2012 ACRM-ASNR Annual Conference

CONFERENCE PROGRAM

PROGRESS IN REHABILITATION RESEARCH

- BRAIN INJURY
- SPINAL CORD INJURY
- STROKE
- NEUROREHABILITATION

9-13 OCTOBER 2012

VANCOUVER, BRITISH COLUMBIA, CANADA THE SHERATON VANCOUVER WALL CENTRE





Rusk Rehabilitation

salutes the

American Congress of Rehabilitation Medicine (ACRM)

for their ongoing commitment to research, education, and advocacy in the field of rehab medicine

Please join Rusk experts and our colleagues from other institutions at the following sessions:

Wednesday, October 10 8:00 am-12:00 pm

Emotions in Check and Problem Solved! Metacognitive Interventions for Individuals with Brain Injury: A Training Workshop Rusk presenters: Teresa Ashman, PhD, and Joseph Rath, PhD

1:00 pm–5:00 pm

Innovations in Stroke Rehabilitation Rusk presenter: John Ross Rizzo, MD

Thursday, October 11 5:00 pm–7:00 pm

Poster Presentations:

The Impact of Stroke Education Program on Patients' Stroke Knowledge and their Change of Stroke Risk Behaviors–Rachel Feld-Glazman, OTR/L and Lisa Sheikovitz, OTR/L

Positive Psychology and Resilience in Rehabilitation Medicine-Hilary Bertisch, PhD

Rusk has been named the best rehabilitation hospital in New York and among the top ten in the country by *U.S. News & World Report* for 23 consecutive years. Rusk is among the most renowned center of its kind for the treatment of adults and children with disabilities—home to innovations and advances that have set the standard in rehabilitation care for every stage of life and every phase of recovery.



www.NYULMC.org/RUSK

rusk.info@nyumc.org

WELCOME

Dear Colleagues,

It is my honor and great pleasure to welcome you to the largest interdisciplinary rehabilitation research conference in the world, the 2012 ACRM-ASNR Progress in Rehabilitation Research.

Even in these uncertain times, we're growing! Maybe that's because in times like these we need our professional community more than ever. Here you'll find a culture of collaboration and interdisciplinary exchange — researchers, providers, administrators, and funders working together to improve lives.

It is your willingness to get involved, countless volunteer hours, and the extraordinary talent and commitment of participating professionals who make this event so valuable. Whether you're looking for cutting-edge research, the latest in evidence-based practice, a better understanding of recent legislative changes, or just someone who understands your challenges, you'll find it here.

Of special note this year are our distinguished Plenary Speakers. Please join me in welcoming two teams of researchers from the University of British Columbia who will present the latest advances in spinal cord injury and brain imaging. They are:

ANDREI KRASSIOUKOV, MD, PHD, FRCPC, BRIAN K. KWON, MD, PHD, FRCSC and ANDREA TOWNSON, MD, FRCPC presenting "SCI Rehabilitation Research in the Great Northwest;" and

LARA BOYD, MPT, PHD, TERESA KIMBERLEY, PHD, PT and MICHAEL BORICH, PHD presenting "How Can Brain Imaging and Stimulation Inform Rehabilitation?"

Be sure to visit our exhibitors and check out the latest products and service solutions available. On Friday night, you're in for a special treat at the Henry B. Betts Awards Gala — the rocking, feel-good sound of the Swedish pop artists, ABBA (as performed by tribute band, ABRA Cadabra). Strut your 'Dancing Queen' glam and raise a glass to our 2012 award winners. It's going to be a night to remember!

There's still time to register for Continuing Education credit (available in NINE disciplines), or pick up tickets to one of our special events. Our staff at the registration area will be happy to help you.

And finally, we are delighted to announce that the 2013 ACRM *Progress in Rehabilitation Research* will convene in sunny Orlando, Florida, NOVEMBER 12 – 16. SAVE THOSE DATES!

Very special thanks go to the 2012 Program Committee (next page) for their commitment to delivering an unparalleled program, and to our sponsors whose generous support makes it all possible.

We know you will enjoy the experience!

amen Bush

Tamara Bushnik, PhD, FACRM ACRM President

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Tamara Bushnik, PhD, FACRM ACRM President



Improving lives through interdisciplinary rehabilitation research



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"We humans were designed on Planet Earth to be upright, weight-bearing, and in motion. Absent any one of these, we face deleterious health effects and diminished well-being. One purpose of rehabilitation is to move as quickly as we can along the trajectory from bedrest to being in motion."

-GERBEN DEJONG, PHD, FACRM



Improving lives through interdisciplinary rehabilitation research



CONTINUING EDUCATION

Continuing Education Credit for 9 Disciplines

Statement of Need and Target Audience

Interdisciplinary exchange, interaction, and cooperation are the cornerstones of optimal patient care. Educational opportunities that promote interprofessional learning and collaboration are needed to advance clinical and scientific research and its subsequent translation to clinical practice.

The 2012 ACRM-ASNR Progress in Rehabilitation Research conference provides that opportunity by bringing together both researchers and clinicians working in the various fields of rehabilitation medicine, including physiatrists, physical therapists, occupational therapists, speech pathologists, psychologists, rehabilitation nurses, rehabilitation case managers, rehabilitation counselors, disability specialists, and other professionals.

Learning Objectives

After participating in this activity, learners will be able to:

- Identify current and future research in rehabilitation medicine.
- Discuss recent research findings and their potential impact on the clinical care of rehabilitation patients.
- Apply evidence-based knowledge and skills to enhancing patient care.
- Identify strengths and weaknesses in the evidence base for treatment approaches to rehabilitation medicine.
- Describe fundamental issues in ethics, cultural diversity, and evidence-based practice as applied to rehabilitation medicine.

ACRM-ASNR aims to offer continuing education credits for everyone on the rehabilitation team. A single processing fee (\$75) entitles attendees to any/all certifications.

Continuing Education Credit for 9 Disciplines

Attendees of the 2012 ACRM-ASNR Progress in Rehabilitation Research conference may earn continuing education credits by participating in instructional courses, plenary sessions, symposia, special events, and poster sessions.

Health professionals can obtain up to 34.75 hours (approximate) of continuing education credit. ACRM-ASNR aims to offer continuing education credits for everyone on the rehabilitation team. A single processing fee (\$75) entitles attendees to any/all certificates.

Online Delivery of CME/CE/CEU Certificates

After participating in the live event, attendees can submit course evaluation forms and download certificates earned right from their own computer, 24/7. Certificates will be awarded to those participants who attend the conference and complete an online session evaluation by 10 December 2012. The number of continuing education credits/contact hours/units awarded will be based on the number of conference hours attended and the requirements of the specific accrediting organizations.

ACCREDITATION STATEMENTS*

PHYSICIANS

Professional Education Services Group (PESG) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Professional Education Services Group designates this live educational activity for a maximum of 34.75 AMA PRA Category 1 Credits[™]. Physicians should claim only the credit commensurate with the extent of their participation in this activity.

NURSES

Professional Education Services Group is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.



and street

Professional Education Services Group is awarding 34.75 contact hours for the successful completion of this continuing education activity.

SPEECH PATHOLOGISTS



This course is offered for 3.475 ASHA CEUs (Intermediate level. Professional area).

DISABILITY MANAGEMENT SPECIALISTS

The 2012 ACRM-ASNR Annual Meeting has been preapproved by the Certification of Disability Management Specialists Commission to provide continuing education credit to Disability Management Specialists. Maximum clock hours available are 34.75 clock hours.

PSYCHOLOGISTS

This Conference is approved for 34.75 hours of continuing education. APA Division 22, Rehabilitation Psychology is approved by the American Psychological Association to sponsor continuing education for psychologists. APA Division 22, Rehabilitation Psychology maintains responsibility for this program and its content. Note: No credit will be given for the Interactive Poster Session. This course is eligible for a total of up to 34.75 contact hours.

OCCUPATIONAL THERAPISTS: (ACCME NON-PHYSICIAN CME CREDIT)

For the purpose of recertification, the National Board for Certification in Occupational Therapy (NBCOT) accepts certificates of participation for educational activities certified for AMA PRA Category 1 Credit[™] from organizations accredited by the ACCME. Occupational Therapists may receive a maximum of 34.75 hours for completing this live program.

PHYSICAL THERAPISTS: (ACCME NON-PHYSICIAN CME CREDIT)

Physical Therapists will be provided a certificate of participation for educational activities certified for AMA PRA Category 1 Credit[™]. Physical Therapists may receive a maximum of 34.75 hours for completing this live program.

TEXAS PHYSICAL THERAPY ASSOCIATION (TPTA)

This live activity has been submitted for approval by the Texas Physical Therapy Association to provide continuing education credit. The application requested 34.75 hours of credit.

REHABILITATIVE COUNSELOR

The Commission on Rehabilitation Counselor Certification (CRCC) has pre-approved this live activity for a maximum of 34.75 clock hours.

CASE MANAGER

This program has been pre-approved by The Commission for Case Manager Certification to provide continuing education credit to CCM® board certified case managers. The course is approved for 34.75 clock hour(s).

PESG will also make available a General Participation Certificate to all other attendees completing the program evaluation.

DISCLOSURE STATEMENT

As an ACCME accredited provider, it is the policy of PESG to require faculty participating in this activity to disclose any relationship they may have with the commercial supporters of this activity or with any other commercial organizations. The staff of PESG has no financial interest or other relationships to disclose.

*All maximum approved hours are subject to change and will be finalized based on the offerings at the live meeting.

SPONSORS

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Please extend your gratitude for the generous support of these organizations...

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Redefining Possible for People with Spinal Cord and Brain Injuries







IOS Press





2012 ACRM-ASNR ANNUAL CONFERENCE PROGRAM

EXHIBITORS

EXHIBITS OPEN

Thursday, 11 October, 12:15 PM – 7:30 PM Friday, 12 October, 8:00 AM – 6:30 PM Saturday, 13 October, 8:00 AM – 12:00 PM

LOCATION

Pavilion, Jr. Ballroom and Foyer

American Congress of Rehabilitation Medicine

www.ACRM.org Jenny Richard 11654 Plaza America Drive #535 Reston, VA 20190 +1.703.435.5335

APDM, Inc.

www.ADPM.com Matthew Johnson 2828 SW Corbett Ave Suite 130 Portland, OR 97201 +1.503.446.4055

Academy of Spinal Cord Injury Professionals www.academyscipro.org Amy Cheatham

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ACRM Brain Injury interdisciplinary Special Interest Group www.ACRM Lance Trexler, PhD, ACRM BI-ISIG Chair

Braintree & New England

Rehabilitation Hospitals

Teresa Hayes 250 Pond Street Braintree, MA 02144 781.348.2107

Elsevier

www.elsevier.com Jeffrey Francis 1600 JFK Blvd Suite 1800 Philadelphia, PA 19103 +1.215.239.3491

Farabloc Development Corporation

http://www.farabloc.com/ Don Nixdorf 211-3030 Lincoln Ave Coquitlam, BC Canada V3B 6B4 +1.604.728.7787

FES Mobility Ltd.

http://fesmobility.com/ Maura Whittaker 1750 17th Street West Vancouver, BC V7V 3V2 Canada +1.604.922.2738

ACRM International Networking Group

www.ACRM.org/international 11654 Plaza America Drive #535 Reston, VA 20190 Fofi Constantinidou, PhD fofic@ucy.ac.cy

Kessler Institute for Rehabilitation

www.kessler-rehab.com Gail Solomon 1199 Pleasant Valley Way West Orange, NJ +1.973.243.6879

Neuro Solutions Inc.

www.neuro-solutions.ca Aaron Stiller 170 Brockport Dr Suite 101 Toronto, ON M9W 5C8 Canada +1.416.908.4611

ACRM Outcomes Measurement Networking Group

www.ACRM.org/outcome-measurement 11654 Plaza America Drive #535 Reston, VA 20190 Allen Heinemann, PhD, ABPP (RP), FACRM a-heinemann@northwestern.edu

Phoenix Technologies

http://www.phoenix.com Vanessa Chong 4302 Norfolk St Burnaby, BC

EXHIBITOR WELCOME RECEPTION

with Poster Viewing and Outstanding Poster Awards Presentation. See page 27 for more information.

Thursday, II October 5:00 PM – 7:00 PM

> V5G 4J9 Canada +1.604.321.3238

Protokinetics

www.protokinetics.com Michael Rowling 60 Garlor Dr Havertown, PA 19083 +1.610.449.4879

Rick Hansen Institute

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Santa Clara Valley Medical Center

www.scvmed.org Ann Perkins 751 S. Bascom Avenue San Jose, CA 95128 +1.408.885.2004

Spaulding Rehabilitation Network

www.spauldingrehab.org Dianne Lamb 125 Nashua St Boston, MA 02114 617-517-2770

ACRM Spinal Cord Injury Special Interest Group

www.ACRM.org/spinal-cord-injury Susan Charlifue, PhD 11654 Plaza America Drive #535 Reston, VA 20190 susie@craig-hospital.org

ACRM Stroke Special Interest Group

www.ACRM.org/stroke Phil Morse, PhD, FACRM, Co-Chair 11654 Plaza America Drive #535 Reston, VA 20190 philmorse@roadrunner.com





MONDAY 8 OCTOBER		LOCATION
5:00 рм — 7:00 рм	Registration Desk Open	
TUESDAY 9 OCTOBER		LOCATION
7:00 ам — 5:30 рм	Registration Desk Open	
8:00 am - 5:00 pm	Cognitive Rehabilitation Manual Training, Part 1 (Pre-registration required)	Grand Ballroom A/B
8:00 AM - 4:00 PM	Pediatric TBI: Effective Interventions for Children and Youth This course is included in your full-conference registration; however, due to space limitations, registration is required.	Grand Ballroom C/D
4:30 pm - 5:30 pm	BI-ISIG Pediatrics and Adolescent Task Force Meeting	Grand Ballroom C/D
WEDNESDAY 10 OCTOR	BER	LOCATION
7:00 am - 5:00 pm	Registration Desk Open	
8:00 am - 5:00 pm	Cognitive Rehabilitation Manual Training, Part 2 (Pre-registration required)	Grand Ballroom A/B
8:00 am - 5:00 pm	Early Career Development Course	Parksville (L3)
	INSTRUCTIONAL COURSES — morning	
8:30 am - 12:00 pm	Innovations in Stroke Rehabilitation — Part 1	Port McNeill (L4)
8:00 am - 12:00 pm	An Update on Rehabilitation in Multiple Sclerosis	Granville (L4)
8:00 am - 12:00 pm	Emotions in Check and Problem Solved! Metacognitive Interventions for Individuals with Brain Injury: A Training Workshop	Galiano (L4)
8:00 am - 12:00 pm	Management Conundrums among Patients with Severe TBI: Ethical Considerations and Practice	Orca (L3)
8:00 am - 12:00 pm	Evidence, Theory and Experience: Implementing Evidence into Rehabilitation Practice	
12:00 pm - 1:00 pm	NETWORKING BREAK WITH LUNCH	Finback (L3) Foyer (L3)
12.001101 1.001101	ALTWORKING BREAK WITH LONGH	
	INSTRUCTIONAL COURSES — afternoon	
1:00 pm - 5:00 pm	Innovations in Stroke Rehabilitation, Part 2	Port McNeill (L4)
1:00 рм — 5:00 рм	Instrumentation of Clinical Balance and Gait Tests for Rehabilitation Assessment	Granville (L4)
1:00 pm - 5:00 pm	Assessment and Treatment of Emotion Recognition Impairment after Brain Injury	Galiano (L4)
1:00 pm - 5:00 pm	Behavioral Measuring and Monitoring to Improve Patient Outcomes: An Evidence-Based Meta-Practice	Orca (L3)
1:00 pm - 5:00 pm	Introduction to Individual Growth Curve Analysis	Port Alberni
5:30 рм — 7:30 рм	Early Career & First-Timers Networking Reception	Grand Ballroom C







URSDAY 11 OCTOB	ER	LOCATION
7:00 am — 5:00 pm	Registration Desk Open	
7:00 am - 8:00 am	Stroke SIG Steering Committee Meeting	Parksville (L3)
9:00 am - 10:00 am	Membership Committee Meeting	Port McNeill (L4)
9:00 am - 10:00 am	International Networking Group Meeting	Galiano (L4)
8:00 am - 10:00 am	Welcome Remarks PLENARY SESSION: SCI Rehabilitation Research in the Great Northwest	Grand Ballroom
10:00 am - 10:30 am	NETWORKING BREAK	Jr. Ballroom Foyer
10:30 ам — 12:00 рм	Mitchell Rosenthal Memorial Lectures	Grand Ballroom
12:00 рм – 1:00 рм	BI-ISIG Community-Based Treatment Task Force Meeting	Galiano (L4)
12:00 рм – 1:30 рм	Brucker International Luncheon (Ticketed Event)	TBD
12:15 рм — 7:30 рм	Exhibition Open, Posters Displayed	Pavilion, Jr. Ballroom & Foyer
1:30 рм — 3:00 рм	CONCURRENT SESSIONS	
	Sheldon Berrol Memorial Chautauqua Lecture	Grand Ballroom A/B
	Development and Initial Evaluation of the SCI-CAT Functional Assessment Instrument	Finback (L3)
	Recovery of Aphasia and Timing of Language Treatment	Galiano (L4)
	Neural Control of Movement after Spinal Cord Injury	Port McNeill (L4)
	Rehabilitation after Knee and Hip Arthroplasty: Current Issues and Concepts of Care.	Granville (L4)
	Measuring Rehabilitation Care across the Continuum: How Will We Know if We are Meeting Patients' Needs?	Port Alberni (L4)
2:00 pm — 3:00 pm	Outcomes Measurement Networking Group Meeting	Port Hardy (L4)
3:00 рм — 3:30 рм	NETWORKING BREAK EXHIBITION OPEN	Pavilion, Jr. Ballroom & Foyer
3:30 рм — 5:00 рм	CONCURRENT SESSIONS	
	Oral Presentation of Scientific Papers:	Finback (L3)
	 Course of Mood and Its Predictors Following Moderate to Severe Traumatic Brain Injury: Prospective Cohort Study 	
	Getting Back to the Community and Staying There: Examining Community Discharge and Consecutive Days Spent in the Community	
	 Extra Physical Therapy and Occupational Therapy Increased Physical Activity Levels in Orthopedic Rehabilitation: Randomized Controlled Trial 	
	 Implementing Technology-Based Embedded Assessment in the Home and Community Life of Individuals Aging with Disabilities 	
	 High-Intensity Antigravity Motor Training Improves Clinical Status and Gait Capacity in Parkinson's Disease 	
	BI-ISIG Annual Summit.	Port McNeil (L4)
	 Innovative SCI Rehab Study Reveals Relationships of Patient Characteristics and Treatment Interventions with Outcomes after SCI. 	Orca (L3)
	 Activity-Based Restorative Therapy: From Compensation to Restoration A Novel Targeted Sensory Reinnervation Method to Improve Function of 	Parksville (L3)
	Myoelectric Prostheses after Arm Amputation	Galiano (L4)
	Changing Practice to Improve Cardiovascular Health and Promote Active Lifestyles ofter Stroke	Granville (L4)
	after Stroke Risk-Adjusted Models for Inpatient Rehabilitation Quality Metrics	Port Alberni (L4)
5:00 рм — 6:00 рм		
5:00 рм — 6:00 рм 5:00 рм — 7:00 рм	BI-ISIG Task Force Chairs Meeting Exhibitor Welcome Reception with Scientific Poster Viewing and Outstanding	Port McNeil (L4))
5.001 WI 7.00 PM	Poster Awards Presentation	Pavilion, Jr. Ballroom & Foyer



