

1. Discuss role and emphasis of the neurologic PT in multiple settings, as compared to SNF
2. Discuss discharge planning based on setting
3. Identify community resources and long-term thinking
4. Role-play through case scenarios to develop clinical reasoning through potential encounters

Gait Analysis and Orthotics

Objectives

1. Review anatomical and biomechanical characteristics of normal gait, as it relates to kinetics/kinematics, critical events, spatiotemporal factors, etc.
2. Discuss pathologic gait abnormalities and possible causes
3. Practice video gait analysis using Rancho Los Amigos terminology and processes
4. Discuss orthotics and indications on when to utilize, types of orthotics, etc. based on agreed-upon goals built by the patient and therapist
5. Allow psychomotor skills development in applying equipment (ex: bands, ACE wrap, etc.) to assist in safe patient handling and efficiency during locomotor training

Consultative Practice*

Objectives

1. Discuss multi-disciplinary collaboration and the importance of considering all body systems in your patient management
2. Discuss potential opportunities for collaboration with other healthcare providers and structuring plans of care around this to allow for comprehensive patient management
3. Understand differences between needs to refer, treat and refer, or treat only in PT practice
4. Utilize patient scenarios to facilitate discussion of the necessary requirements of comprehensive PT management

Diagnosis-Specific Content

Course Description:

This course will present concepts related to advanced Neurologic Physical Therapist (NPT) practice with emphasis on evaluation and treatment, plan of care development, special considerations, outcome measure selection and management guidelines with specific neurological diagnoses.

Course Faculty:

Geoff Willard, PT, DPT, NCS, CSRS
Julie Braun, PT, DPT, NCS
Kate Cavka, PT, DPT, NCS
Walt Weiss, PT, MPT, NCS, KEMG
Melanie Lomaglio, PT, NCS

Stroke Rehabilitation and Stroke BLAST

Objectives

1. Discuss common pathological exam findings in stroke rehabilitation, including neglect, lateropulsion and other perceptual disorders
2. Review literature and definitions of different types of neglect
3. Define lateropulsion and pushing behavior, common findings, clinical presentation, and possible management strategies
4. Discuss outcome measures related to lateropulsion and neglect and psychometric properties, as well as indications on when to utilize in clinical practice
5. Discuss patient cases and clinical scenarios post-stroke and promote clinical reasoning
6. Provide additional opportunities for gait analysis using real patient cases, either live or video, and discuss/practice intervention techniques to promote recovery

Spinal Cord Injury (BLAST) and Wheelchair Skills Lab

Objectives

1. Following CEU instruction of SCI course, provide additional practice opportunities for utilization of function mobility techniques with individuals following SCI
2. Understand types of wheelchairs, including power and manual options, as well as indications for use and considerations when prescribing
3. Discuss proper wheelchair fitting and push stroke mechanics to maximize efficiency and decrease risk of injury
4. Practice psychomotor techniques related to locomotor training and effective patient handling following an SCI
5. Practice psychomotor skills related to maneuvering a power wheelchair, considering types, controls, etc.
6. Practice psychomotor skills related to maneuvering a manual wheelchair over various terrain, as well as performance of wheelies, navigating up/down ramps, curbs, and through various doorways.
7. Practice psychomotor skills of types of floor to wheelchair transfers, as well as be capable of instructing others

Vestibular Rehabilitation/Atypical Vestibular Disorders*

Objectives

1. Correctly perform common vestibular/balance objective measures including
    a. Dix Hallpike and Roll Test
    b. Oculomotor Exam
    c. Head Thrust Test
    d. Dynamic Visual Acuity
    e. Functional Gait Assessment
2. Identify peripheral, central and non-vestibular causes of dizziness
3. Provide additional opportunities to practice psychomotor techniques related to performance of repositioning maneuvers and modify them as indicated to improve efficacy with individual patient needs (limited ROM, decreased mobility, etc.)
4. Identify nystagmus patterns in common and atypical presentations, including, but not limited to:
    a. Benign Paroxysmal Positional Vertigo (single or multiple canal involvement, atypical presentations, etc.)
    b. Central and peripheral vestibular pathology
    c. Co-morbid vestibular and non-otogenic pathologies
5. Utilize video and written cases to promote clinical reasoning and diagnostic processes to better inform treatment selection

Parkinson's Disease

Objectives

1. Discuss neuroanatomy and pathophysiology as it relates to Idiopathic Parkinson's Disease
2. Discuss clinical features and signs/symptoms of Idiopathic Parkinson's Disease, as well as subtypes, diagnostic processes, potential etiologies, medical management, etc.
3. Discuss psychosocial implications of neurodegenerative conditions and resources
4. Differentiate treatment approaches and strategies, and how they interact with practice guidelines
5. Review the literature regarding recommended interventions and management strategies, and how this can be integrated into a patient-centered plan of care.
6. Utilize evidence-based clinical outcome measures to chart improvement in impairments in body structure and function, activity limitations and participation restrictions for individuals with idiopathic Parkinson disease.
7. Apply intervention techniques including motor learning concepts, aerobic exercise, resistance exercise and fall prevention exercise to individuals with idiopathic Parkinson disease.

