

## Craig Hospital Research Summary – 2019

### Mission Statement:

“To conduct high-quality research to promote optimal health, independence, and life quality for people affected by spinal cord injury and traumatic brain injury.”

### Core Values:

- Advance the state of the science of disability and rehabilitation research.
- Adhere to ethical and legal principles governing research activities.
- Conduct research and dissemination that is meaningful to our constituents.
- Involve individuals with disabilities and their families, the interdisciplinary treatment team, other professionals and community members, in the research and dissemination process.
- Integrate research in clinical practice, education and evaluation.
- Foster a research culture throughout Craig Hospital.
- Promote scientific enquiry that will contribute to evidence-based practice.
- Lead and participate in spinal cord injury and traumatic brain injury collaborative research.
- Participate in setting the national disability research agenda.

### Introduction:

The Craig Hospital Research Department currently has a staff of 26 with an annual budget of \$5 million in federal, state, and foundation-sponsored grants, devoted to conducting a wide variety of applied spinal cord injury (SCI) and traumatic brain injury (TBI) rehabilitation research. In addition, funds raised from the annual PUSH Dinner support basic and clinical research.

The Research Department was established in 1974 when Craig Hospital was first awarded a Spinal Cord Injury Model System grant from the US Department of Health and Human Services, National Institute on Disability, Independent Living and Rehabilitation Research (NIDILRR). In 1998, Craig’s brain injury program received a similar designation when it was first named a TBI Model System. Each Model System project consists of a three-pronged research effort: contributing to a national longitudinal database, conducting local research projects that are of interest and importance to Craig, and collaborating with other Model Systems in research of common interest.

In 2006, Craig was named the TBI Model Systems National Data and Statistical Center, managing the TBI National Database and coordinating research among all TBI Model Systems. Perhaps the greatest benefit of the Model Systems programs is the research climate they have spawned here at Craig Hospital, giving us the expertise and confidence to successfully compete for and obtain funding from other sources as well.

Craig currently receives research funding not only from NIDILRR, but also from MindSource (formerly the Colorado TBI Trust Fund), the Congressionally Directed Medical Research Program (CDMRP) which is part of the Department of Defense, other research organizations via subcontracts, and foundations. As research has become more important to the mission and reputation of Craig, the Research Department has increased collaboration with other institutions by leading and participating in multi-center research and becoming a national data coordinating center. Below is a list of Craig Hospital’s currently funded research projects.

<b>GENERAL CLINICAL RESEARCH FUNDS</b>		
PUSH dinner proceeds		2013 - ongoing
The purpose of Craig Hospital's Clinical Research Fund is to provide funding for clinical research projects. This includes startup funding to cover the clinician's time to design research projects, equipment if necessary, consultations, and costs to conduct the actual studies.		
Contact:	<i>Kimberley Monden</i>	<i>303-789-8562</i>

**Spinal Cord Injury (SCI) Research**

<b>ROCKY MOUNTAIN REGIONAL SPINAL INJURY SYSTEM (SCI MODEL SYSTEM)</b>		
National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR)		2016 - 2021
Grant #90SI5015-01-00	PI(s): Charlifue, Monden, Coker	\$483,644/year

<b>Simvastatin to Improve Bone Health in SCI: A Double-Blind, Randomized, Placebo-Controlled Clinical Trial</b>		
This clinical trial led by Craig Hospital will determine whether a 12-month course of daily simvastatin 1) prevents bone loss in the paralyzed lower extremity, 2) promotes neurological recovery after SCI, and 3) reduces neuropathic pain after SCI.		
Contact:	<i>Susie Charlifue</i>	<i>303-789-8306</i>

<b>LEAD Module Project: Utilization of Complementary and Integrative Healthcare to Treat Pain in Persons with Spinal Cord Injury</b>		
The goal of this module project is to provide comprehensive information regarding utilization of complementary and integrative healthcare (CIH) to treat pain in people with SCI, and barriers and facilitators to utilization for people with SCI.		
Contact:	<i>Jennifer Coker</i>	<i>303-789-8229</i>

