Rehabilitation Sciences Presentations

Prosthetics & Orthotics Program  (10 - 10:50 a.m., Auerbach Auditorium)

Meshed Ventilated Socket System
Faculty: Duffy Felmlee, CPO, Matt Parente, MS, DPT, CPO, Michael Wininger, PhD
Students: Devin Bell, Karen Krasko, Carolynn McCann, Missy Reilly, Graham Rech
Description: This group was formed to validate two primary goals related to a mesh ventilated prosthetic socket, develop a protocol for gathering heat dissipation data and to confirm heat transfer through conduction or convection of the mesh panel. The socket concept was initially developed at the Shriners Hospital in Springfield, MA with positive outcomes reported by patients. Empirical data and a standardized fabrication protocol may allow this ventilation system to be an effective means of passively cooling the prosthetic socket; and assist in resolving a frequently occurring user problem.

The Hartford Hand: An Investigation of Hand Shape
Faculty: Michael Wininger, PhD
Students: Michelle Swanston, Chelsea Dornfeld, Joseph Cassella, Casey Beasley
Description: The purpose of our pilot study is to understand how perceptions and perceptions about the human hand affect the importance of hand shape in prosthetic hand design. The main focus of our work is to determine if there is a preference for hand anthropometrics in prosthetic design and whether that will affect an amputee’s willingness to utilize their prosthesis.

Innovative Problem Solving Tools for Lower Limb Prosthetic Users
Faculty: Daniel J. Lee, PT, DPT, GCS; Diana Veneri, PT, EdD, NCS; Adam Goodworth, PhD
MSPO Students: Liana Janick, Shannon Murphy, Lauren Noseworthy, Amy Saelen
Description: Clinical observation and needs assessments have determined that prosthetic users would benefit from targeted educational interventions focused at the level of interface between limb and device. With this in mind, decision trees were created to aid in problem solving prosthetic fitting issues. The decision trees were then integrated into a mobile application for smart devices for ease of use and updating. The design process and testing protocol will be explained.

Augmenting Ankle Function During Gait with a Powered Ankle Foot Orthosis
Faculty: David A. Knapp, CPO, MEd
MSPO Students: Max Nigrosh, Alex Santa, Paulina Velez-Burgos, Peter Wallerson
Description: Although many powered exoskeletal systems are coming into use clinically, none make use of the production of powered plantarflexion that is critical to normal ambulation. A prototype AFO was designed to produce normal ankle kinematics and kinetics for a patient who is unable to plantarflex actively. The AFO makes use of a computer, a tri-axial accelerometer, a pair of force-sensing resistors, a brushless DC motor, an optical encoder, and a linear spring, to store and release energy. The AFO’s performance will be compared to the standard treatment for this pathology.
Doctoral Program in Physical Therapy (11 a.m. – 12:50 p.m., Shaw Center)

**Critical Review and Demonstration of Upper Extremity Closed Kinetic Chain Assessment Techniques**

**Faculty:** John Leard EdD, PT, ATC and Dawn Roller PT, DPT  
**Students:** Faraaz Bhura, Krista Conti, Joshua McAdams, Kyle Petruzzello, Jonathan Soderquist  
**Description:** Physical therapists use tests to measure strength of individual muscles to determine baseline levels of strength as well as rehabilitative progress. These tests are typically done on individual muscles and do not examine whether groups of muscles can collectively perform a function. Recently, functional tests have been established that attempt to measure muscle groups working together, particularly in a closed kinetic chain fashion. This presentation will examine the evidence of three upper extremity closed kinetic chain functional assessments, the upper quarter Y-balance test, the Closed Kinetic Chain Upper Extremity Stability Test, and the Modified Pull-Up.

**Balance and Spinal Motion in Scoliosis**

**Faculty:** Adam Goodworth, PhD  
**Students:** Anthony Carrasquillo, Claire Crouch, Kelsey DeWitt, Jacob Lang, Ryan Partridge, Brian Wally, Sean Wooldridge  
**Description:** There is evidence that idiopathic scoliosis is associated with abnormal sensorimotor integration. To better understand this relationship, we measured trunk kinematics during perturbed sitting and standing balance tasks to 1) characterize spinal motion across a wide range of frequencies, and 2) investigate if asymmetry in sensorimotor integration is a detectable feature in patients with scoliosis compared to age-matched controls. Results may ultimately influence rehabilitation and orthotic designs.