Degenerative Diseases

Objectives

1. Discuss types of degenerative conditions, such as Amyotrophic Lateral Sclerosis, Progressive Supranuclear Palsy, Multiple Systems Atrophy, and Multiple Sclerosis, as well as clinical presentations, features, diagnostic processes, outcome measurement, etc.
2. Discuss psychosocial implications of neurodegenerative conditions and resources
3. Differentiate treatment approaches with those of managing non-degenerative conditions.
4. Review the literature regarding recommended interventions and management strategies, and how this can be integrated into a patient-centered plan of care.

Hereditary Neurodegenerative Conditions

Objectives

1. Discuss types of hereditary neurodegenerative conditions, such as Spinocerebellar Ataxia and Huntington's Disease, and clinical presentation, subtypes, diagnostic processes, etc.
2. Discuss psychosocial implications of neurodegenerative conditions and resources
3. Differentiate treatment approaches with those of managing non-degenerative conditions.
4. Review the literature regarding recommended interventions and management strategies, and how this can be integrated into a patient-centered plan of care.

Peripheral Nervous System Pathologies

Objectives

1. Differentiate the clinical signs associated with central nervous system versus peripheral nervous system pathology
2. Discuss treatment strategies with individuals with peripheral nervous system pathology and how they may be impacted or complicated by various etiologies or co-morbidities
3. Utilizing case-based scenarios, facilitate discussion and problem-solving through differential diagnosis, as well as procedures related to patient management

Resident Objectives

At the completion of this course, the resident will be able to:

- Describe the basis for the patient examination and interventions utilized for patient management.
- Perform a safe, efficient, and effective patient examination.
- Explain the rationale for various therapeutic interventions including neuromuscular re-education and facilitation techniques, bracing or orthotics prescription, locomotor training, transfers and functional mobility training, task-specific training, motor control interventions, balance interventions, and therapeutic exercise.
- Recognize signs of abnormalities in clinical findings or response to treatment, and make appropriate modifications
- Develop a specific therapeutic exercise program with progression for a given patient condition/dysfunction.

Recommended Reading:

- Neuroanatomy Through Clinical Cases (Third Edition)- Blumenfeld
- Vestibular Rehabilitation (Fourth Edition)- Herdman and Clendaniel
- Locomotor Training: Principles and Practice- Harkema and Behrman
- Motor Control and Learning: Translating Research into Clinical Practice- Shumway-Cook and Woollacott
- Guide to Physical therapist Practice (Chapters 1-2)

Teaching Methods and Learning Experiences
This course will utilize a combination of traditional lectures with various audiovisual equipment, group/class discussions, and psychomotor labs.

This material will be tested on quizzes and on the final written exam as well as on all of the practical examinations. Concepts covered in class will also be discussed and applied in mentoring sessions when able.

Special Topics in Neurologic Practice

Course Description:
This course will present concepts related to advanced Neurologic Physical Therapist (NPT) practice with emphasis on specialized knowledge of patient populations and domains of neurologic physical therapy practice.

Course Faculty:
Mary Mohay, PT, DPT, NCS
Jessica Denniston, PT, DPT, NCS, CYT
Steve Walczak, PT, DPT, PCS
Geoff Willard, PT, DPT, NCS, CSRS
Michael Braun, MSOT, OTR/L, BCPR
Kate Cavka, PT, DPT, NCS
Emily Fox, PT, PhD, NCS
Gina Brunetti, PT, DPT, NCS
Logan Taulbee, PT, DPT, GCS
Jessica Magee PT, DPT, WCS
MedBridge Virtual Platform (instructors listed below)

ASIA Exam*

Objectives

1. Identify the key sensory points of the ISNCSCI exam, common pitfalls of the sensory portion, and discuss how to avoid them.
2. Identify key myotomes tested in ISNCSCI exam and demonstrate proper testing positions for each myotome
3. Demonstrate proper scoring of ISNCSCI exam
4. Learners will demonstrate the proper testing positions for the each of the key myotomes tested in the ISNCSCI exam.
5. Learners will demonstrate proper scoring of the ISNCSCI exam for motor and sensory components.
6. Learners will be able to describe proper testing instructions and procedures, including those instructions delivered to the patient, equipment needed for testing, proper sequencing, repetitions, etc.
7. Learners will be able to describe the difference between motor and sensory complete and incomplete injuries based in ISNCSCI exam results.
8. Learner will be prepared to move forward with check-off procedures as patient volume allows.