IDAY 12 OCTOBER		LOCATION
7:00 am - 5:00 pm	Registration Desk Open	
7:15 am – 8:15 am	Stroke-SIG Business Meeting	Parksville (L3)
7:15 am – 8:45 am	Cognitive Rehabilitation in the Netherlands: Recent Developments	Finback (L3)
7:15 am – 8:15 am	CONCURRENT SESSIONS — BREAKFAST SESSIONS	
	 Multidisciplinary Care of the Multiple Sclerosis Patient, Part 1 Activity-Based Therapy for Recovery of Walking in Individuals with Chronic Spinal Cord Injury: Results from a Randomized Clinical Trial 	
	Outcomes Measurement Resources for Rehabilitation Clinicians	
	 The Clinical Applications of Pediatric Rehabilitation Research from Junior Investigators in the Field Defining What We Do, Part 1: Conceptual Issues in Developing a Taxonomy 	Port Alberni (L4)
	of Rehabilitation Treatments	Orca (L3)
8:00 am - 6:30 pm	Exhibition Open, Posters Displayed	Pavilion, Jr. Ballroon & Foyer
8:30 am - 10:00 am	CONCURRENT SESSIONS	
	Multidisciplinary Care of the Multiple Sclerosis Patient, Part 2	Galiano (L4)
	 Defining What We Do, Part 2: Major Treatment Theory Groups and Their Role in a Taxonomy of Rehabilitation Treatments. Oral Presentation of Scientific Papers: 	Orca (L3) Port McNeill (L4)
	 Cognitive-Behavioral Prevention of Post-Concussion Syndrome in At-Risk Patients: A Pilot Randomized Controlled Trial Sports-Related Concussion/mTBI in Adolescents: Structural Brain Changes may Predict Clinical Status 	
	 A Systematic Review of Treatment for Post-Traumatic Brain Injury Fatigue Association of Acute Neuroimaging Abnormalities and Headache in the First Year after Traumatic Brain Injury A Randomized, Dual-Center Controlled Trial of Brief Intervention for Problem Alcohol Abuse in Persons with Traumatic Brain Injury 	
	Promoting Adoption of Outcomes Data Collection in Rehabilitation Practice	Granville (L4)
	Exercise for Mood and Cognition: Implications for Rehabilitation Populations	Port Alberni (L4)
9:00 am — 10:00 am	Deborah L. Wilkerson Early Career Award	Grand Ballroom A
10:00 am - 10:30 am	NETWORKING BREAK EXHIBITION OPEN	Pavilion, Jr. Ballroon & Foyer
10:30 am - 11:30 am	BI-ISIG Long-Term Issues Task Force Meeting	Finback (L3)
10:30 am - 12:00 pm	PLENARY SESSION: How Can Brain Imaging and Stimulation Inform Rehabilitation?	Grand Ballroom A
11:00am – 12:00 pm	Communications Committee Meeting	Azure (L3)
12:00 рм — 1:30 рм	SCI-SIG Luncheon with Speakers (Ticketed Event) Moving Evidence into SCI Clinical Practice: Challenges and Opportunities	Grand Ballroom C
12:00 рм – 1:30 рм	BI-ISIG Girls and Women with TBI Task Force Meeting	
12:00 рм – 1:30 рм	BI-ISIG Disorders of Consciousness Task Force Meeting	Finback (L3)
1:30 pm – 3:00 pm	CONCURRENT SESSIONS	
	 Neuromodulatory Rehabilitation: Stroke Motor Recovery and Beyond An Evidence-Based Approach to Treatment of Impaired Emotion Recognition among 	Orca (L3)
	Individuals with TBI	Galiano (L4)
	 Health and Fitness Benefits of Functional Electrical Stimulation for People with SCI . Validation of New Measures of Patient Reported Outcomes for Rehabilitation Madicine 	
	 Medicine	Granville (L4)

IDAY 12 OCTOBER		LOCATION
1:30 pm – 3:00 pm	CONCURRENT SESSIONS CONTINUED	
	Oral Presentation of Scientific Papers:	Grand Ballroom A
	 Effectiveness of Home/Community-Based Rehabilitation for 738 Patients with Stroke: Evidence of a Dose-Response Relationship 	
	2. Post-Stroke Exercise: Effects on Cardiovascular Risk, Fitness and Function	
	 Balance Impairment is Associated with Decreased Quality of Life in People with Chronic Stroke; 	
	 Patients with Hemi-Spatial Neglect are More Prone to Limb Spasticity, but the Former Prolong Hospital Stay; 	
	5. Executive Dysfunction Immediately Post Mild-Stroke	
3:00 рм — 3:30 рм	NETWORKING BREAK EXHIBITION OPEN	Pavilion, Jr. Ballroon & Foyer
3:30 рм — 5:15 рм	Oral Presentation of Scientific Papers:	Grand Ballroom B
	 Treatment of Mild to Moderate Depression in Persons with SCI: A Randomized Clinical Trial 	
	2. Comparing Rehabilitation Outcomes between Older and Younger People with SCI	
	 Tongue Drive System: Evaluation of Novel Technology and Comparison to Existing Assistive Technology Control Methods 	
	 The Impact of Locomotor Training on Cardiovascular Parameters in Patients with Incomplete Spinal Cord Injury 	
	 An Experimental Study of the Impact of Assistive Technology on Users and their Informal Caregivers 	
	6. Correlates of Participation in Patient Satisfaction Survey among Stroke Patients of Inpatient Rehabilitation	
3:30 рм — 5:00 рм	CONCURRENT SESSIONS	
	Stroke Special Topics Session: "Translating Research into Clinical Practice: the GRASP Program"	Port McNeill (L4)
	Restorative Neurology of Spinal Cord Injury: Neurobiological Problem and Novel Methods for Assessment and Intervention	Orca (I 3)
	Wrestling with Hypnos: Sleep, Wake, and Fatigue after TBL	
	• Comparative Effectiveness Research: An Introduction for Rehabilitation Specialists .	Galiano (L4)
	Traumatic Brain Injury Research: A Public Health Perspective	Port Alberni (L4)
5:00 pm - 6:30 pm	ACRM Membership Meeting	Grand Ballroom C
6:45 рм – 7:15 рм	Past Presidents Reception (by invitation only)	Grand Ballroom A/B
7:15 рм — 10:00 рм	Henry B. Betts Awards Gala — Ticketed Event	Grand Ballroom A/B



230.44 - 12:30 AM Bejistration Desk Open 2:30.44 - 8:30 AM Bi/SIG Prognosis after IBI Task Force Meeting Finback (L3) 7:30.44 - 8:30 AM Program Committee Meeting Finback (L3) 7:30.44 - 8:30 AM Program Committee Meeting Arrun (L3) Pavian (L3) 8:00.44 - 10:00 AM Exhibition Open, Posters Displayed Pavian (L3) Finback (L3) 8:00.44 - 10:00 AM MDRR-Sponsored ARRT Young Investigators Panel Grand Balroom A Forger 8:00.44 - 10:00 AM MDRR-Sponsored ARRT Young Investigators Panel Grand Balroom A Forger 1 Differential Neoriment of Listening Strategies tof Autitory Rhythms in Parkinson Disease Forger Ford Malroom A 2 Euclidating the Neurobiology of Self-Reported Fatigue in Multiple Selerosis (MS): The Interplay of Networks Grand Balroom A 3: 0 AM - 10:00 AM Educating Balance in Oliver Aduits Grand Balroom A 8:30 AM - 10:00 AM Educating Balance in Oliver Aduits Grann Balroom A 9: Parting TB Common Data Elements into Practice Orca (L3) Grann L4) 0:00 AM - 10:00 AM Edworeating an Effective Stepping Responses to Waist Pull	SATURDAY 13 OCTOBE	ER	LOCATION
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			Granville (L4)
		Women Living with TBI: What Do We Know and What Do We Need to Know	Port Alberni (L4)







EARLY CAREER DEVELOPMENT COURSE

Minimizing On-Ice Penalties During Your Early Career Face-Off

A course on grantsmanship and career development for early career researchers

WEDNESDAY, 10 OCTOBER

8:00 AM - 5:00 PM

WHO SHOULD ATTEND?

The course is open to anyone, but targets an audience of early-career researchers, clinician scientists, and clinicians interested in starting a research agenda. Attendees range from graduate students nearing the completion of their degree, to postdoctoral scholars and junior faculty. Even if you have previously attended the Early Career Development Course, you will benefit by attending again! The course program changes every year, based on the needs expressed by previous course participants.

PROGRAM OVERVIEW

The morning program will provide participants with an overview of funding mechanisms for early-career investigators, from agencies in both Canada and the United States. A panel of experienced and junior researchers will discuss challenges in early-career development and offer insight about how they overcame these challenges. Discussants will share personal experiences in applying for, reviewing, and mentoring early-career awards. The morning session will conclude with a speed-networking activity that will allow course participants to meet and briefly chat with panel speakers, mentors and funding-agency representatives. This will be followed by an informal lunch to continue networking opportunities.

The afternoon program comprises a series of breakout sessions (informal discussion) led by mid-career and senior rehabilitation scientists. Parallel sessions allow participants to choose the ones most relevant to their needs and interests (topics are listed below). The afternoon session will finish with an introduction of ACRM Special Interest and Networking Group representatives to highlight additional avenues for networking and involvement in the organizations.

BREAKOUT SESSIONS SHORT-HANDED GOAL

Conducting pilot research with limited funding

RECOVERING FROM HIGH-STICKING Interpreting and responding to reviewer comments

PREPARING FOR YOUR HAT TRICK"

Aiming for career development awards

TEAM YOU

Recruiting and assembling collaborators for your research

SCORING ON THE GOALIE

Preparing for promotion and tenure

HOME-ICE ADVANTAGE

Advancement suggestions for clinical researchers collecting data in their worksites

FACULTY HIGHLIGHTS

The 2012 annual Early Career Development Course focuses on

grantsmanship, with particular emphasis on career development and pilot/small project funding mechanisms. This year's course will also include tips and advice on how to get your research started without funding. The full-day program will comprise a combination of didactic presentation, panel discussion, one-on-one networking, and small group discussions.

> Some of the people you can meet during the Early Career Course include **RALPH NITKIN**, program Director for Biological Sciences and Career Development in the National Center for Medical Rehabilitation Research; STUART HOFFMAN, Scientific Program Manager for Brain Injury, Rehabilitation Research and Development Service, US Dept of Veterans Affairs; **DAWN NEUMANN**, current NIDRR Switzer Fellowship recipient; ARLENE SCHMID, current VA Career Development Award recipient, the Editors of the Archives of Physical Medicine and Rehabilitation, and many more experienced researchers ready to share their wisdom.

EARLY CAREER & FIRST-TIME ATTENDEES NETWORKING RECEPTION

Wednesday, 10 October 5:30 PM – 7:30 PM Grand Ballroom C

(Early Career and first-time attendees only)

Conclude the day with a casual cocktail reception, network with colleagues, and meet representatives of the ACRM Special Interest Groups, Networking Groups, and committees. If you are a first-time conference attendee, this is a great opportunity to learn about the work of ACRM and how to get involved. For a complete list of ACRM groups, task forces and committees, please see page 70.

Early Career Development Course participants may also continue their interaction with their mentors, breakout facilitators, course organizers and funding agency program officers in a relaxed, social setting.

SPECIAL EVENTS

Don't miss these networking opportunities and award-winning lecturers. Some Special Events require sign-up. Please see the ACRM booth if you wish to attend and did not already sign-up. Some ticketed events will sell out.



Friday night Awards Gala entertainment ABRA Cadabra.

THURSDAY, 11 OCTOBER

10:30 AM — 12:00 PM	MITCHELL ROSENTHAL MEMORIAL LECTURES "Reconceptualizing Brain Injury Rehabilitation In The Future: A Peek Over The Horizon" GRAND BALLROOM (Page 23) LECTURERS: Catherine A. Mateer, PhD; James F. Malec, PhD, ABPP-CN, RP, FACRM This award lectureship is jointly sponsored by ACRM and Division 22 of the American Psychological Association.
I:30 PM — 3:00 PM	SHELDON BERROL MEMORIAL CHAUTAUQUA LECTURE "When Does Rehabilitation End and How Do We Decide?" GRAND BALLROOM A/B (PAGE 23) Gary Ulicny, PhD with a panel of experts Included in Conference registration fee, however please register.

Sponsored by the ACRM Brain Injury Interdisciplinary Special Interest Group



Gary Ulicny, PhD

FRIDAY, 12 OCTOBER

9:00 AM — 10:00 AM	DEBORAH L. WILKERSON EARLY CAREER AWARD WINNER PRESENTATION "Closing the Gap: Early Intervention for Cognitive Disability after Stroke" GRAND BALLROOM A (Page 31) Award Winner and Presenter: Elizabeth R. Skidmore, PhD, OTR/L This award honors individuals who make significant contributions to rehabilitation research in their early career work.	
3:30 PM — 5:00 PM	STROKE SPECIAL TOPICS SESSION "Translating Research into Clinical Practice: the GRASP Program" PORT MCNEILL (L4) (Page 34) Janice Eng, PT, PhD will moderate a panel discussion including, Linda Boronowski, (Reg; Sarah Rowe, PT; and Drew Dawson, MD. Sponsored by the ACRM Stroke Special Interest Group.	
7:15 PM — 10:00 PM	HENRY B. BETTS AWARDS GALA GRAND BALLROOM A/B (TICKETED EVENT)	

Celebrate excellence in rehabilitation research and enjoy the feel-good sound of Swedish pop artists, ABBA, as performed by tribute band, ABRA Cadabra. Casual attire. http://mooncoinproductions.com/stageshows/abbacadabra

SATURDAY, 13 OCTOBER

10:30 AM – 11:30 AM JOHN STANLEY COULTER LECTURE "Neuromodulation of Spinal Circuitry for Recovery after Neurologic Injury" GRAND BALLROOM A

This year's prestigious lectureship recognizes Susan Harkema, PhD for her professional achievement and contributions to the advancement of the field of rehabilitation. (*Page 39*)





Janice Eng, PT, PhD



SUSAN HARKEMA, PHD

9 OCTOBER

REGISTRATION DESK OPEN

7:00 AM - 5:30 PM

★SPECIAL EVENT



COGNITIVE REHABILITATION MANUAL TRAINING — PART 1 (PRE-REGISTRATION REQUIRED) 8:00 AM – 5:00 PM GRAND BALLROOM A/B



Lance E. Trexler, PhD, Rehabilitation Hospital of Indiana, Indianapolis, IN; Amy Shapiro-Rosenbaum, PhD, Park Terrace Care Center, Flushing, NY; Donna Langenbahn, PhD, Rusk Institute of Rehabilitation Medicine, New York, NY

Based on the ground-breaking ACRM Cognitive Rehabilitation Manual: Translating Evidence-Based Recommendations into Practice, this two-day introductory course, led by authors of the Manual, will provide an extraordinary opportunity to learn the application of interventions as part of evidence-based practice, with an emphasis on how to synthesize evaluation data to develop comprehensive and integrated treatment plans for holistic rehabilitation. Part 1 addresses impairments of attention, memory and hemispatial neglect and offers clear presentation and discussion of case examples.

★SPECIAL EVENT



PEDIATRIC TBI: EFFECTIVE INTERVENTIONS FOR CHILDREN AND YOUTH (PRE-REGISTRATION REQUIRED) 8:00 AM - 4:00 PM GRAND BALLROOM C/D

This course is included in your full-conference registration; however, due to space limitations, registration is required.

Ann Glang, PhD, Center on Brain Injury Research and Training at the Teaching Research Institute, Western Oregon University, Monmouth, OR; Julie Haarbauer-Krupa, PhD, Children's Healthcare of Atlanta, Atlanta, GA; Karen McAvoy, PsyD, Center for Concussion, Rocky Mountain Hospital for Children, Denver, CO; Shari L. Wade, PhD, Cincinnati Children's Hospital Medical Center and the University of Cincinnati College of Medicine, Cincinnati, OH

This course offers presentations to address care for children and their families following brain injury. International experts in the field of pediatric brain injury will present on the topics of family intervention, return to school, identification and management of sports related concussions, and transition to adulthood.

- Shari Wade, PhD: Evidence for Family-Centered Interventions: Who is most likely to benefit?
- Ann Glang, PhD: Evidence-based hospital-to-school transition model for children with TBI
- Karen McAlvoy, PsyD: REAP: A Community-Based Multidisciplinary Team Approach to Concussion Management
- Julie Haarbauer-Krupa, PhD: Readiness for Independence: A model transition program for teens with ABI

BI-ISIG PEDIATRICS AND ADOLESCENT TASK FORCE MEETING

4:30 PM — 5:30 PM GRAND BALLROOM C/D

Julie Haarbauer-Krupa, PhD, Pediatrics Group Chair

Pediatric rehabilitation professionals are encouraged to attend this organizational meeting and get involved on the ground floor as organizers seek to form a new ACRM Networking Group. Help identify the critical rehabilitation issues this group will address, recruit colleagues in the field, or step into a leadership role as chair of a task force.

FOCUS

KEY

DIAGNOSIS

Brain Injury

Stroke

Other

Spinal Cord Injury

(MS, Parkinsons)

Multiple diagnoses

Neurodegenerative Disorder

Diagnosis-independent or NA

- Research methods: measurement, research design analytic/statistical method
- Clinical practice: assessment, diagnosis, treatment/clinical intervention, knowledge translation/ EBP

Epidemiology/outcomes research

- Neuroscience: neural regeneration/ repair, motor control/learning, biomechanics
- Technology: prosthetics/orthotics, robotics, assistive technology, information (telehealth, social media) and communications technology
- Health/disability policy, ethics, advocacy
- Academic training, research mentoring, and research funding

REGISTRATION DESK OPEN

7:00 AM - 5:00 PM

FULL DAY COURSES

8:00 AM - 5:00 PM



SPECIAL EVE N'T

COGNITIVE REHABILITATION MANUAL TRAINING — PART 2 GRAND BALLROOM A/B (PRE-REGISTRATION REQUIRED) 8:00 AM - 5:00 PM

Keith Cicerone, PhD, ABPP-Cn, FACRM, JFK Johnson Rehabilitation Institute, Edison, NJ; Kristen Dams-O'Connor, PhD, Mount Sinai School of Medicine, New York, NY; Rebecca D. Eberle, MA, CCC-SLP, BC-NCD, Indiana University. Bloomington, IN; Donna Langenbahn, PhD, Rusk Institute of Rehabilitation Medicine, New York, NY; Lance E. Trexler, PhD, Rehabilitation Hospital of Indiana, Indianapolis, IN

Part Two continues discussion and case studies of interventions for impairments of hemispatial neglect, as well as executive functions and social communications.

SPECIAL EVENT

EARLY CAREER DEVELOPMENT COURSE PARKSVILLE (L3) 8:00 AM - 5:00 PM

(SEE PAGE 15 FOR FULL DESCRIPTION)

The 2012 annual Early Career Development Course focuses on grantsmanship, with particular emphasis on career development and pilot/small project funding mechanisms. This year's course will also include tips and advice on how to get your research started without funding. The full-day program will comprise a combination of didactic presentation, panel discussion, one-on-one networking, and small group discussions. The course is open to anyone, but targets an audience of early-career researchers, clinician scientists, and clinicians interested in starting a research agenda.

INSTRUCTIONAL COURSES MORNING SESSIONS

8:00 AM - 12:00 PM



INNOVATIONS IN STROKE REHABILITATION — PART 1 PORT MCNEILL (L4) 8:30 AM - 12:00 PM

Catherine E. Lang PT, PhD, Washington University, St. Louis, MO; Arlene Schmid, PhD, OTR, Roudebush VA Medical Center, Indianapolis, IN; Robert Teasell, MD, FRCPC, Schulich School of Medicine, Western University of Ontario, London, ON, CA; Lara Boyd, PT, PhD, Brain Research Centre, UBC Hospital, University of British Columbia, Vancouver, BC, CA

Despite several advances in stroke rehabilitation research, stroke remains the leading cause of serious long-term disability in the United States. Part 1 of this instructional course will present and discuss the most recent evidence addressing motor impairments, and will examine how treatment intensity is defined and implemented to address motor impairments after stroke. The presentations will discuss variability in terminology and methods of implementation using examples from current practice and research. In addition, presentations will discuss current best evidence supporting the effective use of methods to increase treatment intensity in stroke rehabilitation, including methods for building intensity within interventions across the continuum of care (e.g. acute hospitalization to community-based practice).



AN UPDATE ON REHABILITATION IN MULTIPLE SCLEROSIS PORT MCNEILL (L4)

Ben W. Thrower, MD, Shepherd Center, Atlanta, GA; Albert Lo, MD, PHD, CPH, Brown University, Providence, RI; Sue Bennett, PT, EdD, University of Buffalo, Buffalo, NY; Patricia Bobryk, MHS, PT, MSCS, ATP, Orlando Health, Orlando, FL

The field of MS management has seen an explosion of treatment options for delaying the progression of this leading cause of nontraumatic disability in young adults. Unfortunately, no cure exists and disability is still common. This course provides an update on the overall comprehensive management of MS, including relapse management, symptomatic therapies and therapies designed to slow the course of the disease overall. It will also focus on rehabilitation issues specific to MS.