<b>Module Project: Using a Health Technology Assessment Framework for Evaluating the Utilization and Efficiency of Wearable Exoskeletons for SCI Rehabilitation</b>		
This collaborative SCI module led by the Rehabilitation Institute of Chicago will obtain evidence that informs consumers, clinicians, insurers, and manufacturers about the utilization and cost-effectiveness of RT-exo in inpatient, outpatient, and community settings.		
Contact:	<i>Susie Charlifue</i>	<i>303-789-8306</i>

<b>Module Project: Residential Instability in Chronic SCI: An Investigation of Patterns and Consequences</b>		
This collaborative SCI module led by Northern New Jersey Spinal Cord Injury Model System (Kessler). The main objective of this exploratory project is to better understand residential instability among people with SCI and generate new knowledge on this potentially important and unexplored challenge to health, healthcare utilization, and independent living.		
Contact:	<i>Susie Charlifue</i>	<i>303-789-8306</i>

<b>Module Project: Impact of pain at follow-up in individuals with SCI</b>		
This collaborative module, led by University of Miami will characterize the type of pain in individuals with SCI, its location in the body, its intensity, and its interference with mood, sleep, work and daily function using the International SCI Pain Basic Data Set 2, as well as assess the pain treatment(s) used by individuals with pain and SCI.		
Contact:	<i>Susie Charlifue</i>	303-789-8306

<b>SPINAL CORD INJURY MODEL SYSTEMS (SCIMS) MULTI-SITE COLLABORATIVE RESEARCH PROJECT</b>		
National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR)		2017 – 2022
90DPHF0002-01-00	PI(s): Charlifue, Monden, Coker	\$2,500,000
Reinventing Yourself after SCI: A multi-site randomized controlled trial of an intervention to improve outcomes after spinal cord injury. Craig Hospital is the lead site in collaboration with Kessler and the University of Michigan aimed at increasing SCI-specific and general self-efficacy beliefs, enhancing emotional well-being, improving participation in society for people with SCI living in the community, and increasing resilience.		
Contact:	<i>Susie Charlifue</i>	303-789-8306

<b>LIFESTYLE INTERVENTION TARGETING ENHANCED HEALTH AND FUNCTION FOR PERSONS WITH CHRONIC SCI IN CAREGIVER/CARE-RECEIVER RELATIONSHIPS: EFFECTS OF CAREGIVER CO-TREATMENT</b>		
National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR)		2015 - 2020
90DP0074-01-00	PI(s): Charlifue	\$763,695
Lead Center: University of Miami – Randomized Clinical Trial to determine the efficacy of a lifestyle intervention to improve health and function of individuals with SCI.		
Contact:	<i>Susie Charlifue</i>	303-789-8306

<b>AGING STUDY ANALYSIS</b>		
James E Burns and Kris Burns Research Fund		1990 – ongoing
	PI(s): Charlifue	\$50,000 total
Longitudinal statistical analyses of data collected in the British Study of Aging, which was conducted in 1990, 1993, 1996, 1999, 2002, 2006 and 2010.		
Contact:	<i>Susie Charlifue</i>	303-789-8306

<b>NEURORECOVERY NETWORK LOCOMOTOR TRAINING</b>		
Christopher and Dana Reeve Foundation		2012 – ongoing
	PI(s): Tefertiller	
Activity based therapy involves using intense practice and repetition of task specific mobility activities with the goal of improving walking ability and functional independence in individuals with paralysis. The purpose of the national database is to identify demographic variables and quantify mobility outcomes as well as quality of life outcomes associated with participation in this activity based therapy program. The database is also analyzed to track individual treatment program performance compared to network-wide aggregate data.		
Contact:	<i>Candy Tefertiller</i>	303-789-8251