Disorders of Consciousness*

Objectives

1. Differentiate the clinical signs associated with each level of consciousness (informed by the Coma Recovery Scale Revised)
2. Utilize most recent literature to develop a plan of care informed by neurorecovery principles
3. Implement research-supported intervention strategies across settings

Adults with Developmental Disabilities

Objectives

1. Describe Developmental Disabilities
2. Identify common diagnoses that fall under “Developmental Disabilities”
3. Identify common features among aging adults with developmental disabilities
4. Discuss common barriers and considerations for safe discharge from inpatient rehabilitation
5. Identify special care considerations for individuals with developmental disabilities

Fall Screenings and Assessments

Objectives

1. To understand prevalence and incidence of falls in community populations and how this may be impacted by certain risk factors
2. Discuss risk factors that may increase likelihood of falls, according to sensitivity, specificity, and likelihood ratios, and calculate post-test probability using available data.
3. Discuss changes to implement in clinical practice in order to reduce likelihood of future falls, based on educational and other therapeutic interventions.
4. Review clinical implications of exam findings as it relates to individual patient cases, environmental and contextual factors.
5. Discuss use of functional outcome measures to determine risk stratification and inform clinical decisions

Locomotor Training Lab

Objectives

1. Discuss different approaches to locomotor recovery, highlighting some of the mechanisms and principles associated with them
2. Review tools and critical thinking concepts regarding implementation and assessment of walking recovery interventions
3. Provide psychomotor practice with appropriate technique regarding set up, application of harness, transfer technique, locomotor training skills.
4. Provide opportunities for collaboration with other healthcare professionals within the context of improving communication while delivering locomotor training interventions.
5. Review the literature regarding recent relevant guidelines and their application into clinical practice

Communication and Cognition

Objectives

1. Discuss components necessary for normal communication and what may occur when the necessary steps are not achieved
2. Facilitate reflective practice of patient-centered communication
3. Discuss aphasia and types, as well as common features, communication strategies, and multi-disciplinary management.
4. Discuss concepts of functional cognition, skill-habit training, and strategy training, as well as implications and considerations for the neurologic PT.

Exercise Prescription for the Older Adult

Objectives

1. Recognize how exercise doing affects muscle tissue as well as other tissues in the body such as connective tissue in joints, ligaments, tendons and bones.
2. Recognize normal age-related change that could affect exercise dosing in the older adult.
3. Demonstrate the ability to dose an older adult to achieve gains in muscular strength, power, endurance, coordination, and aerobic capacity
4. Apply the appropriate outcome tools to measure these gains in older adults.
5. Recognize how to alter exercise dosing for an older adult with:
    - Pain
    - Cardiac Disease
    - Diabetes Mellitus
    - Frailty
    - Cognitive impairment
    - Osteoporosis
6. Demonstrate the ability to dose an older adult to achieve an increase in balance and decrease in fall risk.
7. Apply the appropriate outcome tools to measure these gains in older adults.
8. Apply the principles of exercise dosing for the older adult to a home exercise program designed to increase strength, endurance, coordination, aerobic capacity, or balance.

Pelvic Health Considerations for Neurologic Populations

Objectives

1. Describe normal anatomy and function of pelvic floor.
2. Describe unique considerations regarding management of bowel and bladder incontinence in neurologic populations
3. Describe examination and multi-disciplinary intervention approaches to managing pelvic floor dysfunction in individuals with neurologic conditions.

Teaching Methods and Learning Experiences

This course will utilize a combination of traditional lectures with various audiovisual equipment, group/class discussions, and psychomotor labs.

This material will be tested on quizzes and on the final written exam as well as on all of the practical examinations. Concepts covered in class will also be discussed and applied in mentoring sessions when able.