3) EMOTIONS IN CHECK AND PROBLEM SOLVED! METACOGNITIVE INTERVENTIONS FOR INDIVIDUALS WITH BRAIN INJURY: A TRAINING WORKSHOP GALIANO (L4)

Teresa Ashman, PhD, Joseph Rath, PhD, New York University Langone Medical Center, New York, NY; Theodore Tsaousides, PhD, Joshua Cantor, PhD, Mount Sinai School of Medicine, New York, NY

Top-down, meta-cognitive interventions have been used effectively in rehabilitation following traumatic brain injury to improve executive functioning, self-monitoring and self-awareness. This instructional course is a skill-building workshop focusing on two theory-based and empirically tested meta-cognitive interventions: Problem Solving and Emotional Regulation. Practical, clinician-oriented training in

the implementation of the interventions will be provided through hands-on, in-vivo demonstrations.

ER is a cognitive-behavioral intervention designed to increase awareness of the nature and impact of emotional reactions on cognition and behavior and to promote skill development to improve emotional control and appropriate behavioral responses. ER skills reduce impulsivity and avoidance and facilitate an adaptive approach to real life problems.

PS is a five-step approach to problem-solving involving recognition of the existence of a problem, definition of the problem, generation of potential solutions, selection and implementation of solutions, and outcome evaluation. PS is intended to increase anticipatory awareness, cognitive flexibility, divergent thinking, planning, initiation, self-monitoring, and decision-making. Frequent repetition of the steps, use of an acronym, systematic questioning, and use of cues and reminders facilitate memorization and habituation of the problemsolving method and increase frequency of use.

Given the negative impact of emotional dysregulation on problemsolving, combining these two interventions (PS and ER) leads to improvements in problem-solving, decision-making, interpersonal communication and relationships and mood.

4) MANAGEMENT CONUNDRUMS AMONG PATIENTS WITH SEVERE TBI: ETHICAL CONSIDERATIONS AND PRACTICE ORCA (L3)

Joseph Fins, MD, Weill Cornell Medical College, New York, NY; Risa Nakase-Richardson, PhD, Catherine Wilson, PsyD, Marissa McCarthy, MD, James A. Haley Veterans Hospital/University of South Florida, Tampa, FL; Joseph T. Giacino, PhD, Harvard Medical School, Boston, MA; Doug Katz, MD, Boston University/Braintree Rehabilitation Hospital, Boston, MA; John Whyte, MD, PhD, Moss Rehabilitation Research Institute, Elkins Park, PA; Stuart A. Yablon, MD, Baylor Institute for Rehabilitation, Dallas, TX; Brian Greenwald, Mount Sinai School of Medicine, New York, NY

Clinicians face many challenges in the acute and long-term management of persons with severe TBI. The challenges are magnified when collaborating consultants and family members do not have an accurate understanding of the patient's diagnosis and prognosis. Further, clinicians are often faced with challenging personal emotions for grieving family members with varied expectations. The collision of these forces results in challenging situations for providers with ethical implications.

Although local opportunities exist for peer consultation, opportunities to discuss these issues with leading experts in brain injury ethics and rehabilitation care are rare.

The purpose of this course is to present common ethical challenges facing clinicians managing patients with severe TBI with follow-up discussion by a panel of comprised of peers in ethics, rehabilitation medicine, and psychology. Case presentations illustrating common challenges among patients with severe TBI will be presented by providers and researchers working with severe brain injury patients. Cases will illustrate both management and ethical challenges facing clinicians and researchers along with shared practices for resolution.

Topics for presentation include (a) management of pain (or not) among persons with disorders of consciousness who are classified as being unresponsive to nociception (i.e., coma, vegetative state), (b) sexual reproduction rights of patients who are not capable or competent to make their own decisions, (c) termination of supportive measures for patients with anticipated poor prognosis (including decision of when to implement DNR status), and (d) denial of treatment of medical comorbidities (e.g., comorbid injuries related to trauma) secondary to expectation of poor prognosis.

5) EVIDENCE, THEORY AND EXPERIENCE: IMPLEMENTING EVIDENCE INTO REHABILITATION PRACTICE FINBACK (L3)

Allen Heinemann, PhD, ABPP (RP), FACRM, Allan J. Kozlowski, PhD, PT, Jennifer Moore, PT, DHS, NCS, Jason Raad, MS, Rehabilitation Institute of Chicago, Chicago, IL; Alison Hoens, BScPT, MSc, Physiotherapy at Providence Health Care, Vancouver, BC, CA; Marie Westby, PT, PhD, University of British Columbia, Vancouver, BC, CA

Implementing evidence-based changes into clinical practice is a necessary but challenging endeavor for rehabilitation clinicians and administrators. Individuals working within complex organizational environments with multiple stakeholders may be tasked with updating their own practice or that of a department or facility. Understanding the theoretical and practical bases for implementing a change in practice may enhance the ability of an individual to facilitate an organizational change.

This course will provide learners with an overview of the literature on implementing evidence-informed changes in healthcare and within organizations. The course will review individual and organizational change theories, and summarize implementation frameworks. Rehabilitation change agents from Canada and the United States will describe outcome measure implementation in two different contexts: one in a large, non-profit rehabilitation system of care in the United States, and the other in a network of public outpatient facilities and private clinics which provide service on behalf of a provincial health authority in Canada. Workshop activities will provide learners with tools to evaluate their own settings in regard to identifying of barriers and facilitators to a practice change, selecting strategies for implementation, and evaluating the process and outcomes of a relevant evidence-informed practice initiative.

NETWORKING BREAK WITH LUNCH

FOYER (L3) 12:00 PM - 1:00 PM

INSTRUCTIONAL COURSES AFTERNOON SESSIONS

1:00 PM - 5:00 PM

6) INNOVATIONS IN STROKE REHABILITATION — PART 2 PORT MCNEILL (L4)

Elizabeth Skidmore, PhD, OTR/L, University of Pittsburgh, Pittsburgh, PA; Deirdre Dawson, PhD, OT Reg (ON), Rotman Research Institute at Baycrest, Toronto, ON, CA; Sarah E. Wallace, PhD, SLP-CCC, Adult Neurogenic Clinic at Duquesne University, Pittsburgh, PA; Pamela S. Roberts, PhD, OTR/L, SCFES, FAOTA, CPHQ, Richard V. Riggs, MD, Cedars-Sinai Medical Center, Los Angeles, CA; John Ross Rizzo, MD, Rusk Institute of Rehabilitation Medicine, New York, NY

Despite several advances in stroke rehabilitation research, stroke remains the leading cause of serious long-term disability in the United States. This instructional course will help disseminate key research findings by presenting and discussing the most recent evidence addressing cognition and vision impairments in the afternoon session (Part 2).

The afternoon session will contain a series of paper presentations addressing the current state of the science examining cognition and visual impairments after stroke. In particular, presentations will address the influences of cognitive and visual impairments on stroke rehabilitation outcomes and recovery, and innovative approaches to assessing, diagnosing, and treating these impairments. Presentations will place a special emphasis on impairments in executive functions, aphasia, and visual functions.

The afternoon session will end with a panel discussion that reviews critical themes that arise in the sessions and derives key points to inform practice and future stroke rehabilitation research studies. 7) INSTRUMENTATION OF CLINICAL BALANCE AND GAIT TESTS FOR REHABILITATION ASSESSMENT GRANVILLE (L4)

Laurie A. King, PhD, PT, Martina Mancini, PhD, Oregon Health & Science University, Portland, OR; James McNames, PhD, Portland State University, Portland, OR

This course will introduce how rehabilitation professionals can use the latest inertial senor technology to obtain objective measures of balance and gait. Current assessments of balance and gait in clinical rehabilitation are largely limited to subjective scales, simple stopwatch measures, or complex, expensive machines not practical or largely available. Although accelerometers and gyroscopes have been shown to accurately quantify many gait and balance kinematics, only recently has a comprehensive, portable system become available for clinicians.

By measuring body motion during tests that clinicians are already performing, and by providing instant data analysis, the added time for assessment is minimal.

By providing instant analysis of balance and gait and comparing a patient's performance to age-matched control values, therapists receive an objective, sensitive screening profile of balance and gait strategies. This motion screening profile can be used to identify mild abnormalities not obvious with traditional clinical testing, measure small changes due to rehabilitation and to design customized rehabilitation programs for each individual's specific balance and gait deficits. This course will provide both theoretical and scientific overview as well as a real time demonstration.

8)	

ASSESSMENT AND TREATMENT OF EMOTION RECOGNITION IMPAIRMENT AFTER BRAIN INJURY GALIANO (L4)

Barry S. Willer, PhD, University at Buffalo, Buffalo, NY; Flora Hammond, MD, Dawn Neumann, PhD, Indiana University School of Medicine, Indianapolis, IN; Duncan Ross Babbage, PhD, Massey University, Wellington, WN, NZ; Barbra Zupan, PhD, Brock University, St. Catharines, ON, CA

The presenters participated in a NIDRR sponsored research program to develop and test a training program for individuals with impaired emotion recognition resulting from acquired brain injury. Approximately one-third of individuals with moderate to severe brain injury have impaired emotion recognition and this has a profound effect on interpersonal relationships.

The Emotion Recognition Training (ERT) program was evaluated using a randomized clinical trial. Research sites in Canada, the United States and New Zealand took part. Analysis of the full results

DAILY SCHEDULE 10 OCTOBER

will be completed in 2012 but findings indicate that subjects with brain injury showed improvement as a result of the ERT program, and that improvement was greatest at long term follow up. Full details of the research design, outcome measures, statistical analysis and results will be presented during this instructional course.

The ERT program is computer based and requires a therapist to conduct the training. We used a computer based therapeutic approach in order to improve transference of the ERT to other rehabilitation programs. That was also one of the reasons why we chose to evaluate the ERT in three different sites. One aim of this instructional course is to establish a group of collaborators willing to evaluate the translation of the ERT into additional clinical settings. Those who attend the course and elect to participate in the translational research project will be provided additional support for implementation as a follow-up to the conference. The 2012 ACRM conference represents the launch for the study results and the ERT program.

9) BEHAVIORAL MEASURING AND MONITORING TO IMPROVE PATIENT OUTCOMES: AN EVIDENCE-BASED META-PRACTICE ORCA (L3)

James F. Malec, PhD, ABPP-CN, RP, FACRM Jacob Kean, PhD, University of Indiana Medical School/Rehabilitation Hospital of Indiana, Indianapolis, IN; Joseph T. Giacino, PhD, Spaulding Rehabilitation Hospital/Harvard Medical School, Boston, MA; Michael Mozzoni, PhD, Lakeview Neurorehabilitation Center, Effingham, ME; Bonnie Schaude, MA, CCC/SLP, Shepherd Center, Atlanta, GA

The importance of basing clinical practice on established scientific findings is increasingly recognized. In this era of evidence-based practice (EBP), numerous studies with a variety of patient populations have confirmed the benefits of objective monitoring/self-monitoring (MSM) of patient status using reliable and valid measurement methods. MSM is an intervention that improves patient status both directly through timely and strategic changes in the treatment plan and indirectly through supporting nonspecific factors, such as, therapeutic alliance. Potentially applied across a variety of patient populations and problems, MSM constitutes an EBP meta-practice.

The beneficial applications of specific methods for MSM will be described, discussed and illustrated through case examples across the continuum of care and recovery after brain injury. J. Giacino will describe cognitive and behavioral assessment methods to monitor recovery of consciousness and appropriately adjust treatment for patients with prolonged disorders of consciousness after brain injury. M. Mozzoni will detail applied behavior analysis of the stimulusresponse-consequence sequences for reducing severe behavior disturbance following brain injury. B. Schaude and J. Malec will describe the use of Goal Attainment Scaling to assist patient in post-hospital rehabilitation programs to improve their capacity to set realistic goals for community re-integration and make progress towards these goals. J. Kean will present methods and technologies to assist individuals in monitoring and managing persistent symptoms, problems, and risk factors in the long term after brain injury.

Workshop participants will learn specific methods described as well as underlying principles that may be applied to a variety of patient populations and problems.

10) INTRODUCTION TO INDIVIDUAL GROWTH CURVE

Christopher Pretz, PhD, Scott Edwin Douglas Kreider, MS, Jeffrey P. Cuthbert, MPH, MS, Craig Hospital, Englewood, CO; Allan J. Kozlowski, PT, PhD, Rehabilitation Institute of Chicago, Chicago, IL; Kristen Dams-O'Connor, PhD, Mount Sinai School of Medicine, New York, NY

As we witness the maturation of longitudinal datasets in rehabilitation (e.g., the Spinal Cord Injury National Dataset and the TBI Model Systems National Dataset) the need for rehabilitation researchers to appropriately assess how outcomes progress over time becomes more prevalent. Individual growth curve (IGC) analysis is an extremely powerful and versatile statistical tool for accomplishing this with capabilities for doing so that far exceed those of more traditional approaches (i.e. series of cross-sectional analyses, pre post designs, etc.). With enhancements in software packages and exposure to training such as this, rehabilitation researchers will be better prepared to explore a wide variety of hypotheses regarding temporal effects related to outcome.

SPECIAL EVENT (For Early Career and first-time attendees)

EARLY CAREER & FIRST-TIME ATTENDEES NETWORKING RECEPTION 5:30 PM - 7:30 PM GRAND BALLROOM C

Conclude the day with a casual cocktail reception, network with colleagues, and meet representatives of the ACRM Special Interest Groups, Networking Groups and committees. If you are a first-time conference attendee, this is a great opportunity to learn about the work of ACRM and how to get involved. For a complete list of ACRM groups, task forces and committees, please see page 70 - 71.

Early Career Development Course participants may also continue their interaction with their mentors, breakout facilitators, course organizers and funding agency program officers in a relaxed, social setting.

DAILY SCHEDULE

11 OCTOBER

REGISTRATION DESK OPEN

7:00 AM - 5:00 PM

EXHIBITION OPEN, POSTERS DISPLAYED 12:15 PM - 7:30 PM

STROKE-SIG STEERING COMMITTEE MEETING

7:00 AM - 8:00 AM PARKSVILLE (L3)

WELCOME REMARKS PLENARY SESSION

8:00 AM - 10:00 AM GRAND BALLROOM

SCI REHABILITATION **RESEARCH IN THE GREAT NORTHWEST**

This session will introduce participants to the latest advances in the clinical and basic research conducted by clinicians and scientists in British Columbia in collaboration with colleagues in Canada and across the globe in the area of spinal cord injury (SCI). This session will bring to light the latest advances in basic science research in SCI and regeneration research that have led to a variety of novel experimental therapeutics strategies (from cell transplantation to new modern molecules) to promote functionally effective axonal regrowth and sprouting (Dr. B. Kwon).

Next, we will present the latest International initiative by American Spinal Injury Association (ASIA) and International Spinal Cord Society (ISCoS) that addresses the poorly understood issues of autonomic dysfunctions following SCI (Dr. A. Krassioukov). Recently, individuals with SCI rated autonomic dysfunctions as the number one priority for their recovery and quality of life.

Finally, Dr. Townson will present a unique spinal cord injury research evidence (SCIRE) project originating in Canada and familiar to many SCI professionals across the globe.

Andrei Krassioukov MD, PhD, FRCPC

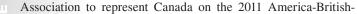
Dr. Krassioukov is a clinician-scientist and an internationally

- recognized expert in the area of autonomic dysfunctions following
- spinal cord injury. He obtained his MD degree in Russia, followed Ľ
- by successful PhD training and thesis defence at the Ivan Pavlov
- ч К С Institute of Physiology, St Petersburg, Russia. He is currently a
- professor at the Division of Physical Medicine and Rehabilitation,
- Department of Medicine, and co-director and scientist at the Inter-
- ۵. national Collaboration on Repair Discovery (ICORD) at the University of British Columbia, Vancouver, Canada. He is also a staff physician at the spinal cord injury program at the GF Strong Rehabilitation Centre in Vancouver. He is a chair of the International Autonomic Standards Committee for American Spinal Injury Association and International Spinal Cord Society (ASIA/ISCoS). Dr. Krassioukov's research is supported by grants from the Christopher and Dana Reeve Foundation, Canadian Institute for Health Research, Heart and Stroke Foundation, Canadian Foundation for
- Innovation, Craig Neilsen Foundation and many others. He has published more than 100 peer-reviewed manuscripts, books, book chapters and reviews. He is a member M of numerous advisory boards for the international agencies involved in research in the area of spinal cord injury and disability. Dr Krassioukov's work in the area of spinal cord injury has been recognized through numerous national and international

awards including, recently, the inaugural Alan Brown Award from the American Spinal Injury Association (ASIA).

Brian K. Kwon, MD, PhD, FRCSC

Brian K. Kwon, MD, FRCSC, PhD, is an associate professor, Division of Spine Surgery, Department of Orthopaedics at the University of British Columbia, in Vancouver, BC. Dr. Kwon was a spine fellow at the Thomas Jefferson University Hospital, Philadelphia, PA and a research post-doctoral fellow at ICORD, Vancouver, BC. He was selected by the Canadian Orthopaedic



- Canadian (ABC) Traveling Fellowship and presented lectures in
- England, Australia and New Zealand. In 2010, he received the Kappa Delta Young
- Investigator Award from the Orthopaedic Research Society / American Academy
- of Orthopaedic Surgeons and was honored with first place awards for top scientific papers by the Cervical Spine Research Society and the International Meeting on
 - Advanced Spinal Technologies (IMAST). Dr. Kwon's research is currently supported by the Rick Hansen Institute, the US Congressionally Directed Medical Research Program, US Defense Medical Research & Development Program, the Canadian Institutes for Health Research, and others.

Andrea Townson, MD, FRCPC

Dr. Andrea Townson is a clinical associate professor and head of the University of British Columbia Division of Physical Medicine and Rehabilitation.

Dr. Townson is a fellow of the Royal College of Physicians and Surgeons of Canada and is a certificant of the American Board of Physical Medicine and Rehabilitation. In addition, she holds subspecialty certification in spinal cord injury medicine from the American Board of Physical Medicine and Rehabilitation.

Her research interests include spinal cord injury, high tetraplegia and ventilator dependency and fatigue. She is a member of ICORD, the International Collaboration on Repair Discoveries in Vancouver.





DAILY SCHEDULE

11 OCTOBER

MEMBERSHIP COMMITTEE MEETING

9:00 AM - 10:00 AM PORT MCNEILL (L4)

INTERNATIONAL NETWORKING GROUP MEETING

9:00 AM - 10:00 AM GALIANO (L4)

NETWORKING BREAK

10:00 AM - 10:30 AM JUNIOR BALLROOM FOYER

MITCHELL ROSENTHAL MEMORIAL LECTURES

RECONCEPTUALIZING BRAIN INJURY REHABILITATION IN THE FUTURE: A PEEK OVER THE HORIZON

10:30 AM - 12:00 PM GRAND BALLROOM

MODERATOR: J. Preston Harley, PhD, FACRM, Advocate Christ Medical Center, Wheaton, IL

ACRM-SELECTED LECTURERS: Catherine A. Mateer, PhD, University of Victoria, Victoria, BC, CA and James F. Malec, PhD, ABPP-CN, RP, FACRM, Rehabilitation Hospital of Indiana, Indianapolis, IN



ACRM and Division 22 of the American Psychological Association jointly sponsor this annual lectureship.

The way rehabilitation professionals, organizations and institutions engage with clients in providing brain injury rehabilitation is changing fast. The rate of change will need to accelerate to stay apace of a rapidly evolving rehabilitation neuroscience and meet the challenge of

providing effective and cost efficient care. Advances in our understanding of neuroplasticity and functional recovery from brain injury, a vast array of new technologies, and greatly expanded channels of communication all present tremendous opportunities. In this session we will discuss implications of reconceptualizing brain injury as a chronic condition, new developments in the neuroscience for recovery of skills, advances in precision outcome measurement and implementation science, new technologies that enable and expand interventions and new tools for compensation and adaptation to the chronic impacts of brain injury. These new developments will undoubtedly shape the future of client, family and community engaged rehabilitation.

BI-ISIG COMMUNITY-BASED TREATMENT TASK FORCE MEETING

12:00 PM - 1:00 PM GALIANO (L4)

SPECIAL EVENT



BRUCKER INTERNATIONAL LUNCHEON

(TICKETED EVENT) STICKETS 12:00 PM - 1:30 PM TBD



Marcel Post, PhD from the Rehabilitation Centre De Hoogstraat, Utrecht, Netherlands will speak on "Need and Opportunities for Cross-Cultural Studies on Quality of Life in Rehabilitation Medicine."

Sponsored by the ACRM International Networking Group, this event highlights global rehabilitation practice and research.