<b>SCI CAREGIVER REINVENTION</b>		
Craig H. Neilsen Foundation		2015 - 2019
	PI(s): Charlifue	\$299,292
The goal of this randomized controlled trial is to determine the efficacy of a treatment to improve self-efficacy skills and reduce stress for family caregivers of individuals with SCI. The overarching hypothesis is that individuals who participate in an intervention that presents positive psychotherapy topics in an interactive, structured, cognitive-behaviorally-based group intervention that stresses restructuring maladaptive thought processes and provides experiential opportunities to reinforce behavioral change will demonstrate increased self-efficacy.		
Contact:	Jennifer Coker	303-789-8229

<b>DETERMINING HOW THE TIMING OF CATHETER REMOVAL IN SCI PATIENTS EFFECTS INCIDENCE OF UTI</b>		
PUSH Dinner Funds		2016 - 2019
	PI(s): Brubaker	\$32,149
This prospective observational study is to determine if the timing of indwelling urinary catheter removal in SCI patients effect incidence of UTIs.		
Contact:	Morgan Brubaker	303-789-8200

<b>SCI QOL VALIDATION</b>		
Craig H. Neilsen Foundation		2017 - 2020
	PI(s): Charlifue	\$49,048
This study will assess the reliability and validity of the International SCI QoL Basic Data Set (SCI-QoLBDS), evaluating if there are differences in scores and understanding of items across languages and cultures.		
Contact:	Susan Charlifue	303-789-8306

<b>EFFECTS OF EKSO-ASSISTED GAIT TRAINING ON BONE HEALTH AND QUALITY OF LIFE: A RANDOMIZED CLINICAL TRIAL</b>		
Department of Defense		2017 - 2020
Grant #: W81XWH-15-2-0078	PI(s):	\$2,364,955
The purpose of this study is to determine whether exoskeleton-assisted gait training increases bone strength in the paralyzed lower extremity and improves quality of life after SCI. Secondly, to determine whether gait training improves the following related outcomes and mediators of quality of life: mood, pain, and cortical activity of related emotional networks in the brain.		
Contact:	Susie Charlifue	303-789-8306

<b>CARTILAGE HEALTH BIOMARKERS AND US IMAGING OF KNEE SYNOVIAL FLUID FROM NORMAL SUBJECTS, ASTRONAUTS AND SCI PATIENTS</b>		
Center for the Advancement of Science In Space (CASIS/NASA)		2017 - 2019
	PI(s): Berliner	\$45,689
The goal of this combined physiology/immunology study is to test the hypothesis that weight bearing forces are necessary to maintain cartilage health in humans using the unique microgravity environment of ISS. We will determine if the lack of normal cyclic weight bearing compressive forces are associated with changes in synovial fluid volumes and alterations in synovial fluid cytokines/chemokines involved in maintaining cartilage homeostasis.		
Contact:	Susie Charlifue	303-789-8306

<b>STIGMA FOLLOWING SCI AND ITS IMPACT ON PSYCHOSOCIAL OUTCOMES</b>		
American Psychological Foundation		2017 - 2019
	PI(s): Monden	\$10,000
The goals of the proposed study are to assess the relationship between stigma and psychosocial outcomes (mood disturbance, quality of life, social participation, self-efficacy, perceived disability, and return to work/school) among individuals with spinal cord injury (SCI), and examine the potential mediating and/or moderating effects of sociodemographic (gender, race) and injury factors (level of injury, time since injury, injury etiology, injury completeness) with stigma on psychosocial outcomes.		
Contact:	<i>Kimberley Monden</i>	<i>303-789-8562</i>