Virtual Asynchronous Courses (Via MedBridge Platform)

Interpretation of Lab Values in Acute Care Rehabilitation*

Course Instructor

Ashley Poole, PT, DPT

Objectives

1. Describe incidence, prevalence, and characteristics of individuals who suffer from stroke
2. Identify normal reference ranges for relevant lab values based on the Academy of Acute Care Physical Therapy's Laboratory Values Interpretation Resource
3. Demonstrate understanding of acute and chronic causes of abnormal lab values and their impact on a patient's plan of care
4. Predict a patient's potential clinical presentation in the context of an abnormal lab value
5. Recognize safety precautions and contraindications to mobility in the context of abnormal lab values
6. Interpret lab values given a patient case in the acute care setting

Mechanical Ventilation and Tracheostomy in Acute Care*

Course Instructor

Ashley Poole, PT, DPT

Objectives

1. Examine the indications, goals, and complications of mechanical ventilation and tracheostomy
2. Distinguish different types of artificial airways
3. Determine common modes of mechanical ventilation and the corresponding assistance each mode provides
4. Analyze patient tolerance and intolerance when weaning from mechanical ventilation or tracheostomy
5. Determine safety precautions and contraindications to mobility for patients requiring mechanical ventilation or tracheostomy

Acute Care for Management of Stroke*

Course Instructor

Karen McCain, PT, DPT, NCS

Objectives

1. Understand the basic elements of medical management as it pertains ischemic stroke
2. Understand the basic elements of medical management as it pertains to hemorrhagic stroke
3. Assess relevant studies report about early mobilization in acute stroke
4. Discover contraversive pushing in acute stroke as well as prognosis
5. Analyze evidence-based interventions for treatment of contraversive pushing in stroke

Early Mobility Best Practices: Evidence and Barriers*

Course Instructor

Ellen Hillegass, PT, EdD, CCS, FAPTA

Objectives

1. Examine the history and problems associated with performing early mobility
2. Analyze the effects of bed rest
3. Apply the information about the roles of the team to early mobility
4. Analyze the current evidence on early mobility
5. Examine the barriers to early mobility

Early Mobility Best Practices: Assessment and Activity Considerations*

Course Instructor

Ellen Hillegass, PT, EdD, CCS, FAPTA

Objectives

1. Examine the criteria for patient readiness for mobility based on chart review
2. Integrate the knowledge needed to work with patients in the ICU to initiate early mobility into competencies that should exist for the team
3. Analyze the evidence on safety and benefits of early mobility, along with evidence on mobility with invasive lines and tubes in the ICU
4. Examine the components of an initial examination of patients in the ICU

Early Mobility Best Practices: Case Studies*

Course Instructor

Ellen Hillegass, PT, EdD, CCS, FAPTA

Objectives

1. Analyze the medical record of a patient in the ICU for abnormal findings and possible indications or contraindications to mobility
2. Apply the evidence of early mobility and the principles of safety of early mobility to case studies
3. Plan initial examinations, interventions, and outcome measures for ICU case studies

Dysfunctional Breathing Part 1 & 2*

Course Instructor

Jacqueline Shakar, DPT, MS, PT, OCS, LAT, GTS

Objectives

1. Identify and observe evidence-based pain neuroscience treatment strategies that can help facilitate a return to normal breathing in patients experiencing pain
2. Formulate an efficient treatment plan that integrates these strategies when treating patients with low back and neck pain, pelvic pain, anxiety, and depression
3. Identify then observe, via instructor demonstration, manual interventions that can be utilized to improve/facilitate functional breathing patterns. Manual interventions will include selected Graston Technique® therapy techniques that can be applied to improve breathing motor control
4. Formulate an effective treatment plan that integrates manual techniques that facilitate normal breathing in patients with low back and neck pain, pelvic pain, anxiety, and depression
5. Identify then observe, via instructor demonstration, therapeutic exercise and neuromuscular retraining strategies that can be utilized to improve/facilitate functional breathing patterns
6. Formulate an effective treatment plan that integrates therapeutic exercises and neuromuscular retraining strategies that facilitate normal breathing in patients with low back and neck pain, pelvic pain, anxiety, and depression

Treatment for Atypical Breathing: Segmental Breathing Facilitation*

Course Instructor

Deanna M. Wanzek, PT, PCS, CKTI, CLT

Objectives

1. Use manual techniques to facilitate movement through various parts of the rib cage
2. Treat the infant relative to facilitation of the rib cage musculature
3. Understand the importance of incorporating movement with breathing
4. Explain the rationale for postural alignment for breathing
5. Select the proper resistance blowing equipment relative to the breathing pattern

Treatment for Atypical Breathing: Positioning & Mobilization*

Course Instructor

Deanna M. Wanzek, PT, PCS, CKTI, CLT

Objectives

1. Explain how to use voice to impact the breathing pattern
2. Integrate how to use positioning and postural alignment to improve breathing
3. Explain how to use positioning to mobilize the rib cage
4. Describe how to use manual techniques to mobilize the rib cage

Teaching Methods and Learning Experiences
These virtual courses will include a quiz portion at the end of the modules, which will require a successful completion (>70%) to mark as completed.

*Indicates that a portion or entirety of course contributes to the Acute Care Didactic Requirement based on practice settings criteria