BI-ISIG COMMUNITY-BASED TX TASK FORCE MEETING

12:00 PM - 1:00 PM

OUTCOMES MEASUREMENT NETWORKING GROUP **COMMITTEE MEETING**

2:00 PM - 3:00 PM

CONCURRENT SESSIONS 1:30 PM - 3:00 PM

SHELDON BERROL MEMORIAL CHAUTAUQUA LECTURE

This BI-ISIG sponsored annual event explores values, ethics, and humanism in brain injury rehabilitation.

WHEN DOES REHABILITATION END AND HOW DO WE DECIDE?

GRAND BALLROOM A/B

MODERATOR: Gary Ulicny, PhD

Given the current climate of healthcare reform, as well as the ongoing perceived conflict between those who advocate for brain injury treatment and those whose role is to manage treatment allocation under concerns of cost effectiveness.



the topic of the 2012 Chautauqua, "When Does Treatment End, and How Do We Decide?" is a fitting Chautauqua topic and should generate great discussion. With the broad range of stakeholders in the decisions made about rehabilitation, the Chautauqua session will include a panel of individuals who represent different constituencies related to the topic, but who are not always in attendance.

With Gary R. Ulicny, PhD as moderator, this year's Chautauqua will examine the personal, professional, and health system rationales behind decisions to continue or stop brain-injury treatment. Dr. Ulicny was ACRM 2010-2011 President and has served as President and CEO of Shepherd Center, Atlanta, GA, since 1994.

This year's panel includes:

• Charles Wheeler, III, a brain injury survivor who is also completing his Ph.D. in Rehabilitation Counseling

DAILY SCHEDULE

CONCURRENT SESSIONS CONTINUED... 1:30 PM - 3:00 PM

- Ryan Tisinger, an advocate for obtaining appropriate services for people with brain injuries
- Dr. Mark Bayley, Medical Director at Toronto Rehabilitation Hospital
- Dr. Adam Seidner, Medical Director of the Workers Compensation Division of Travelers Insurance
- Leslie Small, Vice President of Clinical Operations for Paradigm's Catastrophic Care Division

Attendees will have an opportunity to participate in the discussion.

DEVELOPMENT AND INITIAL EVALUATION OF THE SCI-CAT FUNCTIONAL ASSESSMENT INSTRUMENT FINBACK (L3) Alan Jette, PhD, PT, Wendy Coster, PhD, OTR/L, FAOTA, Boston University,

Boston, MA; David Tulsky, PhD, University of Michigan, Ann Arbor, MI; Vanessa Noonan, PT, PhD, Rick Hansen Institute, Vancouver, BC, CA

This symposium will present the latest findings of a new functional measure for adults with spinal cord injury, called the Spinal Cord Injury Computer Adaptive Test (SCI-CAT). There is growing recognition that limitations of current SCI outcome measures pose a serious impediment to conducting SCI research and monitoring clinical programs. Two prominent groups — the International Campaign for Cures of SCI Paralysis (ICCP) Clinical Guidelines Panel, an international panel established to review the methodology for clinical trials in SCI, and the 2006 NIDRR SCI Measures Meeting — emphasized the urgent need to improve SCI outcome measures.

This symposium will present the results of research on the SCI-CAT, a state-of-the-art functional measure for adults with spinal cord injury, supported by the NIDRR National Model Systems Program for Spinal Cord Injury. Presenters will discuss computer adaptive testing (CAT) methods, review the development of the SCI-CAT measure, present findings on the SCI-CAT's psychometric properties, and overview ongoing efforts to link the SCI-CAT with a pediatric SCI functional assessment measure to enable the assessment of functional abilities across the lifespan. The symposium will conclude with a discussion of how these innovative measures can be used to advance spinal cord injury research and clinical practice.

RECOVERY OF APHASIA AND TIMING OF LANGUAGE TREATMENT GALIANO (L4)

Mieke E. van de Sandt-Koenderman, PhD, Ineke van der Meulen, PhD, Rijndam Rehabilitation Centre, Rotterdam, Zuid, Holland, Netherlands; Hanane el Hachioui, PhD student, Erasmus MC University Medical Center, Rotterdam, NL

There is a growing body of evidence to support the efficacy of language treatment in post stroke aphasia. As in other domains of stroke rehabilitation, it is a widely held view among aphasiologists that aphasia therapy should start as early as possible with high intensity. The evidence for treatment intensity is well-established (Bhogal et al 2003, Stroke; Robey 1998, JSLHR), but so far, there is insufficient evidence that treatment should start immediately post stroke. On the one hand, it is hypothesized that early treatment is more effective, because it coincides with the neural recovery processes occurring in the first weeks and months post stroke. On the other hand, intensive treatment might be counterproductive at this stage, as there are indications that high treatment intensity leads to higher drop-out rates (Cochrane database, Kelly 2010).

Clearly, the optimal timing of intensive language treatment is a clinically relevant question. This symposium addresses this issue in three presentations. First, El Hachioui discusses determinants for aphasia recovery in the first year post stroke. Secondly, we zoom in on one well-defined treatment method, the Melodic Intonation Therapy (MIT), to discuss the issue of timing in relation to treatment efficacy and underlying neural processes. Van der Meulen compares the results of two clinical trials on the efficacy of MIT: in the sub-acute versus the chronic stage post stroke. Van de Sandt-Koenderman presents fMRI data on these patients, thus contrasting therapy-induced neural reorganization in early versus later stages post stroke.

NEURAL CONTROL OF MOVEMENT AFTER SPINAL CORD INJURY PORT MCNEILL (L4)

ACRM thanks the University of Pittsburgh School of Medicine Department of Physical Medicine and Rehabilitation and the UPMC Rehabilitation Institute for their generous support of this symposium.

Monica A. Perez, PT, PhD, University of Pittsburgh, Pittsburgh, PA; Bruce H. Dobkin, MD, FANA, FRCP, University of California, Los Angeles, CA; Peter H. Ellaway, PhD, Imperial College London, UK; Arthur Prochazka, PhD, University of Alberta, Edmonton, AB, CA

The ability to control movement is impaired after spinal cord injury (SCI). In this symposium we will discuss physiological and functional consequences of SCI and current strategies to enhance the control of movement after injury.

During the last years, studies have focused on understanding of transmission in cortical and subcortical pathways controlling partially paralyzed muscles providing relevant targets for recovery and plasticity after SCI. Novel and improved assessments of sensory, motor, and autonomic function have shown the potential to add resolution and sensitivity to standard clinical testing. This may provide a useful adjunct to the American Spinal Injuries Association Impairment Scales.

In parallel, rehabilitation strategies for SCI have continued to evolve. Growing evidence supports the view that task-specific training strategies combining intensive repeated exercise therapy with functional electrical stimulation (FES) and robotic devices are useful to maximize the control of movement after SCI. While In-Home Tele-Rehabilitation combined with FES is a feasible and innovative approach that can further enhance upper-limb motor function, bodyweight support treadmill training (BWSTT) and robotics were shown to be rehabilitative interventions that can contribute to some extent to the recovery of walking function. Advances and limitations in all these areas of research will be highlighted.

DAILY SCHEDULE

CONCURRENT SESSIONS CONTINUED ... 1:30 PM - 3:00 PM

REHABILITATION AFTER KNEE AND HIP ARTHROPLASTY: CURRENT ISSUES AND CONCEPTS OF CARE **GRANVILLE (L4)**

Justine Naylor, PhD, BAppSc (Phty), University of NSW, Sydney, AU; Marie D. Westby, PT, PhD, University of British Columbia, Vancouver, BC, CA; Marlene Fransen, PT, MPH PhD, University of Sydney, Sydney, AU; Victoria Ko, BAppSc (Phty) (Hons) University of NSW, Sydney, AU

Total knee arthroplasty (TKA) and total hip arthroplasty (THA) are common and highly effective treatment options for alleviating the pain and disability caused by chronic arthritis. Worldwide the numbers of people undergoing these procedures are increasing annually. Consequently, the demand for rehabilitation after surgery is also growing. In 2003, the NIH Consensus Statement on TKA stated that peri-operative rehabilitation is the most understudied aspect of the procedure. In 2007, this observation was reiterated jointly by the ACRM and AAPMR, stating that research evaluating rehabilitation after joint replacement was a priority for healthcare practice and funding policies.

In 2012, the evidence demonstrating the value of post-acute rehabilitation after THA and TKA remains weak. This is largely due to a lack of well-designed clinical trials comparing the optimum timing of therapy and the effectiveness of the varied treatment settings and therapeutic approaches offered after arthroplasty more so than evidence demonstrating a lack of effect. There has also been very little exploration of the role of patient preferences for therapy.

This symposium, through lecture presentation and panel discussion, will present high-level evidence concerning the effectiveness of physical rehabilitation after TKA and THA including findings from recent Cochrane systematic reviews and a large 3-armed multicentre RCT comparing one-to-one therapy to group-based or home-based therapy after TKA. Insights into patient preferences for therapy after TKA derived from three cohort studies will also be presented. Via panel discussion, current concepts concerning the optimum timing of rehabilitation will be discussed and the evidence-practice gaps identified and prioritized.

MEASURING REHABILITATION CARE ACROSS THE CONTINUUM: HOW WILL WE KNOW IF WE ARE MEETING PATIENTS' NEEDS? PORT ALBERNI (L4)

Janet Prvu Bettger, ScD, FAHA, Duke University School of Nursing and the Duke Clinical Research Institute, Durham, NC; Anne Deutsch, RN, PhD, CRRN, Holly DeMark Neumann, MPPA, Allan J. Kozlowski, PT, PhD, Rehabilitation Institute of Chicago, Chicago, IL

Measuring and reporting on the quality of health care provides health professionals and administrators with the data needed to target opportunities for change, improvement and growth, and provides consumers with the information to make decisions about care. Existing health care quality metrics consider components of rehabilitation care and outcomes but empirically derived metrics for evaluating rehabilitation are limited.

The purpose of this symposium is to present the advances in health care quality measurement for rehabilitation services across the continuum of care and to discuss appropriate quality metrics for rehabilitation for accountability (i.e., public reporting and valuebased purchasing/pay-for-performance).

We will focus on metrics appropriate for patients with stroke. Three individual presentations will be delivered to first, present the scientific properties of quality measures for rehabilitation in the acute hospital and appropriateness of transitional care metrics for stroke patients discharged to post-acute rehabilitation; second, present findings from an examination of post-acute quality metrics; and third, discuss the validation of a patient-centered outcome assessment designed to be appropriate for measuring quality of life during and after an episode of illness. These presentations will be followed by a panel discussion on measuring the performance and quality of rehabilitation and issues around pay-for-performance and public reporting.

SPECIAL EVENT

OUTCOMES MEASUREMENT NETWORKING GROUP MEETING 2:00 PM - 3:00 PM

PORT HARDY (L4)

Kenneth J. Ottenbacher, PhD, OTR will present "Rehabilitation Research using Large Datasets: Opportunities and Challenges" focusing on identifying opportunities for collaborative outcomes research.

The presentation will review resources available to rehabilitation investigators including the NIH funded R24 Center for Rehabilitation Research using Large Datasets (CRRLD). Some unique challenges associated with secondary data analyses of large datasets will be described and examples relevant to rehabilitation outcomes presented.

Kenneth J. Ottenbacher, PhD, OTR is the Russell Shearn Moody Distinguished Chair, and professor and director of the Rehabilitation Sciences Division at the University of Texas Medical Branch in Galveston, TX. He is also associate director of the Sealy Center on Aging.

NETWORKING BREAK & EXHIBITION

3:00 PM - 3:30 PM PAVILION, JR. BALLROOM & FOYER

CONCURRENT SESSIONS 3:30 PM - 5:00 PM

ORAL PRESENTATION OF SCIENTIFIC PAPERS FINBACK (L3)

MODERATOR: Virginia Mills, MS, PT, CCM, LicNHA, Community Rehab Care, Inc.

Course of Mood and Its Predictors Following Moderate to Severe Traumatic Brain Injury: Prospective Cohort Study; Linda Valk-Kleibeuker (Rijndam Rehabilitation Centre,

CONCURRENT SESSIONS CONTINUED... 3:30 PM - 5:00 PM

Rotterdam, the Netherlands, Maasstad Hospital and Erasmus MC Rotterdam, the Netherlands).

- Getting Back to the Community and Staying There:
 Examining Community Discharge and Consecutive Days
 Spent in the Community; Natalie E. Leland, PhD, OTR/L, BCG,
 University of Southern California, Los Angeles, CA
- Extra Physical Therapy and Occupational Therapy Increased Physical Activity Levels in Orthopedic Rehabilitation: Randomized Controlled Trial; Casey Peiris, Bphys, Eastern Health, La Trobe University, Blackburn, South Victoria, AU
- Implementing Technology-Based Embedded Assessment in the Home and Community Life of Individuals Aging with Disabilities; Mark Harniss, PhD, University of Washington, Seattle, WA
- High-Intensity Antigravity Motor Training Improves
 Clinical Status and Gait Capacity in Parkinson's Disease;
 Martin H. Rose, University of Copenhagen, Copenhagen,
 Denmark; Annemette Løkkegaard; Stig Sonne-Holm; Bente R.
 Jensen

BI-ISIG ANNUAL SUMMIT PORT MCNEIL (L4)

INNOVATIVE SCI REHAB STUDY REVEALS RELATIONSHIPS OF PATIENT CHARACTERISTICS AND TREATMENT INTERVENTIONS WITH OUTCOMES AFTER SCI ORCA (L3)

Gale Whiteneck, PhD, FACRM, Craig Hospital, Englewood, CO; Allen W. Heinemann, PhD, Rehabilitation Institute of Chicago, Chicago, IL; Julie Gassaway, MS, RN, Institute for Clinical Outcomes Research (ICOR), Salt Lake City, UT; Rebecca Ozelie, MHS, OTR/L, BCPR, Rush University, Chicago, IL

The SCI Rehab Project is a multi-center five-year research effort designed to determine which SCI rehabilitation interventions are most strongly associated with positive outcomes at one year post injury. This symposium will summarize the study's practice-based evidence methodology, resultant discipline-specific rehabilitation taxonomies, and associations of patient and treatment characteristics with outcomes in the 1376 patients enrolled at six centers over two and a half years.

Patient and injury characteristics are strong predictors of most outcomes; the addition of discipline-specific treatments increases the predictive power significantly. Significant predictors of higher motor FIM scores include more time spent in occupation therapy (OT) activities of lower body dressing and home management skills and physical therapy (PT) activities of gait, aquatics, manual wheelchair mobility, and strengthening. Greater numbers of therapeutic recreation (TR) sessions involving sports, horticulture, creative expression, and outdoor activities are associated with more participation in these activities at the 12-month anniversary.

Associations with outcomes also are analyzed for groups of patients with similar levels of injury who do not exhibit natural neurologic recovery as measured by relatively stable International Standards of Neurological Classification of Spinal Cord Injury from admission to discharge. For patients with stable motor complete low tetraplegia, patient/injury variables explain 44% of the variation in discharge motor FIM; adding OT treatments (clothing management and hygiene related to toileting and home management skills work are significant) increases the predictive power to 68%.

Clinical implications of the interventions most strongly associated with outcomes will be discussed.

ACTIVITY-BASED RESTORATIVE THERAPY: FROM COMPENSATION TO RESTORATION PARKSVILLE (L3)

John W. McDonald, III, MD, PhD, Rebecca Martin, OTR/L, OTD, Brooke Meyer, PT, DPT, International Center for Spinal Cord Injury at Kennedy Krieger Institute, Baltimore, MD; Cristina Sadowsky, MD, Johns Hopkins University, Baltimore, MD

Activity-Based Restorative Therapy (ABRT) is a combination of novel and traditional rehabilitative therapeutic techniques, applied based on scientific evidence indicating that activity is critical in the repair and optimal functioning of the intact or injured, fully matured or developing, central nervous system.

ABRT involves purposeful, repetitive activation of the nervous system above and below the injury level with the scope of optimizing the system's recovery while working to offset the rapid aging and chronic complications that occur as a consequence of neurologic injury.

This course will cross basic science, medical, and therapy fields to provide participants with background knowledge and practical skills in the application of ABRT with specific focus on shifting from conventional therapy, which focuses on compensatory training, to actual restoration of function lost to neurological disease or injury.

Drawing from current evidence, we will discuss the impact of activity at the cellular and systems level. Specific attention will be paid to the medical selection and management of patients and specific therapeutic approaches. Additionally, long-term management, dosing, timing, and desired responses will be discussed. Finally, presenters will discuss avenues for further research and implications for practice.

A NOVEL TARGETED SENSORY REINNERVATION METHOD TO IMPROVE FUNCTION OF MYOELECTRIC PROSTHESES AFTER ARM AMPUTATION GALIANO (L4)

Jacqueline Hebert, MD, FRCP, K. Ming Chan, MB, ChB, FRCPC, FABEM, Jaret Olson MD, FRCSC, Patrick M. Pilarski, PhD, University of Alberta, Edmonton, AB, CA; Michael (Rory) Dawson, MSc, Glenrose Rehabilitation Hospital, Edmonton, AB, CA

This interdisciplinary presentation will profile our novel program of research to improve sensory feedback, integration, and control of prosthetic limbs, from surgical intervention through to experimental myoelectric control systems. Our team in Edmonton is the only center in Canada to have performed the targeted muscle reinnervation (TMR) procedures on persons with upper limb amputation.

DAILY SCHEDULE

CONCURRENT SESSIONS CONTINUED... 3:30 PM - 5:00 PM

Although patients with TMR tend to develop some cutaneous representation of their missing limb in the skin overlying the reinnervated muscle, we have developed a new surgical and intraoperative approach to target sensory nerves to specifically reinnervate discrete areas of the skin, as well as a proof of concept to translate force feedback from a robotic device to the patient in a physiologically appropriate manner.

This symposium will present our surgical technique, approach, and the results of cutaneous reinnervation in this new Targeted Sensory Reinnervation (TSR) approach. The physiological outcomes will be reviewed. Our proof of concept using a robotic myoelectric training tool and sensory feedback tactor system will be demonstrated. We will also outline concepts in motor control and reinforcement-based machine learning that could lead to improved natural control and the integration of sensory feedback intoprosthetic limb control systems. This program of research could have wide applicability to control systems for prosthetic devices and robotic systems, and significantly improve the understanding of sensory feedback and integration following amputation and nerve injury.

CHANGING PRACTICE TO IMPROVE CARDIOVASCULAR HEALTH AND PROMOTE ACTIVE LIFESTYLES AFTER

STROKE GRANVILLE (L4)

Sandra Billinger, PT, PhD, Janice Eng, PhD, PT/OT, Ada Tang, PT, PhD, University of British Columbia, Vancouver, BC, CA; Richard F. Macko, MD, University of Maryland, College Park, MD

Stroke survivors are at elevated risk for recurrent stroke or other cardiac event. Engaging in regular physical activity and improving fitness levels are known to lower cardiovascular risk, yet stroke rehabilitation and healthcare professionals have not routinely incorporated formal exercise training into clinical practice.

This symposium will highlight current research supporting the rationale for exercise interventions after stroke, discuss how structured physical activity can improve multiple physiological and functional parameters linked to better health outcomes, and provide practical tips on facilitating a life-long active lifestyle. We will further frame this in the perspective of the new Commission on Accreditation of Rehabilitation Facilities (CARF-International) guidelines for best stroke care.

RISK-ADJUSTED MODELS FOR INPATIENT REHABILITATION QUALITY METRICS PORT ALBERNI (L4)

James Graham, PhD, DC, Kenneth J. Ottenbacher, PhD, OTR, University of Texas Medical Branch (UTMB), Galveston, TX; Anne Deutsch, RN, PhD, CRRN, Rehabilitation Institute of Chicago, Chicago, IL; Trudy R. Mallinson, PhD, OTR/L, NZROT, University of Southern California, Los Angeles, CA

Section 3004 of the Affordable Care Act required the Centers for Medicare and Medicaid Services (CMS) to establish quality reporting programs for inpatient rehabilitation facilities (IRFs). IRFs will be required to report two measures starting in October 2012: rate of catheter-associated urinary tract infections and percentage of patients with new or worsened pressure ulcers. Future indicators may include

readmission rates and functional status measures.

An example of CMS' current quality reporting program is the 30-day risk-standardized rehospitalization rates of short-stay acute care hospitals listed on the Hospital Compare Website. Beginning in October 2012, payments will be reduced for hospitals with higher than expected readmission rates. Hospital-level scores are derived using multilevel modeling techniques. Multilevel modeling has not previously been used in the development of IRF quality metrics.