<b>ASSISTIVE TECHNOLOGY AND FUNCTIONAL OUTCOMES FOLLOWING SPINAL CORD INJURY</b>		
Department of Defense		2018 - 2021
	PI(s): Monden	\$638,000
The long-term goals of this project are to identify perceived barriers and facilitators to access to and utilization of assistive technology in veteran and civilian populations, and quantify the impact of assistive technology on outcomes following tetraplegia. This study will evaluate the impact of assistive technology (AT) on functional and psychosocial outcomes among people with high-level spinal cord injury (SCI) using both focus group sessions and a survey.		
Contact:	<i>Kimberley Monden</i>	<i>303-789-8562</i>

<b>FUNCTIONAL MRI IN SCI PATIENTS WITH BELOW-LEVEL NEUROPATHIC PAIN</b>		
Craig Hospital Foundation		2018 - 2019
	PI(s): Falci	\$29,000
To Determine whether DREZ procedure changes cortical activity of emotional and pain processing networks in the brain. We will also determine if DREZ procedure improves the following related outcomes: mood, pain, quality of life.		
Contact:	<i>Susie Charlifue</i>	<i>303-789-8306</i>

<b>TRANSCUTANEOUS SPINAL CORD STIMULATION IN COMBINATION WITH MASSED PRACTICE TRAINING IN SPINAL CORD INJURY</b>		
Craig Hospital Foundation		2018 - 2019
	PI(s): Tefertiller	\$44,300
The primary objective of this study is to determine the feasibility and safety of using transcutaneous electrical stimulation in a clinical setting to promote neurological recovery in individuals with SCI. Our secondary objective is to collect pilot data assessing neurological and/or functional recovery due to transcutaneous electrical stimulation in individuals with chronic SCI.		
Contact:	<i>Candy Tefertiller</i>	<i>303-789-8251</i>

<b>VALIDATING THE INJUSTICE EXPERIENCE QUESTIONNAIRE IN A SPINAL CORD INJURY SAMPLE</b>		
Craig Hospital Foundation		2018 - 2019
	PI(s): Monden	\$ 47,000
This study has two primary aims: (1) to validate the measurement model of the Injustice Experience Questionnaire in a sample of individuals with SCI, and (2) to test the reliability and validity of the IEQ in the same sample.		
Contact:	<i>Kimberley Monden</i>	<i>303-789-8562</i>

<b>BIDETS FOR INDEPENDENCE AND QUALITY OF LIFE</b>		
Craig Hospital Foundation		2019
	PI(s): Severe	\$13,018
The purpose of this study is to determine if utilization of a bidet could reduce the time to complete a bowel program, improve hygiene, decrease caregiver burden, and improve satisfaction/quality of life related to bowel routines. Additionally, bidet use may allow some individuals with spinal cord injury to achieve independence with their bowel program when, without the bidet, they have needed some caregiver assistance.		
Contact:	<i>Ellen Severe</i>	<i>303-789-8243</i>

<b>BIOFEEDBACK FOR TREATMENT OF ANXIETY ASSOCIATED WITH CHRONIC SPINAL CORD INJURY</b>		
Neilsen Foundation		2019 - 2021
	PI(s): Monden	\$200,000
The proposed pilot study is designed to find a signal of a treatment effect that would support a larger study and to examine the feasibility of conducting a larger study biofeedback intervention to treat anxiety in individuals with SCI. Biofeedback training monitors a person's breathing and heart rates and teaches them to slow their breathing to better match their heart rate. This type of training has been shown to strengthen a person's psychological resilience.		
Contact:	<i>Kimberley Monden</i>	<i>303-789-8562</i>

<b>CRAIG CAREGIVER ASSESSMENT OF REWARDS AND EFFORT (C<sup>2</sup>ARE) – Validation of a new tool to assess caregiver distress and benefit</b>		
Neilsen Foundation		2019 - 2021
	PI(s): Charlifue	\$400,000
The aim of the project is to validate C <sup>2</sup> ARE for assessing SCI caregiver distress and benefit. Validation will include extensive psychometric analysis of C <sup>2</sup> ARE data collected in a new large sample of SCI caregivers to fully evaluate its validity and test-retest reliability. Having a valid and reliable measurement tool specifically designed for use in SCI has the potential to be useful both in the clinical and research settings. Such an assessment can help clinicians and service providers better target their interventions to family caregivers, and will add to the resources that can be used by researchers to determine if caregiver intervention studies are effective.		
Contact:	<i>Susie Charlifue</i>	<i>303-789-8306</i>