**2 Bfit or Not 2 B: An afterschool program for children with cerebral palsy using therapeutic dosing parameters for the musculoskeletal system**

**Faculty:** Mary Gannotti, PT, PhD, George Gorton, MS, CRRP and Denise Gloeker, PT, DPT, PCS, cNDT  
**Students:** Mel Bourgeois, Jessica Lobisser, Shannon Ostroski, Agne Sierkeviciute, Stephanie Sulek  
**Description:** Power training of muscles for children with cerebral palsy (CP) can result in changes in muscle architecture and function. We review the evidence about providing the optimal dose- the type, intensity, frequency, and volume of training for children with CP. We review evidence to support the safety of power training and plyometric exercise with children with CP, and provide handouts with suggested modifications and instructions for plyometric exercises. Then, we describe the Bfit program, a twice weekly afterschool exercise program at Shriners that applies these principles. Exercise stations will be described. Benefits and challenges of program will be discussed.

**Normalization of the Segmental Assessment of Trunk Control in Typically Developing Infants**

**Faculty:** Sandra Saavedra, MS, PT, PhD  
**Students:** Kaci Brandt, Katelyn Callahan, Mariah Ferrigan, Alexis Hutchings, Jessica Zalagens  
**Description:** The Segmental Assessment of Trunk Control (SATCo) is a relatively new clinical test that can be used to document specific increments of improvement in trunk control several months prior to the onset of independent sitting. In order to recognize an infant who is not adequately developing trunk control for his or her age, we need to create benchmarks for typical development. To date, we have collected data from 55 infants, birth to 8 months of age. We will share our preliminary results for: SATCo percentiles; influence of trunk control on motor skill acquisition; parent sensitivity to infant’s level of control; environmental influences on trunk control and relation between infant’s size and proportions to development of trunk control.
why Balance?

Faculty: Paul Higgins DPT, ATC, CSCS
Students: Kevin Fiori, Kevin Reynolds, Melissa Paul, Jason Lydell, David White, Morgan Berry

Description: In an attempt to determine an effective dynamic balance screening tool, this group performed a cross comparison between the Y-Balance LE and the Star Excursion Balance Test. Phase I of this project examined the use of these two tests and minor variations to analyze several testing variables. Phase II of this project developed because of a need for an effective pre-injury screening tool for athletes. This phase will involve using the Y-Balance test and FMS testing system.

Targeted Training for Children with Cerebral Palsy

Faculty: Sandra Saavedra, MS, PT, PhD, Danielle Bellows, PT, MHS, PCS
Students: Jessica Bado, Alysha Kaminski, Judith Levin, Kasey Mayer, Molly Spargo, Maria Suhl

Description: The Targeted Training for Cerebral Palsy (CP) study focuses on a pediatric population who has been diagnosed with moderate to severe CP. Our research includes collaborative efforts amongst physical therapists, orthotists, engineers, and the children’s families. Children with more severe levels of CP lack functional control of their head and trunk, making their communication and daily living very difficult. The goal is for the children to learn active control of their trunk by using specialized devices and training protocols. In the future, our team will determine if Targeted Training will provide lasting effects and prevent functional decline as children age.

Prosthetic Training Across Borders: Year Four

Faculty: Diana Veneri, PT, EdD
Students: Robert Giuliani, Giulian Giusti, Stephanie Hanson, Lauren Schaefer, Alyssa Dickerson

Description: This multi-faceted project continues to build on the work of others. Final edits were made to the educational materials developed for clinicians and patients with lower limb amputation in developing countries. The materials are being translated to other languages in anticipation of mass production and distribution. A “Training the Trainers” DVD depicting the prosthetic rehabilitation process is undergoing edits by a professional videographer. A small data analysis assessing the usability and understandability of the clinic posters was performed. Finally, we combined efforts with Dr. Lee’s MSPO research groups to design a study to assess the education materials, problem-solving decision trees and a mHealth initiative.