The broad goal of this symposium is to discuss conceptual and methodological issues related to developing IRF quality metrics, including the utility of the multilevel approach and the challenges associated with rehabilitation-relevant outcomes. We will use the current CMS risk-standardized rehospitalization models as the framework to create similar ratings for inpatient rehabilitation facilities. Criticisms / limitations of the current acute-care models will be noted and anticipated challenges for applying risk-standardized models to IRFs will also be highlighted, with an emphasis on measures of functional independence. Functional status quality metrics are publicly reported for home health agencies based on single data elements. Function status is equally, if not more important for IRFs, and several different approaches to developing such metrics will be discussed.

BI-ISIG TASK FORCE CHAIRS MEETING GALIANO (L4) 5:00 PM - 6:00 PM

EXHIBITOR WELCOME RECEPTION WITH SCIENTIFIC POSTER VIEWING AND OUTSTANDING **POSTER AWARDS PRESENTATION**

5:00 PM - 7:00 PM

PAVILION, JR. BALLROOM & FOYER This poster session will be hosted by onsite poster authors. Therefore, participants may be eligible for Continuing Education credit according to the following criteria.

Earning Continuing Education Credit for Poster Sessions

- Learners are expected to interact with and evaluate a minimum of four posters to earn one CME/CE credit hour. Half-hour increments over one hour will also be accepted.
- It is therefore recommended that you review poster titles in advance and identify at least six posters to visit in a single hour session in case some posters are too busy to review.
- Only hosted poster sessions are eligible for CE credit.
- Review the poster's content, interaction with the poster presenter, and evaluation the poster in the online system to be eligible for .25 CME/CE credit hours.
- Learners who wish to earn more than the minimum one-hour credit, may earn additional credit in half-hour increments.

For example, review four posters to earn the minimum credit of one contact hour; review six posters to earn 1.5 credit hours; review eight posters to earn 2 contact hours, etc.

DAILY SCHEDULE 12 OCTOBER

REGISTRATION DESK OPEN

7:00 AM - 5:00 PM

EXHIBITION OPEN, POSTERS DISPLAYED 8:00 AM - 6:30 PM

STROKE-SIG BUSINESS MEETING

7:15 AM - 8:15 AM PARKSVILLE (L3)

CONCURRENT SESSIONS

7:15 AM - 8:15 AM

COGNITIVE REHABILITATION IN THE NETHERLANDS: RECENT DEVELOPMENTS FINBACK (L3) 7:15 AM - 8:15 AM

Laurien Aben, Rijndam Rehabilitation Centre, Rotterdam, NL; G.M. Ribbers, MD, PhD, Marieke Visser, Erasmus MC, Rotterdam, NL; Ieke Winkens, PhD, Maastricht University School for Mental Health and Neuroscience, Maastricht, NL

In the Netherlands, about 100,000 patients suffer a brain injury every year. Cognitive disorders are a frequent and disabling consequence resulting in a lowered quality of life. Ever since the early 1990's the development and study of cognitive rehabilitation programs is flourishing worldwide.

This symposium will focus on recent developments in cognitive rehabilitation. In 2012 a RCT is finished on the effect of a training program aimed to improve Memory Self Efficacy (MSE) in chronic stroke patients. Preliminary data show an increase in MSE and psychological quality of life in patients of 65 years and younger. The overall results of this RCT with 12 months follow up will be presented and discussed.

Coping strategies are an important determinant of how individuals handle the consequences of stroke. A RCT on the effectiveness of Problem Solving Therapy (PST) for improving coping strategy in sub-acute stroke patients was started. The role of coping after stroke will be discussed; the PST intervention will be presented as well as preliminary results.

Important questions that need to be addressed in rehabilitation practice are whether a patient has sufficient potential to learn, how he learns best, and whether he has sufficient awareness of deficit to learn. In a longitudinal cohort study new instruments for learning and awareness of deficit are developed. These will be presented. Preliminary results on the influence of awareness and learning on success of rehabilitation also will be presented.

MULTIDISCIPLINARY CARE OF THE MULTIPLE SCLEROSIS PATIENT — PART 1 GALIANO (L4)

Samuel Bierner, MD, MRM, Elliot Frohman, MD, PhD, FAAN, Jodie Haselkorn, MD, MPH, Kelli Doern, DPT, University of Texas Southwestern Medical Center, Dallas, TX

CONCURRENT SESSIONS 7:15 AM - 8:15 AM

This symposium is part 1 of a two part series. The focus is multidisciplinary clinical care of the person living with multiple sclerosis. Part 1 concerns the evidence basis for current disease modulation therapies and the evidence for improvement of function. Dr. Elliot Frohman is a nationally recognized researcher and lecturer in this field. The second lecture will be a review of the current state of evidence-based physical therapy treatment for the dysfunctions of the patient with MS.

ACTIVITY-BASED THERAPY FOR RECOVERY OF WALKING IN INDIVIDUALS WITH CHRONIC SPINAL CORD INJURY: RESULTS FROM A RANDOMIZED CLINICAL TRIAL

PORT MCNEILL (L4)

Michael Jones, PhD, Nicholas Evans, MHSc, Shepherd Center, Atlanta, GA; Candace Tefertiller, PT, DPT, ATP, NCS, Craig Hospital, Englewood, CO

"Activity-based" therapy is growing in popularity as an approach to promote neurologic recovery after spinal cord injury (SCI). It involves "interventions that target activation of the neuromuscular system below the level of the lesion, with the goal of retraining the nervous system to recover a specific motor task" (Behrman & Harkema, 2007). While intense physical activity has been shown to improve physiological function and health outcomes in individuals with chronic (> one year post-injury) SCI, the impact on neurologic recovery is not well documented.

In 2009, the investigators initiated a prospective, randomized clinical trial to evaluate empirically the effects of participation in an activitybased therapy program for 50 individuals with chronic, motor incomplete SCI (AIS C or D). The trial examined the effectiveness of an intensive (9-hours/week), 24-week ABT program targeting recovery of walking.

This symposium will present results of the trial in three primary areas: (1) effects of activity-based therapy on recovery of walking and community participation, (2) analysis of "responders" and "non-responders" to provide insight into factors that may help predict who is likely to benefit from activity-based therapy; and (3) analysis of six- and 12-month follow-up data to identify factors associated with the preservation of any gains achieved in recovery of walking.

The symposium will conclude with a discussion of the implications of study findings with respect to: (1) future research, (2) role of activitybased therapy in long term recovery of SCI, and (3) recommendations for individuals with SCI who may be interested in activity-based therapy.

OUTCOMES MEASUREMENT RESOURCES FOR REHABILITATION CLINICIANS GRANVILLE (L4)

Jerry Wright, MS, CBIST, Stephanie A. Kolakowsky-Hayner, PhD, CBIST, Santa Clara Valley Medical Center, San Jose, CA; Katherine Salter, Lawson Health Research Institute, London, ON, CA; Genevieve Pinto Zipp, PhD, PT, EdD, Seton Hall University, South Orange, NJ; Allen W. Heinemann, PhD, Jennifer Moore, PT, DHS, NCS, Rehabilitation Institute of Chicago, Chicago, IL; William C. Miller, PhD, FCAOT, University of British Columbia, Vancouver,

CONCURRENT SESSIONS CONTINUED... 7:15 AM - 8:15 AM

BC, CA; Jane E. Sullivan, PT, DHS, MS, Northwestern University, Chicago, IL

The number and variety of online rehabilitation-related measurement resources has blossomed in recent years, reflecting clinicians' growing interest in and need for reliable, valid, sensitive and brief instruments to document the effectiveness of their services. The websites vary in terms of impairment focus, clinical discipline, and level of psychometric sophistication. Sponsorship of the websites includes professional associations, federal research and training funding, and other sources. The nature and extent of resources to utilize instrument information in clinical practice varies, reflecting the target audience.

This symposium brings together the organizers of several web-based measurement resources. The representatives will describe the Center for Outcome Measurement in Brain Injury organized by the Rehabilitation Research Center at Santa Clara Valley Medical Center, the Stroke Rehabilitation Evidence-Based Review at the University of Western Ontario sponsored by the Canadian Stroke Network, Stroke Edge organized by the American Physical Therapy Association Neuro Section, and the Rehabilitation Measures Database organized by the Rehabilitation Research and Training Center on Improving Measurement of Medical Rehabilitation Outcomes. Representatives will describe the vision, objectives and focus of their websites, the measurement content they provide, training resources, and how information is updated and expanded. Symposium attendees will have the opportunity to provide feedback to organizers of the websites regarding the future development of their online resources.

THE CLINICAL APPLICATIONS OF PEDIATRIC REHABILITATION RESEARCH FROM JUNIOR INVESTIGATORS IN THE FIELD PORT ALBERNI (L4)

Amy Joy Houtrow, MD, MPH, Stacy Suskauer, MD, Kennedy Krieger Institute and Johns Hopkins School of Medicine, Baltimore, MD; Brad Kurowski, MD, University of Cincinnati College of Medicine and Cincinnati Children's Hospital Medical Center, Cincinnati, OH

This presentation will report on research conducted by three junior investigators in pediatric rehabilitation research and identify the clinical applications of this research. Each researcher will present their research findings followed by a discussion of the applicability to clinical care. Learners will understand the applicability of health services, neuroscience, imaging and genomic research on the clinical care of children with disabilities who are cared for in the rehabilitation setting, and will gain an enhanced understanding of emerging research and the impact it makes on clinical care.

DEFINING WHAT WE DO, PART 1: CONCEPTUAL ISSUES IN DEVELOPING A TAXONOMY OF REHABILITATION TREATMENTS ORCA (L3)

Marcel P. J. M. Dijkers, PhD, Jeanne Zanca, PhD, MPT, Mount Sinai School of Medicine, New York, NY; John Whyte, MD, PhD, Andrew Packel, PT, NCS, Moss Rehabilitation Research Institute, Elkins Park, PA Rehabilitation currently lacks a taxonomy of its multiple and diverse treatments and interventions. A theory-based classification of rehabilitation interventions is important in advancing research, clinical practice, and policy. Our attempts, funded by a grant from NIDRR, to classify rehabilitation interventions have provided significant insight about challenges that such a task entails for our multidisciplinary field.

Our three main objectives for this symposium are to (1) present the various conceptual challenges we have identified; (2) describe how we have opted to resolve those problems in our ongoing work; and (3) engage members of the audience in a discussion of the various concepts relevant to treatment taxonomy, and how these concepts apply to the treatments they administer, teach and/or study.

The following core issues will be explored: definition of treatment and the "boundary" between treatments; the nature of the patient and of other persons the therapist may "treat;" treatment theory versus enablement theory; active ingredients and mechanisms of action; the object and the target of treatment and how they relate to therapist intent; the concept of treatment progression; the importance of the environment in which the treatments takes place.

CONCURRENT SESSIONS 8:30 AM - 10:00 AM

MULTIDISCIPLINARY CARE OF THE MULTIPLE SCLEROSIS PATIENT — PART 2 GALIANO (L4)

Elliot Frohman, MD, PhD, FAAN, Samuel Bierner, MD, MRM, Jodie Haselkorn, MD, MPH, Teresa Frohman, PA-C, Kelli Doern, DPT, University of Texas Southwestern Medical Center, Dallas, TX

This symposium is part 2 of a two-part series and will review the current state of evidence-based physical therapy treatment for dysfunctions of the patient with multiple sclerosis. The focus is multidisciplinary clinical care. Teresa Frohman, who has been the director of the MS Center at UT Southwestern, will explain the concept of a medical home for the person with MS and the challenges in actualizing this concept.

Dr. Jodie Haselkorn, MD, MPH, will explain the use of tele-medicine for care of patients with MS based on her experience at the Seattle Veterans Administration Medical Center. Dr. Elliot Frohman will explore the various methods for objective measurement of disease progression in MS and the limitations of each.

DEFINING WHAT WE DO, PART 2: MAJOR TREATMENT THEORY GROUPS AND THEIR ROLE IN A TAXONOMY OF REHABILITATION TREATMENTS ORCA (L3)

Marcel P. J. M. Dijkers, PhD, Theo Tsaousides, PhD, Mount Sinai School of Medicine, New York, NY; Tessa Hart, PhD, Mary Ferraro, PhD, OTR/L, Moss Rehabilitation Research Institute, Elkins Park, PA

FRIDAY

DAILY SCHEDULE

CONCURRENT SESSIONS CONTINUED... 8:30 AM - 10:00 AM

Classifying interventions based on their theoretically-derived active ingredients is a challenging task, but is critical in understanding the ways in which rehabilitation creates change in the bodies, minds, and lives of those we serve. Guided by the principles discussed in Part I of this symposium, we have begun to develop a theory-based rehabilitation treatment taxonomy (RTT). Similar to the Linnaean taxonomies having very broad groupings at the top (kingdoms, classes) and narrow ones at the bottom (species, subspecies), a RTT contains at its highest level a set of broad theory groupings, that include a large number of superficially divergent treatments, with more similar and specific treatments clustered together at the lower levels of the taxonomy.

In this part of the symposium, the rationale for the theory groupings will be presented, and each theory grouping will be described in terms of its hypothesized active ingredients and their mechanism of action, the object of treatment, and progression of treatment to create or enhance its effect to bring about (continuous) increases in function.

Audience members will have the opportunity to apply the theory groupings to existing treatments by identifying their place in the taxonomy, in order to illustrate the groupings and clarify the dimensions along which treatments differ. Further discussion will focus on the goodness of fit between the theory groups of the RTT and existing treatments in order to eliminate classification pitfalls, and on avenues for further differentiation within each of these major groupings.

ORAL PRESENTATION OF SCIENTIFIC PAPERS PORT MCNEILL (L4) MODERATOR: Stephen Page, PhD, MS, MOT, FAHA, Ohio State University Medical Center, Columbus, OH

- Cognitive-Behavioral Prevention of Post-Concussion Syndrome in At-Risk Patients: A Pilot Randomized Controlled Trial; Noah Silverberg, PhD, GF Strong Rehab Centre, Vancouver, BC, CA
- Sports-Related Concussion/mTBI in Adolescents: Structural Brain Changes may Predict Clinical Status; Naznin Virji-Babul, PT, PhD, University of British Columbia, Vancouver, BC, CA
- A Systematic Review of Treatment for Post-Traumatic Brain Injury Fatigue; Shinakee Gumber, PhD, Mount Sinai School of Medicine, New York, NY
- Association of Acute Neuroimaging Abnormalities and Headache in the First Year after Traumatic Brain Injury; Kathleen R. Bell, MD, University of Washington, Seattle, WA

A Randomized, Dual-Center Controlled Trial of Brief Intervention for Problem Alcohol Abuse in Persons with Traumatic Brain Injury; Angelle M. Sander, PhD, Baylor College of Medicine, Houston, TX

PROMOTING ADOPTION OF OUTCOMES DATA COLLECTION IN REHABILITATION PRACTICE GRANVILLE (L4)

Allen W. Heinemann, PhD, Jennifer Moore, PT, DHS, NCS, Allan J. Kozlowski, PT, PhD, Jason Raad, MS, Rehabilitation Institute of Chicago, Chicago, IL;

Joy Hammel, PhD, OTR/L, University of Illinois, Chicago, IL; Chris MacDonell, CARF, International, Tucson, AZ; Alison Hoens, Providence Health Care Research Institute, Vancouver, BC, CA

The capacity to measure rehabilitation outcomes has matured such that researchers and clinicians have access to measures with satisfactory measurement properties for a wide array of constructs. However, clinical practice settings remain slow to adopt instruments measuring these outcomes. Concurrently, the science of implementing research into practice has evolved rapidly. While clinicians now have available a wide array of standardized outcome measures in practice, a range of factors may facilitate and serve as barriers to adoption.

This symposium will highlight the development and early implementation of educational resources that promote adoption of outcome measurement practices by two clinical practice groups: entry level and established practitioners, from disciplines including therapeutic recreation, nursing, prosthetics and orthotics, speech language pathology, occupational therapy, and physical therapy. The primary resource is a course structured in four modules.

Topics include rationales for measurement from healthcare policy and theoretical framework perspectives, understanding measurement properties from a clinical practice perspective, identifying and using resources to assist in selection and use of measures, and identifying and addressing barriers to facilitate sustained implementation. We will provide an overview of the course content and format, describe the development and consultation process, and report survey results from an offering of the course to a multi-disciplinary cohort of practitioners. A panel of and rehabilitation clinicians and scientists will critically debate the course, considering content, audience, and implementation perspectives.

EXERCISE FOR MOOD AND COGNITION: IMPLICATIONS FOR REHABILITATION POPULATIONS PORT ALBERNI (L4)

Charles H. Bombardier, PhD, Jennifer M. Devine, MD, Jeanne Hoffman, PhD, University of Washington School of Medicine, Seattle, WA

Cognitive and mood impairments are significant sources of long-term disability for many populations followed by rehabilitation providers. Patients with neurological diseases such as multiple sclerosis and traumatic brain injury are frequently refractory to conventional pharmacologic and behavioral therapies for mood and cognitive disorders. Thus there is significant need for novel, adjunctive treatments. Aerobic exercise has been shown to improve mood in a broad range of populations, and is linked to better cognition in several groups at risk for cognitive decline, including normal aging and those with early stages of dementia. Higher levels of aerobic fitness are also associated with improved vitality in older working populations, suggesting a link between aerobic activity and occupational function. As exercise grows in popularity as an experimental treatment for cognitive and mood disorders in other disease models, its efficacy and feasibility for rehabilitation populations is also under study.

DAILY SCHEDULE 12 OCTOBER

FRIDAY

CONCURRENT SESSIONS

CONTINUED... 8:30 AM - 10:00 AM

This symposium will give participants an understanding of the underlying mechanisms by which exercise is thought to improve cognition and mood, and an appreciation for how this could be relevant to rehabilitation populations. We will discuss experimental evidence in basic science and human models of exercise in healthy aging and cognitive decline, and present current and recent research applying exercise interventions to patients with MS and TBI. Strengths, limitations and future research will be discussed, along with the clinical implications of this work.

DEBORAH L. WILKERSON EARLY CAREER AWARD



CLOSING THE GAP: EARLY INTERVENTION FOR COGNITIVE DISABILITY AFTER STROKE

9:00 AM - 10:00 AM GRAND BALLROOM A

MODERATOR: Phil Morse, PhD, FACRM, Neurobehavioral Services of New England, Portland, ME

FACULTY: Deirdre R. Dawson; Ellen M. Whyte; Margo B. Holm; James T. Becker Award winner and presenter: Elizabeth R. Skidmore, PhD, OTR/L "Closing the Gap: Early Intervention for Cognitive Disability after Stroke"



Elizabeth R. Skidmore. PhD, OTR/L

NETWORKING BREAK | EXHIBITION

10:00 AM - 10:30 AM PAVILION, JR. BALLROOM & FOYER

BI-ISIG LONG TERM ISSUES TASK FORCE MEETING

10:30 AM 11:30 AM FINBACK (L3)

PLENARY SESSION

10:30 AM - 12:00 PM GRAND BALLROOM A

HOW CAN BRAIN IMAGING AND STIMULATION INFORM **REHABILITATION?**

How does the brain recover from disease or damage? Neuroimaging is offering novel insights into the structure, function and physiology of neuroplastic processes associated with rehabilitation. Recent advances in brain imaging and stimulation offer the ability to better understand how to best stimulate positive neural reorganization to promote restoration of function following neurologic injury.

This symposium will first highlight cutting-edge research showing changes in both the structure and function of grey and white matter structures following neurologic insult. Recent data demonstrating disruptions in white matter tract organization and physiological

shifts in brain excitability associated with both stroke and recovery of function will be discussed. Next, the presenters will show how advanced neuroimaging offers the ability to discover how different interventions, including non-invasive brain stimulation, may facilitate recovery from neurologic disease and damage. Finally, presenters will offer insights and stimulate a discussion regarding how changes in brain function and structure may help or hinder recovery after various types of neurologic conditions.

Lara Boyd, MPT, PhD œ

- Dr. Boyd is the Canada Research chair in
- neurobiology, a Michael Smith Founda-
- A A tion for Health Research scholar, and an
- associate professor in the Department of Physical Therapy, Faculty of Medicine at
- the University of British Columbia. She holds a degree in neuroscience and is also a physical therapist. Dr. Boyd directs the



Brain Behaviour Lab at the University of British Columbia, N A R which is dedicated to furthering understanding of how brain and behaviour are related. She is an expert in neuroimaging and neurophysiology, and uses a variety of cutting edge ш technology in her research. Dr. Boyd is a world leader in the field of neurological rehabilitation and has published over 50 peer-reviewed papers concerning rehabilitation, motor learning and/or brain imaging.



Teresa Kimberley, PhD, PT

Dr. Kimberley is an assistant professor at the University of Minnesota in the Department of Physical Medicine and Rehabilitation, Program in Physical Therapy. She co-directs the Brain Plasticity Lab, which helped to pioneer the use of neuroimaging to inform and improve rehabilitation. Her training in



physical therapy, rehabilitation and neuroscience has helped to refine neuroimaging and neuromodulation techniques in populations with stroke and focal dystonias.

Michael Borich, PhD

Dr. Borich is a post-doctoral research fellow in the Brain Behaviour Laboratory at the University of British Columbia. Dr. Borich holds a degree in rehabilitation science and also a clinical degree in physical therapy. His areas of expertise include white matter imaging, transcranial magnetic stimulation.



and motor learning in healthy individuals and individuals with neurologic injury or disease. He is currently utilizing pioneering neuroimaging techniques to measure specific in vivo changes in myelin after stroke and in response to skilled motor training.

DAILY SCHEDULE 12 OCTOBER

COMMUNICATIONS COMMITTEE

11:00 AM - 12:00 PM AZURE (L3)

SPECIAL EVENT

SCI-SIG LUNCHEON WITH PANEL DISCUSSION

(TICKETED EVENT) 12:00 PM - 1:30 PM GRAND BALLROOM C



MOVING EVIDENCE INTO SCI CLINICAL PRACTICE: CHALLENGES AND OPPORTUNITIES

This facilitated panel discussion will include perspectives from an individual with SCI, a clinician, a scientist, and a clinical-scientist, and a period to answer audience questions.

BI-ISIG DISORDERS OF CONSCIOUSNESS TASK FORCE MEETING

12:00 PM - 1:30 PM FINBACK (L3)

BI-ISIG GIRLS AND WOMEN WITH TBI TASK FORCE MEETING

12:00 PM - 1:30 PM PARKSVILLE (L3)

CONCURRENT SESSIONS

1:30 PM - 3:00 PM

NEUROMODULATORY REHABILITATION: STROKE MOTOR RECOVERY AND BEYOND ORCA (L3)

Ela Plow, PhD, PT, Andre Machado, MD, Cleveland Clinic, Cleveland, OH; Dylan Edwards, PhD, PT, Mar Cortes, PhD, Burke Medical Research Institute, Cornell University, White Plains, NY; Daniel Ciampi de Andrade, MD, Instituto do Câncer do Estado de São Paulo, São Paulo, BR; Marom Bikson, PhD, City College of New York, New York, NY

We will discuss evidence-based approaches in neurorehabilitation that employ promising therapeutic modalities of neuromodulation, including noninvasive and deep brain stimulation. The popularity of cerebral neuromodulation emerges from its ability to selectively enhance, suppress or restore activity of targeted and interconnected networks to promote functionally-adaptive plasticity. Despite mounting evidence for efficacy and high margin of safety observed in pre-clinical/phase I studies, translation to phase II/III clinical trials remains challenging, hindering clinical utility.

In discussing current clinical and translational research, we identify challenges and lingering questions, and propose advancements for the future. (1) Enhancing and accelerating the benefit from neuromodulation in stroke by strategically associating it with rehabilitation in online (Plow) versus priming (Edwards) paradigms. (2) Maximizing post-stroke recovery by defining ideal neuromodulatory loci-residual, surviving primary cortices (Plow, Edwards) versus remote yet interconnected pathways (Machado). (3) Investigating variability of mechanisms to understand differential responsiveness, such as

CONCURRENT SESSIONS 1:30 PM - 3:00 PM

targeting loci that modify perception (Ciampi) versus suffering and disability (Machado) in chronic pain. (4) Broadening clinical applicability to conditions other than post-stroke motor deficits, as hemianopia (Plow), chronic neuropathic pain (Ciampi and Machado), spinal cord injury (Cortes), traumatic brain injury and craniectomy (Bikson). (5) Mitigating methodological confounds in 'ideal' clinical trial designs of neuromodulation (Ciampi). (6) Directing future designs by developing patient-specific neuromodulation based on state-of-the-art computational modeling of electrical field relative to lesions (Bikson). Thus, our multi-disciplinary panel will suggest, in an interactive point-counterpoint format, strategies to improve scientific rigor in preparation for forthcoming trials and direct generalization of neuromodulation to practice.

AN EVIDENCE-BASED APPROACH TO TREATMENT OF IMPAIRED EMOTION RECOGNITION AMONG INDIVIDUALS WITH TBI GALIANO (L4)

Barry Willer, PhD, State University of New York, Buffalo, NY; Dawn Neumann, PhD, MA, Rehabilitation Hospital of Indiana, Indianapolis, IN; Duncan Babbage, PhD, Massey University, Wellington, NZ; Barbra Zupan, PhD, Brock University, St. Catharines, ON, CA; Machiko R. Tomita, PhD, University at Buffalo, Buffalo, NY

A necessary component of managing interpersonal relations is recognizing and understanding the emotional state of others. Approximately one third of individuals with traumatic brain injury (TBI) are impaired in emotion recognition. The presenters developed and evaluated two interventions designed to improve emotion recognition. One intervention involved teaching participants how to recognize emotions in the facial expressions of others. The second intervention presented short stories with the goal of teaching participants to infer emotions based on contextual clues. Both interventions are computer assisted and designed to be consistent and replicable. The interventions will be described as part of the symposium.

Treatment program evaluation consisted of a NIDRR funded randomized clinical trial (RCT) with a (placebo type) control group receiving the same number (9) of one-on-one sessions with a therapist as the treatment groups. The research took place in three locations: in Canada, New Zealand and the USA. Two hundred people with severe TBI were assessed. Seventy four (37%) showed sufficient impairment in emotion recognition to qualify for treatment in the RCT. Results indicated that one of the treatments was effective. Interestingly, the key treatment benefit was observed most strongly at six month follow up, suggesting that participants enhanced their new skills post treatment. This symposium represents the first presentation of treatment outcome results from the study. The presenters will describe the research methods including emotion recognition assessment measures, outcome measures, strengths and weakness of the study design and benefits of both treatment approaches.

FRIDAY

DAILY SCHEDULE

CONCURRENT SESSIONS CONTINUED... 1:30 PM - 3:00 PM

HEALTH AND FITNESS BENEFITS OF FUNCTIONAL ELECTRICAL STIMULATION FOR PEOPLE WITH SCI PORT MCNEILL (L4)

Therese E. Johnston, PT, PhD, MBA, University of the Sciences, Philadelphia, PA; Deborah Backus, PT, PhD, Shepherd Center, Atlanta, GA; Kevin McCully, PhD, University of Georgia, Athens, GA

This symposium will focus on the evidence for the use of functional electrical stimulation (FES) to improve health and fitness for adults and children with spinal cord injury (SCI). FES is becoming more widely used in the clinical environment and evidence is critical to guide our approach to FES to allow for optimal benefits in cardio-vascular, metabolic, and musculoskeletal health. There currently is some evidence available that can guide clinicians in designing an exercise program with FES.

This symposium will address many aspects of FES use in the clinic, specifically focusing on (1) the physiological differences between volitional and electrically stimulated contractions and why these are important, (2) the issue of fatigue and techniques to minimize it, (3) the evidence that does exist for health and fitness benefits of specific applications of FES including its use for cycling, walking and resistance training, and (4) information that is currently available that can help to guide clinicians as to which patients may benefit from these different FES interventions.

Finally this session will discuss the needs for future research to address the limitations in current knowledge, as many questions remain to be answered about benefits and characteristics of those consumers who may best benefit from specific FES interventions.

VALIDATION OF NEW MEASURES OF PATIENT REPORTED OUTCOMES FOR REHABILITATION MEDICINE GRANVILLE (L4)

David Tulsky, PhD, Anna L. Kratz, PhD, Claire Z. Kalpakjian, PhD, University of Michigan, Ann Arbor, MI; Stephanie A. Kolakowsky-Hayner, PhD, CBIST, Santa Clara Valley Medical Center, San Jose, CA

New outcome measures show potential to enhance research and practice in rehabilitation medicine. The PROMIS was developed as an innovative system of assessing patient reported health and quality of life using advanced psychometric theory and innovative technology (computer adaptive testing; CAT). Several related projects pursuing similar goals, except targeted to individuals with spinal cord injury (SCI), traumatic brain injury (TBI), and other neurologic diseases or impairments (e.g., stroke, epilepsy, multiple sclerosis) have been conducted.

The SCI-QOL and TBI-QOL measurement systems were developed through multisite projects utilizing advanced qualitative and quantitative research methods, involving over 800 individuals with SCI and over 600 individuals with TBI. Like PROMIS, IRT and CAT technology were employed and the CAT instruments are available along with PROMIS on the Assessment Center website. Through extensive qualitative and quantitative procedures (involving item response theory and differential item functioning), the scales have strong evidence of content validity. Recently, criterion-related validity has been demonstrated in three independent studies (with children with cerebral palsy, adults with traumatic SCI, and adults with traumatic TBI). Participants completed the newly developed instruments along with several criterion measures.

Additionally, efforts have been undertaken to co-calibrate and equate the PROMIS, SCI-QOL, and TBI-QOL measures of depression and anxiety with traditional instruments like PHQ-9 and GAD-7. All of these efforts mark the first steps toward marshaling evidence of construct validity to support the use of these scales in rehabilitation research and clinical practice. This presentation will present the latest data demonstrating the validity of these scales.

UPDATE ON A FEDERAL INTERAGENCY INITIATIVE TO ESTABLISH RECOMMENDATIONS FOR USE OF COMMON DATA ELEMENTS IN TBI RESEARCH PORT ALBERNI (L4)

Joseph T. Giacino, PhD, Spaulding Rehabilitation Hospital, Boston, MA; Ramona Hicks, PhD, National Institute of Neurological Disorders and Stroke (NINDS), Bethesda, MD; Elisabeth A. Wilde, PhD, Baylor College of Medicine, Houston, TX; Cindy Harrison-Felix, PhD, Craig Hospital, Englewood, CO; Alex Valadka, MD, Seton Brain and Spine Institute, Austin, TX

The pace of research on traumatic brain injury (TBI) has increased substantially over the last decade largely as the result of increased attention emanating from the military conflicts in Iraq and Afghanistan, and growing awareness of the long-term sequelae of sportsrelated concussion. There are now more than 600 TBI studies listed on clinicaltrials.gov, yet, no guidelines exist to govern the selection of data elements required for population surveillance, subject characterization, clinical assessment, treatment classification or outcome determination. Methodologic heterogeneity limits comparability across studies and is neither prudent scientifically nor fiscally.

To address this problem, a federal interagency initiative was introduced in 2009 to identify a set of common data elements (CDEs) for use across TBI studies. The first phase of this project culminated in consensus-based recommendations for data elements pertaining to demographics, clinical assessment, neuroimaging, biomarkers and outcome measures (see Archives of PM&R 2010, 91[11]). CDE's identified in phase 1 were designated as "core", "supplemental" or "emerging," depending on their track record in TBI research and degree of applicability across study aims.

Because the CDE initiative was intended to follow an iterative process, phase 2 was launched in 2011 with the goal of refining the initial recommendations. This symposium will review the history and rationale behind the CDE initiative, discuss differences in the organizational framework and operational procedures between CDE 1 and 2, and present the revised CDE recommendations. Throughout the symposium, participants will be invited to provide feedback and offer suggestions regarding both the CDE process and current recommendations.

12 OCTOBER

ORAL PRESENTATION OF SCIENTIFIC PAPERS

GRAND BALLROOM A

FRIDAY

MODERATOR: Pamela Roberts, PhD, OTR/L, SCFES, CPHQ, FAOTA, Cedars Sinai Medical Center, Los Angeles, CA



 Effectiveness of Home/Community-Based Rehabilitation for 738 Patients with Stroke: Evidence of a Dose-Response Relationship; James F. Malec, PhD, ABPP-CN, RP, FACRM Indiana University Medical School/Rehabilitation Hospital of Indiana, Indianapolis, IN

Post-Stroke Exercise: Effects on Cardiovascular Risk, Fitness and Function; Ada Tang, PT, PhD, University of British Columbia, Vancouver, BC, CA

Balance Impairment is Associated with Decreased Quality of Life in People with Chronic Stroke; Arlene A. Schmid, PhD, OTR, Indiana University/Roudebush VAMC, Indianapolis, IN

 Patients with Hemi-Spatial Neglect are More Prone to Limb Spasticity, but the Former Prolong Hospital Stay; Mohamed Sakel, FRCP, East Kent University Foundation Hospitals NHS Trust, Canterbury Kent, CT

Executive Dysfunction Immediately Post Mild-Stroke; Timothy Wolf, OTD, MSCI, OTR/L, Washington University School of Medicine, St. Louis, MO

NETWORKING BREAK | EXHIBITION

3:00 PM – 3:30 PM PAVILION, JR. BALLROOM & FOYER

ORAL PRESENTATION OF SCIENTIFIC PAPERS

3:30 PM – 5:15 PM GRAND BALLROOM B MODERATOR: Deborah Backus, PT, PhD, Shepherd Center, Atlanta, GA

- Treatment of Mild to Moderate Depression in Persons with SCI: A Randomized Clinical Trial; Denise G. Tate, PhD, FACRM, University of Michigan, Ann Arbor, MI
- Comparing Rehabilitation Outcomes Between Older and Younger People with SCI; Chinghui Jean Hsieh, PhD, Center for Post-Acute Innovation & Research, National Rehabilitation Hospital, Washington, DC
- Tongue Drive System: Evaluation of Novel Technology and Comparison to Existing Assistive Technology Control Methods; Elliot J. Roth, MD, Northwestern University Feinberg School of Medicine, Chicago, IL
- The Impact of Locomotor Training on Cardiovascular Parameters in Patients with Incomplete Spinal Cord Injury; Sue Ann Sisto, PT, MS, PhD, FACRM, Stony Brook University, Stony Brook, NY; Douglas Lorenz, PhD; Karen Hutchinson, PT, DPT, PhD; Lisa R. Wenzel, MD; Susan J. Harkema, PhD; Andrei Krassioukov, MD, PhD, FRCPC
- An Experimental Study of the Impact of Assistive Technology on Users and their Informal Caregivers; Ben Mortenson, OT, Simon Fraser University, Vancouver, BC, CA
- Correlates of Participation in Patient Satisfaction Survey among Stroke Patients of Inpatient Rehabilitation; Mooyeon Oh-Park, MD, Kessler Foundation Research Center, West Orange, NJ

CONCURRENT SESSIONS

3:30 PM - 5:00 PM

★SPECIAL EVENT

STROKE SPECIAL TOPICS SESSION

"TRANSLATING RESEARCH INTO CLINICAL PRACTICE: THE GRASP PROGRAM" PORT MCNEILL (L4)

Sponsored by the ACRM Stroke Special Interest Group

MODERATOR: Janice Eng, PT, PhD, University of British Columbia, Vancouver, BC, CA; **PANELISTS:** Linda Boronowski, OT Reg, Sarah Rowe, PT, GF Strong Rehabilitation Centre, Vancouver, BC, CA; Drew Dawson, MD, Fraser Health, Surrey, BC, CA

This panel presentation will describe the uptake of a self-directed inpatient hand and arm exercise program for stroke (Graded Repetitive Arm Supplementary Program-GRASP). The team will describe the development of the program and evidence resulting from the multisite clinical trial. The team will also discuss barriers and facilitators to implementing the intervention in the clinical setting.



Janice Eng, PT, PhD

RESTORATIVE NEUROLOGY OF SPINAL CORD INJURY: NEUROBIOLOGICAL PROBLEM AND NOVEL METHODS FOR ASSESSMENT AND INTERVENTION ORCA (L3)

Keith Tansey, MD PhD, Barry McKay, Shepherd Center, Atlanta, GA; Justin Brown, MD, University of California, San Diego, San Diego, CA

Little work has linked the neurophysiology of the injured spinal cord to its capacity to express the sensorimotor control needed for functional recovery. Nor has the field focused effort on improving neurorehabilitation to address specific sensorimotor control profiles across our patients. This is related to most clinical assessment tools only characterizing how well a patient performs a behavior, the speed of walking for instance. Slow walking could be due to weakness despite normal patterns of muscle activation OR because of disordered muscle activation (co-contractions, dysynergias) with normal strength. It is unlikely that a single intervention would help both of these sensorimotor control profiles. Therefore, it will be important to characterize and follow features of sensorimotor control, and their capacity for plasticity in the face of therapeutic intervention, to best develop future neurorehabilitation strategies. Work has now been started from this new frame of reference.

In the symposium, Tansey, a neurologist, will review what SCI means for neural circuits above, across, at and below the level of injury. Next, McKay, a research electrophysiologist, will report how the Brain Motor Control Assessment characterizes and tracks changes in spinal cord neurophysiological profiles. Brown, a neurosurgeon, will then describe surgical approaches to restoring function, including peripheral nerve reconnections to re-establish voluntary control of muscles below the SCI. Finally, Tansey will report on activity based therapies to engender plasticity and functional recovery and how they could be augmented, specifically by spinal cord stimulation.

FRIDAY

DAILY SCHEDULE

CONCURRENT SESSIONS CONTINUED... 3:30 PM - 5:00 PM



WRESTLING WITH HYPNOS: SLEEP, WAKE, AND FATIGUE AFTER TBI GRANVILLE (L4)

Joshua Cantor, PhD, Mount Sinai School of Medicine, New York, NY; Mo Modarres, PhD, Draper Bioengineering Center at USF, Tampa, FL; Risa Nakase-Richardson, PhD, James A. Haley Veterans Hospital, Tampa, FL; Stuart A. Yablon, Baylor Institute for Rehabilitation, Dallas, TX

Sleep-wake disorders and fatigue are prevalent across the traumatic brain injury (TBI) injury severity spectrum. These disturbances are associated with significant morbidity, distress, and poor outcome. The evolution and relationship of sleep-related disturbances and fatigue across the continuum of recovery is poorly understood.

The purpose of this symposium is to facilitate discussion of the sleep-wake and fatigue disturbances as they manifest in different stages of recovery from TBI with presentations from experts in sleep assessment and analysis, acute neurobehavioral recovery, neurofatigue in the post-acute setting, and TBI clinical research physiatry.

The first presentation will review core concepts in sleep medicine assessment as they apply to TBI (i.e., objective vs. subjective measurement of sleep disturbances and daytime hypersomnolence/ fatigue) and discuss future directions of novel assessment techniques (e.g., spectral analysis).

The second presentation will highlight several study findings of acute neurotrauma admissions with a high prevalence of sleep-wake disorder disturbances (i.e., irregular circadian rhythm) and relationship to outcome (i.e., participation in therapy, cognition, length of stay).

The third presentation will highlight findings from a multicenter longitudinal study of emergence/course of insomnia and fatigue following TBI.

The final presentation will provide an overview of key problems that face rehabilitation researchers and clinicians attempting to address post-TBI sleep disorders and fatigue.

COMPARATIVE EFFECTIVENESS RESEARCH: AN INTRODUCTION FOR REHABILITATION SPECIALISTS GALIANO (L4)

Marcel P. J. M. Dijkers, PhD, Mount Sinai School of Medicine, New York, NY; Ronald T. Seel, PhD, Shepherd Center, Atlanta, GA; Susan Horn, PhD, International Severity Information Systems, Inc., Salt Lake City, UT

The Institute of Medicine has defined Comparative Effectiveness Research (CER) as "the generation and synthesis of evidence that compares the benefits and harms of alternative methods to prevent, diagnose, treat, and monitor a clinical condition or to improve the delivery of care. Its purpose is to assist consumers, clinicians, purchasers, and policy makers to make informed decisions that will improve health care at both the individual and population levels." The escalating costs of health care, its varying levels of quality, regional and local differences in type and quantity of treatments (practice variations), and the costs of research that does not contribute to direct comparison of benefits and harms have been the impetus for the emphasis on CER in the U.S., Great Britain, and Canada. While rehabilitation research has always been more practical than much research in other fields of health care, we cannot claim that CER is a superfluous concept in rehabilitation.

This symposium offers an introduction to CER, addressing the following issues: (a) the nature of and reasons for CER; (b) current CER governmental efforts in North America and Europe; (c) designs for CER research; (d) databases with rehabilitation-relevant information that can be used for CER; (e) statistical issues in the analysis of observational data: propensity scores, instrumental variables, matching, subgroup analyses, etc.; and (f) CER based on published research: the systematic review approach, meta-analysis with or without indirect comparison of interventions, and practice-based evidence. Discussion will focus on issues common to CER in rehabilitation across governmental systems.