M-Score Assessment of Gait Rehabilitation

Faculty: Kevin Ball, PhD, Catherine Certo, DSc, PT and Walter Gorack, MS, PT
Students: Brian Famigletti, Nicholas Drago, Natalee Cifuentes, Theodore Raczka, Kevin Froese

Description: The M-Score test provides a quick assessment of dynamic mobility in ambulatory persons. Able to be administered almost anywhere, it takes about 3 minutes, and requires only the use of a standard chair, a measured distance of about 7 meters, and tape marks applied to the floor to define the test area. The M-Score consists of the stopwatch timing of four consecutive events: 5 times sit-to-stand; walk 6 meters; two 360-degree turns; and a 4-square step test. In this project we compare pre-post measures of the M-Score, the Tinetti Performance Oriented Mobility Assessment (POMA), the Lower Extremity Functional Scale (LEFS) questionnaire, and the discrete measure of Gait Speed. The test population consists of 20 persons undergoing inpatient gait rehabilitation. The purpose is to determine the comparative efficacy and efficiency of the M-Score for use in pre-post evaluation in a clinical environment.
Faculty Research Presentations (1:30 – 3:15 p.m., Auerbach Auditorium)

*Matters of the Heart- Running Marathons and Miles*
Beth Taylor, Amanda Zaleski, Gregory Panza, and Paul Thompson

*Prosthetic training across borders: Field testing low literacy prosthetics education tools*
Adam Goodworth, Diana Veneri

*Sensory Contributions to Typical and Atypical Development of Trunk Control*
Yen-Hsun Wu, Sandra Saavedra and Adam Goodworth

*Parent Inquiry Initiative: Identifying Enduring Knowledge to Transfer*
Paige M. Bray, Erin M. Kenney, Karla Woodworth, Carmen James, Timeca Peters, Cheryl Petersen and Doreen Abubakar

*Facilitating Collaboration with the TrACE Media Player*
Larissa B. Schroeder and Kevin Ball

*The Effects of Video Feedback with Pre-service Teachers*
Theresa Abodeeb-Gentile and Renee Greenfield

*Kindergarten Read Aloud Intervention (KRAI) Study*
Renée Greenfield

*CENTR Model for Community Engaged Translational Research*
Kevin A. Ball and Ralph O. Mueller

Student Poster Presentations

**Education** (4 – 5 p.m., Shaw Center)

*Teacher-Candidate’s Effect on Student Learning: Evidence-based Inquiry*
Integrated Elementary/Special Education program (individual posters):
Megan Syta
Sara Doherty
Alexandro Bruno
Alison Parkhurst
Rachel Bigley
Amanda Kramer
Nicholas Jones
Oren Tepper

Secondary English (individual posters):
Shannon Dass

**Health Sciences** (4:45 p.m. – 5:45 p.m., Shaw Center)

*On the Health of the Student Body: A Modest Proposal*
Bhavin Shah and Aaron Schwabacher
Nursing- Undergraduate RN to BSN program  (5 – 7 p.m., Shaw Center)

Nutrition Kitchen: Promoting Optimum Nutrition on a Limited Budget
Kimberley Bouchard, Erika Schubert

GPS to Success: Hartford North End Guide to Community Resources
Marc Libin, Joan Mezzanotte

Kickstart My Heart: Hands Only CPR Instruction at Hartford Public High School
Michael Pace, Valerie Cassidy, Theresa Adu-Hene

“Hop 2 It” Frog Hollow: Hartford Community Health Resource Map
Olusola Adediran, Cherie Bochenko

#Health4U- A Community Health Check
Marion James, Darlene Dionne, Fedora Changoo

Game Plan for Brighter Futures: Bringing Student Athletes Together
Daniel Beaupre, Valerie Lass

We believe: Sexual Assault Awareness
Cheryl Sheades

Be a Force in Education... College Awareness Day
Sandra Smith Hahn

Ditch the Stress: Coping with Stress and Anxiety in College
Laura Sheridan, Herty Lawson

Reflect, Enhance, Maintain; A Journey through Recovery for Urban Men
Lecian N. Kelly, Jessica M. Kelsey

Don’t Skip a Beat: Necessity of CPR Certification & AED Equipment in Urban Shelters
Lynn S. Anderson, Thomas Crisinati, Jr.

Think Outside the Bowl: Lunch and Learn Enhancing Health in Seniors
Michelle Marshall, Sheila Garilli

Pump the Cuff: Blood Pressure Trends among West Indian Seniors
Joan Anderson, Nicole Alex

Wellness Heroes: Creating Sustainable Groups in the Pursuit of Increased Confidence and Wellbeing
Staci Hebler, Anna Howat

Nursing- Graduate program  (5 – 7 p.m., Shaw Center)

Lighting the Path: Giving the Gift of Yoga
Therese Cassidy-Hammell

Perinatal Education and Support Program: Baystate’s New Beginnings
Kimberly Congden
The Role of the Bedside Nurse During a Rapid Response Call
Ashley Dobuzinsky

Goodbye Old Friend: Prevention of the Unnecessary Surrendering of Companion Animals Among the Elderly
Karen J. Davis

Lessons Learned: Management of Nursing Home Evacuees in Super Storm Sandy
Brenda Stratton

Prevent Whooping Cough: We’re Doing It Wrong!
Melissa Revicki

Code Blue: The Use of Simulation Mock Codes
Erin Pastuszak

Breast Feeding Support for First Time Moms
Jillian Zupan

What if I’m Wrong? The Daunting Challenges of Mandated Reporting
Jennifer Tabak

Educating Nurses To Speak Up Against Horizontal Violence
Amra Mekic

Why Community Health Workers are Good for our Health
Diane Bordonaro

Cultural Knowledge and Skill: The Essence of Patient Centered Care
Denise Jones

Back to Work: Nurse Manager Support of Nurses with Chronic Sorrow
Susan Marcella-Brienza, Tina Mennillo

Hijacked Innocence: School Nurses’ Role in Prevention of Domestic Minor Sex Trafficking
Lauren Kelly

Perinatal Bereavement: Supporting Women and Caregivers
Donna Stafilarakis

Using Concept-Based Education to Develop Patient Centered Care
Teresa M. Kittle

Minimizing Family Apprehension Related to Surgery Through Improved Communication Methods
Mary McLaughlin

Cultural Hypersensitivity
Agnieszka Marczuk

Anxiety in School Age Children: What Their Bodies May Be Telling You
Laura Molusis

Dementia and Exercise
Traci Tefft
Dance Lessons
Emily Hahn

Transforming Care at the Bedside: Enhancing Patient Safety Using SBAR
Jeanne P. Rivera, Irene Obeng-Asiedu

The Underserved or the Undeserved: Five Strategies to Combat Unconscious Bias
Patricia Bucknor-Ferron, Lori Zagaja

Medication Therapy Management (MTM) for Medicaid Recipients in Connecticut: A Policy Proposal
Jessica Worroll, Kaitlin Olson

The Need for Online Membership: A Website
Nadine Williams

The ABCDEs of Nursing: Essentials for New Nurses to Know
Melissa Dabkowski

Press Ganey: Confronting the Brutal Facts
Nancy Antell, Carol Phillips

The Importance of Colorectal Cancer Screening
Jennifer Barrett

Nursing Homes in U.S. differs from Nigeria
Hilda Ubaike

Transitioning from NICU: Setting Clear Expectations for Patients’ Families
Carol Galanter

Sexual Assault on Campus
Kristin Loranger

No Room at the Inn: A Leveraging of Separate Realities
Renee Malaro

Acts of Compassion in the Emergency Department: Impossible?
Joanne Sullivan

Protecting Our Own: Supporting Fellow Nurses Through Everyday Emotional Trauma in the ED
Meghan Hilliard

A Home Visit Checklist May Reduce Rehospitalizations
Sharon Wood

Adjusting to Long-term Placement of a Loved One with Family Care Planning
Sharon Binowski, Valerie Bailey

Group Therapy for Nightmares Caused by Post Traumatic Stress Disorders
Beena Sajeevkumar

Combating Change Fatigue in Today’s Healthcare Environment
Mariana Szumilas
Nurse on a Mission: Journey Toward Understanding Spiritual Care
Diane Leonard

Increasing Nurses’ Awareness and Understanding of Alcoholics Anonymous
Daisy Brown

Work-Related Stress In Nursing: U.S. & Brazilian Comparison
Elizabeth Orejuela, Selma Rosa

Asthma – A Parents’ Guide to Understanding Their Child’s Illness
Teri A. Walsh

Preconception Health Awareness
Elizabeth Brookshire

Teaching Emotional Intelligence to Adolescents: A Parent’s Guide
Romi Shrestha

COPD - Breathing But Not Eating
Pamela B. Leone

The Impact of Transformational Leadership
Krystyna Demusz

Color-Coded Scrubs for Nurses
Lisa Scianna

Better Living Through Exercise
Jennifer Rossman

Nursing- Faculty (5 – 7 p.m., Shaw Center)