TRAUMATIC BRAIN INJURY RESEARCH: A PUBLIC HEALTH PERSPECTIVE PORT ALBERNI (L4)

Jeffrey Cuthbert, MPH, MS, Craig Hospital, Englewood, CO; Jeneita Bell, MD, MPH, Bill Pearson, PhD, Centers for Disease Control and Prevention (CDC), Atlanta, GA; John D. Corrigan, PhD, Ohio State University, Columbus, OH; Cindy Harrison-Felix, PhD, University of Colorado, Denver, CO

Each year, an estimated 1.7 million people sustain traumatic brain injury (TBI) in the US. TBIs contribute to almost one-third (30.5%) of all injury-related deaths (52,000), while another 275,000 are severe enough to require hospitalization; some also require inpatient rehabilitation and some have permanent disability. This is a growing public health concern; hospitalizations related to TBI have risen 19.5% between 2002 and 2006 and even mild TBIs, or concussions, may carry long-term consequences if poorly managed.

TBIs impact the lives of individuals and their families, and take a large economic toll on society. In 2010, direct and indirect medical costs of TBI were estimated to be approximately \$76.5 billion, with fatal TBIs and TBIs requiring hospitalization accounting for 90% of the costs.

As a result of these substantial economic and societal costs, the Centers for Disease Control and Prevention (CDC) is collaborating with partners in the field of TBI research to further understand the consequences throughout the life course, including outcomes associated with TBI rehabilitation.

This presentation will provide an overview of how the United States Congress has engaged the CDC to focus research efforts on TBI and review results from collaborative studies between the CDC and

FRIDAY 12 OCTOBER DAILY SCHEDULE SATURDAY 13 OCTOBER

the Traumatic Brain Injury Model Systems (TBIMS) at the National Institute on Disability and Rehabilitation Research. Recent data on the representativeness of the cohort of rehabilitation patients in the TBIMS longitudinal dataset have allowed better estimation of the long-term public health burden associated with all TBI requiring inpatient rehabilitation in the US.

ACRM MEMBERSHIP MEETING

5:00 PM - 6:30 PM GRAND BALLROOM C

SPECIAL EVENT

PAST PRESIDENTS RECEPTION

(BY INVITATION ONLY) 6:45 PM - 7:15 PM GRAND BALLROOM A/B

HENRY B. BETTS AWARDS GALA

(TICKETED EVENT) 7:15 PM - 10:00 PM GRAND BALLROOM A/B



Get your tickets early for the biggest ACRM celebration of the year — a conference favorite! Come raise a glass to the 2012 award winners and connect with friends and colleagues in a casual setting. Party to the timeless, feel-good sound of the Swedish pop/rock group, ABBA, as performed by tribute band, ABRA Cadabra. It's going to be a night to remember.

SATURDAY 13 OCTOBER

REGISTRATION DESK OPEN

7:00 AM - 12:00 PM

POLICY AND LEGISLATION COMMITTEE

7:30 - 8:30 FINBACK (L3)

PROGRAM COMMITTEE MEETING 7:30 - 8:30 AZURE (L3)

EXHIBITION OPEN, POSTERS DISPLAYED 8:00 AM - 12:00 PM

BI-ISIG PROGNOSIS AFTER TBI TASK FORCE MEETING 7:30 AM - 8:30 AM PARKSVILLE (L3)

NIDRR-SPONSORED ARRT YOUNG INVESTIGATORS PANEL

8:00 AM - 10:00 AM GRAND BALLROOM A partnership with ACRM_NIDRR sele

In partnership with ACRM, NIDRR selects five ARRT Fellows to present research relevant to the ACRM mission and audience.

COURSE DIRECTORS: ALLEN W. HEINEMANN, PHD, Director, Center for Rehabilitation Outcomes Research and Associate Director of Research, Rehabilitation Institute of Chicago; Professor, Department of Physical Medicine and Rehabilitation, Feinberg School of Medicine, Northwestern University, Chicago, IL; **RUTH W. BRANNON, MSPH, MA**, Director, Research Sciences Division, National Institute on Disability and Rehabilitation Research, Washington, DC

1) DIFFERENTIAL RECRUITMENT OF LISTENING STRATEGIES FOR AUDITORY RHYTHMS IN PARKINSON DISEASE

NIDRR ARRT FELLOW: Nathaniel S. Miller, PhD, University of Michigan, Ann Arbor, MI

OBJECTIVE: Impaired generation of an internal rhythm (or 'beat') is hypothesized to underlie the irregular timing of gait and speech in Parkinson disease (PD; Freeman, Cody & Schady, 1993). Here, we test this hypothesis by determining whether individuals with PD favor a non-beat, as opposed to beat-based, listening strategy for auditory rhythms compared to controls.

RESULTS: Individuals with PD recruit a non-beat based listening strategy more often than controls. Moreover, sequence discrimination thresholds do not explain this difference.

CONCLUSIONS: These data provide additional support for impairments in internal beat generation in PD. Additionally, this study lays the groundwork for the investigation of relationships between temporal processing strategies and the motor symptoms of PD that may inform rehabilitation.

SATURDAY

DAILY SCHEDULE

NIDRR-SPONSORED ARRT YOUNG INVESTIGATORS PANEL

2) ELUCIDATING THE NEUROBIOLOGY OF SELF-REPORTED FATIGUE IN MULTIPLE SCLEROSIS (MS): THE INTERPLAY OF NETWORKS

NIDRR ARRT FELLOW: Abhijit Das, MBBS, MD, DM, Kessler Foundation Research Center, West Orange, NJ

OBJECTIVE: To examine the correlation between fractional anisotropy (FA), a measure of white matter integrity (WMI), and self-reported fatigue in patients with multiple sclerosis (MS).

RESULTS: The MFIS-physical sub-score (21.2 ± 8.1) correlated positively with FA scores in bilateral cingulate; and correlated negatively with bilateral precuneus. The MFIS-cognitive sub-score (22.1 \pm 7.4) correlated positively with FA scores in WM tracts of bilateral basal ganglia; and correlated negatively with right insula. The MFIS-psychosocial sub-score (4.3 \pm 1.9) correlated positively with FA scores in WM tracts of right caudate; and correlated negatively with right insula.

CONCLUSIONS: These findings suggest that 1) cognitive and psychosocial fatigue seem to rely on the same network, and 2) this is different from the network underlying physical fatigue. This fractionation represents a significant breakthrough in understanding the neurobiology of self-reported fatigue.

3) DEVELOPMENT AND EVALUATION OF A TERRAIN DEPENDENT ELECTRICAL POWERED WHEELCHAIR DRIVER ASSISTANCE SYSTEM

NIDRR ARRT FELLOW: Hongwu Wang, PhD, University of Pittsburgh, Pittsburgh, PA

OBJECTIVE: Develop an electrical powered wheelchair (EPW) driver assistance system to improve the performance of EPWs, to decrease the chances of falls and tip over, and to increase the community participation and quality of life of users.

RESULTS: An add-on package to commercial EPWs has been designed and developed where the sensing components can detect different terrains as well as EPW driving parameters, and a tablet computer can record performance variables. Experimental tests with different driving rules on different terrains showed that EPWs require different driving rules on individual terrains to improve their handling performance. A user study with ten able-body subjects confirmed the experimental test results and showed that performance variables agreed with user perceived ratings. Another user study with ten EPW users is planned in May where the system with terrains sensing and automated switching of driving rules will be evaluated.

CONCLUSIONS: An add-on terrain dependent EPW driver assistance system with developed driving rules will improve the EPW performance and provide better user experience on different terrains. With this system, the challenges related to hazardous terrains for EPW users could be minimized, thus their community participation will be increased. Furthermore, the add-on system could allow clinicians to better understand and evaluate driving performance of EPW

users with quantitative data, enhancing the evidence-based practice for EPW prescription and clinical practice.

4) EFFECTIVENESS OF OFF-AXIS TRAINING ON IMPROVING KNEE FUNCTION IN INDIVIDUALS WITH PATELLOFEMORAL PAIN

NIDRR ARRT FELLOW: Liang-Ching Tsai, PhD, PT, Northwestern University/Rehabilitation Institute of Chicago, Chicago, IL

OBJECTIVE: Patellofemoral pain (PFP) is thought to be associated with altered patellofemoral mechanics due to impaired neuromuscular control of the lower extremity, particularly on the frontal and transverse planes (i.e., off-axis motions). The purpose of this study was to examine the effectiveness of an off-axis training program on improving knee pain and function in individuals with PFP.

RESULTS: On average, subjects reported a higher KOOS and IKDC score following the 6-week off-axis training program. Decreased variability of the FRA and FSD were also observed post-training.

CONCLUSIONS: An off-axis training program using a robotic elliptical trainer was effective in enhancing lower extremity neuromuscular control on the frontal and transverse planes. The enhanced off-axis neuromuscular control post-training was accompanied by a reduction in knee pain and improvement in knee function in persons with PFP.

5) LEG PREFERENCE ASSOCIATED WITH PROTECTIVE STEPPING RESPONSES TO WAIST-PULL PERTURBATIONS OF STANDING BALANCE IN OLDER ADULTS

NIDRR ARRT FELLOW: Patricia M. Young, PhD, University of Maryland School of Medicine, Baltimore, MD

OBJECTIVE: To determine whether leg preference influenced the stepping response to a waist-pull perturbation of older adults at risk for falls.

RESULTS: Mean number of recovery steps taken increased in response to increased perturbation magnitude for all subjects, regardless of whether the perturbation was to the preferred or non-preferred side. Low fall-risk subjects took lateral side steps when pulled to their preferred side and cross-over steps when pulled to their non-preferred side. In contrast, high fall-risk subjects frequently took more lateral steps when pulled to their non-preferred side. Variability of minimum margins of stability at first-step touchdown was greater for pulls to the non-preferred side for high fall-risk older adults.

CONCLUSIONS: Leg preference may influence the protective stepping response to standing balance perturbations in older adults at risk for falls. Such asymmetries in balance stability recovery may represent a previously unrecognized precipitating factor for falls among older individuals and should be considered for rehabilitation interventions aimed at improving balance stability and reducing the risk of falls.

DAILY SCHEDULE 13

CONCURRENT SESSIONS

8:30 AM - 10:00 AM

PUTTING TBI COMMON DATA ELEMENTS INTO PRACTICE ORCA (L3)

David S. Tulsky, PhD, University of Michigan, Ann Arbor, MI; Ramona Hicks, PhD, National Institute of Neurological Disorders and Stroke (NINDS), Bethesda, MD; David O. Okonkwo, MD, PhD, University of Pittsburgh, Pittsburgh, PA; Thomas J. DeGraba, MD, National Intrepid Center of Excellence (NICoE), Bethesda, MD

Traumatic brain injury (TBI) remains one of the greatest public health needs. Measurement limitations impede efforts to translate advances in basic science or hinder researchers' ability to detect meaningful changes that are the result of a successful clinical trial or new treatment for TBI patients. The inconsistency in the selection and use of outcome and demographic measures make it even more difficult to interpret findings between studies. For this reason, an interagency initiative sought to identify and recommend common data elements (CDEs) for use in research and practice with individuals with TBI.

The recommended CDEs include standardized definitions and protocols for collecting data, as well as core tools for TBI research. If followed, the CDEs would facilitate data sharing. The recommendations were published in a series of articles in the Archives of Physical Medicine and Rehabilitation (2010, Vol. 91[11]). While making recommendations, the committees recognized that the field is not stagnant and that several new measures show promise of being more sensitive and cost-effective, but did not have sufficient validation data at the time of the initial meeting.

This symposium will discuss the CDE recommendations and advances. The initial presentation will provide an overview of the CDE initiative and the recommendations. The second session will describe an ambitious multi-site collaborative project (TRACK TBI) to evaluate the ease of implementation of the recommendations in research. The third presentation discusses the emerging measures that hold promise to improve TBI research. The final presentation describes a complementary project to TRACK-TBI in the DoD which is testing CDE's in practice with individuals with mild TBI. A new federated database for TBI research will be described, which is a natural extension of the Common Data Elements Project.

STRATEGY USE IN COGNITIVE REHABILITATION GALIANO (L4)

Yael Goverover, PhD, OT, New York University, New York, NY; Joan Toglia, PhD, OTR, Mercy College, Dobbs Ferry, NY; Deirdre R. Dawson, PhD, University of Toronto, Toronto, ON, CA; Denise Krch, PhD, Kessler Foundation Research Center, West Orange, NJ

Cognitive rehabilitation enhances a person's capacity to process and interpret information, with the purpose of improving one's ability to function in all aspects of life. Despite the need for cognitive rehabilitation services as a standard of care, there is a scarcity of research studies designed to investigate treatment approaches and

CONCURRENT SESSIONS 8:30 AM - 10:00 AM

their effectiveness in persons with neurological disorders.

The aim of this symposium is to examine one aspect of cognitive rehabilitation, the use of strategies to improve cognitive and everyday functioning in persons with cognitive impairments. In this symposium we will present and discuss studies investigating the effectiveness of strategy use in persons with cognitive impairments, and ways to enhance generalization and transfer of strategies learned in treatment to everyday life.

The first presentation will provide an updated review of evidencebased research on cognitive rehabilitation and strategy use in individuals with acquired brain injury. The next two talks will focus on cognitive strategies that have been found to be beneficial in improving the learning and memory in persons with multiple sclerosis (MS) and traumatic brain injury (TBI).

Specifically, data on combining two learning and memory strategies (i.e. generation and spacing effect) will be described. Additionally, an established treatment protocol that utilizes context and visual imagery will be discussed. Consideration will be given to the impact of culture in the application of the strategies used in cognitive rehabilitation. Finally, strategy use in neurological populations and ways to increase their generalization in everyday life activities will be presented. Current status of and ideas for future work will be discussed.

COMPARING OF FUNCTION ACROSS POST-ACUTE REHABILITATION SETTINGS AFTER CO-CALIBRATION OF SELF-CARE AND MOBILITY ITEMS PORT MCNEILL (L4)

Trudy R. Mallinson, PhD, OTR/L, NZROT, University of Southern California, Los Angeles, CA; Anne Deutsch, RN, PhD, CRRN, Allen W. Heinemann, PhD, Rehabilitation Institute of Chicago, Chicago, IL

Rehabilitation is provided in a range of post-acute care (PAC) settings, each varying in the intensity of care and services provided, and the payment systems that regulate reimbursement. Medicare mandates that PAC settings use different measures of functional status as part of the Medicare prospective payment systems: the Patient Assessment Instrument (IRF PAI) for inpatient rehabilitation facilities (IRFs), the Minimum Data Set (MDS) for skilled nursing facilities (SNFs), and the Outcome and Assessment Information Set (OASIS) for home health agencies (HHAs). Patients' scores on these measures are also used to document the functional outcomes of patients.

This symposium will describe PAC payment policy and the application of two methods of item response theory (IRT) to co-calibrate functional status items of the IRF PAI, MDS, and OASIS. Primary data were collected on 571 patients with stroke, hip fracture, or hip replacement, in each of the three PAC settings, each rated on all tools. These primary data serve as the critical link to connect to a year of administrative and assessment data for Medicare patients receiving rehabilitation in IRF, SNF, & HHA for stroke, hip fracture or joint replacement.

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We present the results of the co-calibration, which resulted in comparable measures of function for all patients, which we used to compare functional status across PAC settings at admission and discharge for each diagnosis. We present the results from models that predict functional gain and cost as a function of patient characteristics and PAC setting using Medicare administrative data for PAC rehabilitation discharges in 2005.

MOTOR CONTROL IN SCI: THE UTILITY OF ELECTROMYOGRAPHY IN THE CLINIC AND THE LAB GRANVILLE (L4)

Keith Tansey, MD, PhD, Deborah Backus, PT, PhD, Joy Bruce, DPT, PhD, W. Barry McKay, Shepherd Center, Atlanta, GA

Clinicians and researchers are often plagued by a lack of adequate outcome measures to assess motor control and recovery after neural injury. Clinicians are challenged to defend their choice of interventions based on measures that simply do not capture the full extent of motor improvements. Similarly, researchers are often stymied by the inadequacy of outcome measures to provide insight into the underlying mechanisms of functional change.

To achieve motor skill, one must have not only the ability to activate a muscle, but also the ability to turn it off, at the correct time during a task, at the sufficient amount, across multiple muscles and joints, in a controlled and coordinated fashion. While one may demonstrate the ability to perform a given task, the task itself may not be performed in a way that is smooth and accurate. To simply assess the task (e.g. reaching for a cup), with a functional tool (e.g. using the Arm Research Action test), will not provide any information about how an individual is performing the task, or the parameters (timing and control of muscle activation) that may be impacting the performance of the task.

Advances in electromyography (EMG) make this a valuable tool for providing insights into the way that the CNS is controlling movement. Both clinicians and researchers may benefit from using EMG to assess changes in muscle activation patterns during specific tasks, and may gain insights into underlying mechanisms of dysfunction and recovery of function in people with SCI.

IMPROVING COGNITION AFTER BRAIN INJURY: ADVANCES IN THE NEUROSCIENCE OF COGNITIVE TRAINING PORT ALBERNI (L4)

Anthony J. W. Chen, MD, Tatjana Novakovic-Agopian, PhD, University of California, San Francisco, San Francisco, CA; Asha Vas, University of Texas, Dallas, TX; Scott Rome, MD, California Pacific Regional Rehabilitation Center, San Francisco, CA

Deficits in cognitive functioning are amongst the most prevalent and functionally disabling consequences of brain injuries, even in chronic stages of recovery. Improved interventions are needed. Faculty in this symposium will discuss examples of the development, testing and neuroscientific investigation of training higher order cognitive functions important for 'goal-direction.' Faculty will describe the rationale, design and testing of neuroscience-driven cognitive training interventions targeting integrated neural systems underlying attention regulation, executive control and strategic reasoning—all of which are processes important for the efficient and effective achievement of goals.

One common theme will be the importance of goal-directed selective processing of information as a crucial gateway for regulating neural resources during processes of goal attainment (such as learning, memory, decision-making, and problem-solving). Application and evaluation of the interventions will be discussed for individuals with chronic cognitive deficits from acquired brain injury, including military veterans with combat-related TBI and dysregulation in emotional as well as cognitive regulation.

Faculty will discuss new knowledge gained by taking an interventional cognitive neuroscience approach, combining neuroscience-driven interventions with hypothesis-testing measurements at multiple levels of human functioning, highlighting changes in specific neurocognitive domains and performance in 'real life,' as well as evidence pointing towards specific neural mechanisms that support cognitive improvement. Challenges and directions for advancing intervention development efforts, as well as implications for preparing individuals for occupational, scholastic and community re-integration goals will be important topics for discussion.

NETWORKING BREAK | EXHIBITION 3:00 PM - 3:30 PM PAVILION, JR. BALLROOM & FOYER

JOHN STANLEY COULTER LECTURE

10:30 AM - 11:30 AM GRAND BALLROOM A



ACRM is pleased to award the prestigious John Stanley Coulter Lectureship to **SUSAN HARKEMA, PHD** in recognition of her professional achievement and contributions to the advancement of the field of rehabilitation. Dr. Harkema is a professor in the Neurological Surgery Department at the University of Louisville, and the Owsley B. Frazier Chair in Neurological Rehabilitation. She serves as

research director for the Kentucky Spinal Cord Injury Research Center and as director of the Christopher and Dana Reeve NeuroRecovery Network at the Frazier Rehab Institute in Louisville, KY.

NEUROMODULATION OF SPINAL CIRCUITRY FOR RECOVERY AFTER NEUROLOGIC INJURY

Studies in animals and humans have shown that the functionally isolated human spinal cord maintains specific properties recognized to generate locomotion in other species. These concepts now have

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been translated into the clinic by the Christopher and Dana Reeve NeuroRecovery Network of seven rehabilitation centers that provide standardized Locomotor Training to individuals with chronic incomplete spinal cord injury. Two hundred and six individuals ranging from 0.9 to 26 years post injury were assessed during intensive Locomotor Training, including step training using body weight support and manual facilitation on a treadmill followed by overground assessment and community integration. Significant improvement from enrollment to final evaluation was observed in balance and walking measures for AIS C and AIS D patients. These results indicate that rehabilitation that provides intensive activitybased therapy can result in functional improvements in individuals with chronic incomplete SCI even years after injury.