International Consensus on Competencies for Community-Based Education (CBE) in Nursing: A Delphi Study in Progress
Zahra Ladhani, PhD

Rehabilitation Sciences

The Effect of Therapeutic Ultrasound on Shoulder Range of Motion: A Random Controlled Trial
Ian Brokaw, ATC, Keith Chittenden, Justin Maurizio, Samuel Min, Warren Rodrick
Faculty Advisor: Paul Higgins, DPT, ATC, CSCS

Local and International Testing of Prosthetic Education Tools
Meaghan Battige, Erika Jackson, Mike Liguore, Serena Liu, Patrick McCallum, Alyssa Schmidt, Core Sigan
Faculty/Advisors: Adam Goodworth, PhD, Diana Veneri, PT

Innovative Problem Solving Tools for Lower Limb Prosthetic Users
Liana Janick, Shannon Murphy, Lauren Noseworthy, and Amy Saelen
Faculty/Advisor: Daniel J. Lee, PT, DPT, GCS, Diana Veneri, PT, EdD, NCS, RYT, Adam Goodworth, PhD
Evidence Based Examination and Intervention of Scapular Dyskinesis
Greg Anderson, Liat Avital, Caitlyn Hauswirth, Cricket Medbery, Eric Sokolowski, Anna Zyla
Faculty/Advisor: John Leard EdD, PT, ATC

Applying Principles for Strength and Power Training to Individuals with Cerebral Palsy
Miranda Wallace, Ilicia Mathis, Jason Harnett, Bryan Lilley
Faculty/Advisor: Mary Gannotti, PT, PhD, George Gorton, MS, CRRP

Trunk Control in Adolescents with Idiopathic Scoliosis
Claire Crouch, Sean Wooldridge, Anthony Carrasquillo, Jacob Lang, Ryan Partridge, Brian Wally
Faculty/Advisors: Adam Goodworth, PhD, Sandra Saavedra, PT, PhD

Targeted Training for Children with Cerebral Palsy
Judith Levin, Maria Shuhl, Jessica Bado, Alysha Kaminski, Kasey Mayer, Molly Spargo
Faculty/Advisors: Sandra Saavedra, PT, PhD

Normalization of Segmental Assessment of Trunk Control
Sarah Berkowitz, Stephanie Curcio, Chelsea Medeiros, Nicole Salisbury, Danielle Smith
Faculty Advisor: Sandra Saavedra, PT, PhD, Carol Da Costa (visiting scholar)

SIT with CP: Targeted Training for Children with Cerebral Palsy
Ryan Carew, Andrea Kaminski, Sara Lefkowitz, Andres Mazo, Leah Raitt
Faculty/Advisors: Sandra Saavedra, PT, PhD

The POQOL-100 Test Survey
Authors: Michael Wininger, PhD, Bryan Fairbanks BS, CP, Keith Frost BS, CPO, Rick Greevy BS, CP, Michael McCauley MS, LCPO, Beth Orzell BS, CPO, Sarah Shine BS, CPO

Hartford Hand: Business Plan
Frank Finelli, Michelle Swanston BS, Joseph Cassella BS, Christopher Welch BS, Casey Beasley BS, Stephen Sousa BS
Faculty Advisor: Michael Wininger PhD

Hartford Hand: Self-Perception & Prosthetic Selection
Michelle Swanston BS, Chelsea Dornfeld BS, Casey Beasley BS, Joe Cassella BS
Faculty Advisor: Michael Wininger PhD

Augmenting Ankle Function During Gait with a Powered Ankle Foot Orthosis
Max Nigrosh, Alex Santa, Paulina Velez-Burgos, Peter Wallerson
Faculty: David A. Knapp, CPO, MEd

Meshed ventilated socket system
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Faculty: Duffy Felmlee, CPO, Matt Parente, MS, DPT, CPO, Michael Wininger, PhD

Mobility Score: Normative Response by Age
Ryan Ebert, Chelsea Miller, Linsey Neglio, Mark Reynolds, Julie Riley Faculty: Kevin Ball, PhD, Catherine Certo, DSc, PT and Walter Gorack, MS, PT