In another study we hypothesized the human spinal locomotor circuitry has sufficient automaticity potential to generate postural control and rhythmic, coordinated weight bearing stepping and that we can recruit this locomotor and postural circuitry with a tonic epidural stimulation of selected lumbosacral segments. We implanted in three individuals with motor complete SCI. We implanted a 5-6-5 electrode array epidurally spanning L2-S1 spinal cord segments and a neurostimulator (Medtronic) capable of stimulating any combination of the 16 electrodes in the array at intensities up to 10.5V and with frequencies ranging from 2-50 Hz. While sitting, without epidural stimulation, we observed minimal EMG activity in all leg muscles. While standing in a supportive system without stimulation and with assistance provided at both knee joints by a trainer, little or no observable EMG activity occurred in the leg muscles. With epidural stimulation the transition from sitting to standing was accompanied by an increase in the EMG amplitude by orders of magnitude beyond that observed in the sitting position. In addition, after several months of training he was able to voluntarily move his legs in the presence of epidural stimulation. These results demonstrate the interaction between sensory and epidural regulation of locomotor circuitry. The results also show that a physiological state can be achieved with epidural stimulation so that the sensory input can effectively control the locomotor circuitry to stand.

CONCURRENT SESSIONS 11:30 AM - 1:00 PM

HEALTH PROMOTION AND DISEASE PREVENTION ACROSS THE LIFESPAN IN SPINAL CORD INJURY: FROM PEDIATRICS TO GERIATRICS PORT MCNEILL (L4)

Pouran D. Faghri, MD, MS, FACSM, University of Connecticut, Storrs, CT; Sue Ann Sisto, PhD, PT, FACRM, Stony Brook University, Stony Brook, NY; Therese Johnston, PT, PhD, MBA, University of the Sciences, Philadelphia, PA; Gail F. Forrest, PhD, University of Medicine and Dentistry of New Jersey, Newark, NJ

Improvements in medical technology, understanding of pathology of disease and disability, and improvements in emergency response, have increased the prevalence of individuals living with spinal cord injury (SCI). Chronic diseases are the leading cause of death in SCI, and all are related to unhealthy lifestyle behaviors (sedentary lifestyle, unhealthy eating, obesity and smoking). However, little emphasis is placed on promoting healthy lifestyle and preventing secondary health conditions following SCI across the lifespan. Health care providers can play a major role, in the integration of health promotion, through interdisciplinary collaborations, as well as community and workplace integrations to promote the health and quality of life of people with SCI.

The purpose of this symposium is to address the lack of governmental efforts in promoting the health of people with SCI. We will discuss the need to change our present health care model of "treating the sick" to "promoting healthy lifestyle" through empowerment and education. Practices that increase access to technology that may promote a healthy lifestyle across the lifespan will be discussed along with the need for the development of community health promotion models by integration of fitness centers into health promoting activities of people with SCI while reducing physical, social, and attitudinal barriers and eliminate stigmatizations.

TREATING FRAILTY USING A REHABILITATION APPROACH: PROVIDING AN EFFECTIVE PROGRAM GRANVILLE (L4)

lan D. Cameron, PhD, Susan Kurrle, PhD, Nicola Fairhall, PhD Student, University of Sydney, Sydney, AU

We have completed a clinical trial of treatment of frailty and have shown that a multifaceted interdisciplinary intervention reduces frailty and improves mobility. The treatment program was targeted at frailty defined phenotypically using the Cardiovascular Health Study criteria (1), and also utilized the principles of geriatric evaluation and management. Details of the treatment program have been published (2).

In the symposium we will review the conceptual basis of a rehabilitation approach to frailty. The implementation, monitoring and evaluation of the frailty rehabilitation program will be illustrated with reference to case studies. Issues related to adherence to the program and avoidance of adverse effects will be emphasized. Strategies for evaluation of effectiveness for individuals and for program evaluation will be presented. Symposium participants will be encouraged to develop a frailty intervention program for a patient using evidencebased components tailored to the circumstances of their own clinical practice.

GOAL ATTAINMENT SCALING AS ASSESSMENT AND TREATMENT: CONCEPTS AND APPLICATIONS FOR BRAIN INJURY REHABILITATION PORT ALBERNI (L4)

Tessa Hart, PhD, Moss Rehabilitation Research Institute, Elkins Park, PA; Angelle Sander, PhD, TIRR Memorial Hermann and Baylor College of Medicine, Houston, TX; Kathryn M. McPherson, RN, RM,

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Dip HV, BA (Hons), PhD, FAFRM (Hons), AUT University, Auckland, NZ; James F. Malec, PhD, ABPP-Cn, Rp, Rehabilitation Hospital of Indiana, Indianapolis, IN

Goal Attainment Scaling (GAS) is a quantitative method for measuring progress on individualized patient goals. It has been used as a sensitive supplement to standardized outcome measurement, and as a tool to engage patients in goal-setting. GAS has undeniable promise for rehabilitation, but questions remain about how best to implement it, especially with cognitively impaired participants.

In this symposium, three clinical researchers will discuss their use of GAS in studies of traumatic brain injury (TBI). Dr. Tessa Hart will provide an overview of GAS and describe its use as an outcome measure in a study of Goal Intention Reminding, an intervention for persons with emotional/ social dysfunction after traumatic brain injury (TBI). Dr. Angelle Sander will describe the use of GAS to set individualized goals and assess outcomes in a two-site clinical trial of home-based, contextualized memory strategy training for persons with TBI. Dr. Kathryn McPherson will discuss a study designed to promote goal engagement and self-regulatory strategy use by people with TBI, in which GAS was used not as an outcome measure but as an intervention.

Teaching clients how to use GAS was not only feasible but many 'enjoyed' using it, and it facilitated a constructive self-review of performance. All three talks will use case examples and preliminary data from the respective trials to illustrate the use of GAS and general principles/ techniques to facilitate its implementation. Discussant Dr. James Malec, a pioneer in the use of GAS in medical rehabilitation, will offer brief remarks and facilitate Q-and-A among the panel and audience.

INSTRUCTIONAL COURSES MID-DAY SESSIONS

11:30 PM - 3:30 PM

1) **DIFFERENTIAL DIAGNOSIS IN DIZZINESS** ORCA (L3)

Susan E. Bennett, PT, DPT, EdD, Lacey Bromley, PT, University at Buffalo, Buffalo, NY

Dizziness is the third most common symptom for which patients seek medical care. This course will focus on differential diagnosis of dizziness disorders spanning peripheral disorders, central nervous system-based disorders and impact of the upper cervical spine in dizziness. Disorders that will be discussed include brainstem stroke, mild traumatic brain injury/concussion, unusual presentations of BPPV, and upper cervical dysfunction. Evidence supporting the examination, differential diagnosis and treatment of dizziness will be discussed with audience participation in three case discussions.

2)

2) **BRAIN INJURY COPING SKILLS (BICS) WORKSHOP: AN** INTERVENTION FOR SURVIVORS OF BRAIN INJURY AND CAREGIVERS GALIANO (L4)

Samantha L. Backhaus, PhD, Summer Ibarra, Rehabilitation Hospital of Indiana, Indianapolis, IN

The Brain Injury Coping Skills Group (BICS) is a 20-week, Cognitive-Behavioral Treatment (CBT) intervention for individuals with brain injury (BI) and their caregivers. This is a small group intervention (although can be applied via various modalities) in which individuals are provided psycho-education, group support, and stress management skills to deal with their injury.

Modules include information about the: (1) Healthy Brain; (2) Effects of Brain Injury; (3) Caregiver Coping Strategies; (4) Expectations for Recovery; Effects of Alcohol and BI; Returning to Work and Driving; (5) Dealing with Challenges after BI; (6) Signs and Symptoms of Depression specific to BI; and (7)Stress Management Skills utilizing Beck and Ellis's models of cognitive restructuring. This intervention is typically provided in an outpatient setting by rehabilitation professionals trained in brain injury as well as cognitive-behavioral techniques. It can be provided by psychologists, rehabilitation therapists, or other rehabilitation professionals that understand BI, making it multidisciplinary in nature.

Randomized-controlled studies have shown that participants of this treatment make significant improvements in self-efficacy, maintain the emotional benefits at follow-up, and show improvements in anger control and emotional disinhibition when compared to controls, and even compared to those who receive standard support groups. Participants in this workshop can expect to learn about the components of this intervention, as well as receive a clinical framework for utilizing common neurobehavioral and cognitive-behavioral interventions cited in literature. Workshop participants are expected to already have knowledge of brain injury and its effects.

3) TBI PRACTICE-BASED EVIDENCE PRELIMINARY STUDY FINDINGS: OPENING THE BLACK BOX OF TBI REHABILITATION FINBACK (L3)

Susan D. Horn, PhD, Institute for Clinical Outcomes Research, Salt Lake City, UT; James Young, MD, Rehab Associates of Chicago, Rush University Medical Center, Chicago, IL; Nora Cullen, MD, Toronto Rehab, Toronto, ON, CA; Cynthia Beaulieu, PhD, ABPP-Cn, Brooks Rehabilitation Hospital, Jacksonville, FL; Murray Brandstater, MD, Loma Linda University, Loma Linda, CA

This course will describe the TBI-PBE study design and variables included in the database, present preliminary findings from the TBI-PBE study about treatments and interventions that are associated with better outcomes at discharge and 1-year follow-up, and stimulate discussion about how the findings can be challenged, improved in future analyses, and used in practice treating moderate to severe TBI patients.

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CONCURRENT SESSIONS

1:30 PM - 3:00 PM

THE SCIENCE BEHIND HOPE AND KEEPING IT POSITIVE IN REHABILITATION: IMPLICATIONS FOR REHABILITATION ENGAGEMENT AND OUTCOMES GRANVILLE (L4)

Kathleen B. Kortte, Johns Hopkins School of Medicine, Baltimore, MD

Rehabilitation is a process aimed at facilitating recovery and reducing the impact of impairments on daily life task completion and social role functioning. In order to maximize outcomes, patients must fully engage in this process. Traditionally, rehabilitation interventions have focused on reducing the influence of barriers, such as pain, depression, and cognitive impairment on the rehabilitation process. There is solid support that interventions aimed at barrier reduction are effective in enhancing functional abilities and emotional adjustment. However, this approach relies upon a more reactionary approach to care in which patients receive attention once a potential barrier is identified.

There has recently been increased attention to identifying positive variables believed to foster the rehabilitation process and, hopefully, result in better recovery and long-term outcomes. Building on an individual's strengths and facilitating positive coping mechanisms at the beginning of rehabilitation may result in better engagement in the rehabilitation process and long-term outcomes than reacting to problems after they arise.

In a series of studies, we have examined the positive psychological variables of hope and positive affect in rehabilitation populations participating in rehabilitation. The findings support that hope and positive affect play significant roles in rehabilitation engagement, functional outcomes, and life satisfaction in a variety of rehabilitation populations. The current symposium will review the results of these studies within the context of the literature more broadly to highlight the need to focus clinical interventions to proactively assist individuals in cultivating positive thinking and attitudes that facilitate full engagement in the rehabilitation process.

WOMEN LIVING WITH TBI: WHAT DO WE KNOW AND WHAT DO WE NEED TO KNOW PORT ALBERNI (L4)

Angela Colantonio, PhD, FACRM, Toronto Rehabilitation Institute, Toronto, ON, CA; Jane Warren, MBA, BBA, Freelance Disability Consultant, past-president and first survivor-president of the Brain Injury Association of Nova Scotia (BIANS), Wolfville, NS, CA; Gregory O'Shanick, MD, Center for Neurorehabilitation Services, Richmond, VA; Elisabeth Sherwin, PhD, University of Arkansas, Little Rock, AR; James Young, PhD, Rush University Medical Centre, Chicago, IL

This symposium is part of the growing efforts to promote awareness and recruit efforts to address the unique issues facing women living with TBI. In 2010, at the International Brain Injury Association in Washington DC, an extracurricular session resulted in close to 50 women and men, from clinicians to consumers, convening on a Saturday at 7:00 am to start the organized effort.

In October of 2010, the first international workshop on women with acquired brain injury was held in Canada funded by the Canadian Institutes for Health Research and supported by the ACRM. An ACRM brain injury interest group task force on women and traumatic brain injury was subsequently formed and has been meeting regularly. In March 2012 a group of international professionals presented a pre-conference workshop on this topic at the International Brain Injury Conference in Edinburgh Scotland. This symposium extends and widens those efforts.

This symposium will present a multifaceted interdisciplinary perspective of women living with the effects of acquired brain injury across the continuum of care and beyond with implications for research and practice. We present data from both the US and Canada as well as synthesize international initiatives. Both quantitative and qualitative data sources are examined. Moreover, the goal is to provide researchers/clinicians information about what they should know and need to know about women with TBI. Finally, the symposium will conclude with an invitation for participation extended across disciplines and backgrounds, and details of exciting new networks and developments in this area.

ACRM is Blooming

New logo launching in conjunction with 90-year anniversary celebration

Just in time for the 90th anniversary of ACRM in 2013, the board of governors recently engaged in a branding study and logo redesign. After months of work and careful consideration, the board unanimously approved the logo you see throughout this program. In the coming months, the logo will gradually roll-out across all communication channels.

The new ACRM logo has a clean, modern look in keeping with the focus on cutting-edge research and innovation. The equity of the ACRM red color has been preserved and updated with a sans serif font.

The overlapping petals of the new lotus flower icon visually communicate the interdisciplinary culture of ACRM. As we dig deeper into the physical attributes and symbolism of the lotus, we find many qualities that aptly represent ACRM.

The seeds of the lotus, like ACRM, may remain viable for many, many years. The oldest lotus seeds known to exist are 1300 years old. Going into its 90th year, ACRM is vibrant and growing. The lotus is a symbol of rebirth, rising from dark and murky waters. Similarly, ACRM fosters a diverse global community, centered around rehabilitation research, to bring about new beginnings and to IMPROVE THE LIVES of those living with disabling conditions.



Improving lives through interdisciplinary rehabilitation research

The following faculty list represents all authors, speakers, and poster presenters involved in the program content.

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Much of this work is accomplished within ACRM Special Interest and Networking Groups and their many task forces. The ACRM multidisciplinary culture enables members to collaborate and share information and resources with like-minded, yet specialized health care and research colleagues. Members are welcome and encouraged to participate in these groups.

The ACRM scientific journal, Archives of Physical Medicine and Rehabilitation publishes cutting-edge research that promotes health, independence, productivity and quality of life and is the most cited journal in rehabilitation. In support of best practices in rehabilitation, ACRM provides a robust educational program through its annual conference, *Progress in Rehabilitation Research*. This meeting offers a unique platform where researchers and clinicians come together for multidisciplinary exchange and collaboration.

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Presentation of these prestigious awards will take place during the 2012 ACRM Annual Conference, *Progress in Rehabilitation Research*, 12 October, at the Henry B. Betts Awards Gala in Vancouver, BC. We are pleased to honor this year's winners as follows.

2012 GOLD KEY AWARD

The highest honor given by ACRM is awarded to **Marcel Dijkers, PhD, FACRM**. A prolific writer and past president, Dr. Dijkers is well known for his quality research and extensive knowledge of rehabilitation literature.

Dr. Dijkers is senior investigator at the Brain Injury Research Center of Mount Sinai in New York, NY. He is the research director of the New York Spinal Cord Injury Model System. He also is the principal investigator on a CDC-funded project to develop a Web site to help people with cognitive challenges interact with the health care system.

The 2012 Gold Key Award acknowledges **Marcel Dijkers**, **PhD**, **FACRM** for his extraordinary service to the cause of rehabilitation. It is the highest honor given by ACRM.

JOHN STANLEY COULTER LECTURER AWARD

This year's prestigious lectureship recognizes **Susan Harkema, PhD** for her professional achievement and contributions to the advancement of the field of rehabilitation.

Dr. Harkema holds the Owsley B. Frazier Rehabilitation chair in Neurological Surgery and is the Rehabilitation Research director of the Kentucky Spinal Cord Injury Research Center at the University of Louisville. She is director of research at Frazier Rehab Institute and director of the NeuroRecovery Network.

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"Reconceptualizing Brain Injury Rehabilitation in the Future: A Peek over the Horizon"

ACRM and Division 22 of the American Psychological Association jointly sponsor this annual lectureship honoring the late Mitchell Rosenthal. Selected lectures are presented at their respective organization meetings in alternate years. Mitchell Rosenthal Memorial Lectures are also published in the *Journal of Head Trauma Rehabilitation* (JHTR). The ACRM-selected lecturers for 2012 are **Catherine A**. **Mateer, PhD** and **James F. Malec, PhD, ABPP-CN, RP, FACRM**.

Catherine A. Mateer, PhD, is a board-certified clinical neuropsychologist with an extensive background in clinical assessment, clinical intervention, and both basic and applied research. She is currently a professor in the Department of Psychology and the Director of the Graduate Program in Clinical Psychology at the University of Victoria in British Columbia, Canada. She has co-authored three books and over 100 peer-reviewed articles and book chapters. Dr. Mateer is well known internationally for her work in the neuropsychological assessment and management of cognitive and emotional difficulties following neurological injury.

James F. Malec, PhD, ABPP-CN, RP, FACRM is research director for the Rehabilitation Hospital of Indiana Foundation, adjunct professor of PM&R, Indiana University School of Medicine, and Professor Emeritus of Psychology, Mayo Clinic. He is board certified in clinical neuropsychology and in rehabilitation psychology. He has over 100 peer-reviewed publications as well as other professional publications and continues to conduct research in brain injury rehabilitation and other areas of neuropsychology and behavioral medicine.

DEBORAH L. WILKERSON EARLY CAREER AWARD

This year, ACRM honors **Elizabeth R. Skidmore, PhD, OTR/L** for the contributions she is making to rehabilitation research during her early career work.

She will present her research during the annual conference in a lecture titled, *Closing the Gap: Early Intervention for Cognitive Disability after Stroke*.

Dr. Skidmore, PhD, OTR/L is an associate professor in the Department of Occupational Therapy at the University of Pittsburgh, associate professor (Secondary Appointment), Department of Physical Medicine & Rehabilitation Graduate Faculty, School of Health and Rehabilitation Sciences.

DISTINGUISHED MEMBER AWARD

The Distinguished Member Award recognizes an ACRM member who has significantly contributed to the development and functioning of ACRM, demonstrating leadership skills, organizational abilities and public service. ACRM recognizes **Ronald Seel, PhD** for his extraordinary service to the organization, as a committee chair, task force chair, and BI-ISIG chair.

Dr. Seel is the director of Brain Injury Research at the Virginia C. Crawford Research Institute, Shepherd Center in Atlanta, GA. Prior to Shepherd Center, he served as the executive director of the Southeastern Parkinson's Disease Research Education and Clinical Center and as associate director of Research and Neuropsychological Services for the Defense and Veterans Brain Injury Center at the McGuire Veteran's Medical Center in Richmond VA.

2012 EDWARD LOWMAN AWARD

The Edward Lowman Award acknowledges an ACRM member who recognizes the importance of multidisciplinary teams in rehabilitation. **Jeffrey Basford, MD** will be honored this year for a career that reflects an energetic promotion of the spirit of interdisciplinary rehabilitation.

Dr. Basford is a professor of Physical Medicine and Rehabilitation at Mayo Clinic, where his research interests emphasize neurological rehabilitation and musculoskeletal pain. He is also director of Mayo's NIH Medical Rehabilitation Research and Training Program, a corresponding member of the Japanese Association of Rehabilitation Medicine and past-director of his department's Research Committee. Dr. Basford is currently Editor-in-Chief of the ACRM journal, *Archives of Physical Medicine and Rehabilitation*.

ELIZABETH AND SIDNEY LICHT AWARD

The Elizabeth and Sidney Licht Award recognizes excellence in scientific writing in rehabilitation medicine. Only articles published in the *Archives of Physical Medicine and Rehabilitation* which present potential significance and empirical and theoretical contributions to rehabilitation medicine, and soundness of methodology and data analysis are considered for the award. **Keith Cicerone, PhD**

Is honored this year for his article, *Review of Evidence-Based Cognitive Rehabilitation*, was found to meet this high standard.

Dr. Cicerone is the Director of Neuropsychology and Rehabilitation Psychology at the JFK-Johnson Rehabilitation Institute and New Jersey Neuroscience Institute, JFK Medical Center. He has been the Clinical Director of the Cognitive Rehabilitation Department at JFK-Johnson Rehabilitation Institute since 1985. Dr. Cicerone is the Project Director for the New Jersey Traumatic Brain Injury Model System funded by the NIDRR. He holds academic appointments as Clinical Professor of Physical Medicine and Rehabilitation at the University of Medicine and Dentistry of New Jersey and as Associate Professor of Neuroscience, Seton Hall University Graduate School of Medical Education. Dr. Cicerone is Board Certified in Clinical Neuropsychology by the American Board of Professional Psychology.



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