<b>Development of Crosswalks to Aggregate International Spinal Cord Injury Functional Data</b>		
Center for Large Data Research and Data Sharing in Rehabilitation		2018 - 2019
	PI(s): Whiteneck, Jones	\$18,000
This aim of this project is to create and validate a crosswalk between the Functional Independence Measure (FIM) and the Spinal Cord Independence Measure III (SCIM III) for items reflecting functional movement. Three crosswalk methods (expert panel equivalency, equipercenile equating, and Rasch analysis co-calibration) will be implemented and validated.		
Contact:	<i>Gale Whiteneck</i>	<i>303-789-8204</i>

**Traumatic Brain Injury (TBI) Research**

<b>THE ROCKY MOUNTAIN REGIONAL BRAIN INJURY SYSTEM (TBI MODEL SYSTEM)</b>		
National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR)		2017 - 2022
Grant # 90DPTB0007-01-00	PI(s): Harrison-Felix, Monden, Mellick	\$459,000/year

<b>Self-Advocacy for Independent Life (SAIL) after TBI</b>		
PI(s): Hawley, Harrison-Felix		
This study will evaluate the efficacy of an intervention to empower people with TBI to improve their lives by gaining the skills to advocate for needed services and resources.		
Contact:	<i>Lenny Hawley</i>	<i>303-789-8570</i>

<b>LEAD Module Project: Development and Assessment of Crosswalks in the TBIMS Database</b>		
Using data from the National TBI Model System Database we intend to evaluate various procedures for creating crosswalks between the FIM™ and the Continuity Assessment Record and Evaluation (CARE) Item Set, as well as evaluate the existing crosswalk between the Patient Health Questionnaire (PHQ-9) and the Traumatic Brain Injury Quality-of-Life (TBI-QOL) Depression Short Form and between the Generalized Anxiety Disorder 7-item (GAD-7) scale and the TBI-QOL Anxiety Short Form.		
Contact:	<i>Dave Mellick</i>	<i>303-789-8563</i>

<b>Module Project: Caregiver Resilience: A Longitudinal Investigation</b>		
This collaborative TBI module led by Virginia Commonwealth University TBIMS focusing on resilience offers a promising opportunity to better understand and conceptualize caregivers' experiences after TBI and will allow us to gain a new and better understanding of how caregiver attributes, namely resilience, relate to survivor outcomes and caregiver burden and needs.		
Contact:	<i>Kimberley Monden</i>	<i>303-789-8562</i>

<b>Module Project: Return to Driving after Moderate-Severe TBI: Who, When, Where and How Safe?</b>		
This collaborative TBI module led by the University of Alabama-Birmingham TBIMS intends to expand knowledge concerning driving behaviors for persons with a TBI and establish predictors of return to driving and safe driving.		
Contact:	<i>Kimberley Monden</i>	<i>303-789-8562</i>

<b>THE TRAUMATIC BRAIN INJURY MODEL SYSTEMS (TBIMS) NATIONAL DATA AND STATISTICAL CENTER (NDSC)</b>		
National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR)		2016 – 2021
Grant #90DP0084-01-00	PI(s): Harrison-Felix	\$662,500/year
The TBIMS NDSC manages the TBI Model Systems National Database and provides technical assistance, training, and methodological consultation to 16 centers and 3 follow-up sites as they collect and analyze longitudinal data from people with TBI in their communities, and as they conduct research toward evidence-based TBI rehabilitation interventions.		
Contact:	<i>Dave Mellick</i>	<i>303-789-8563</i>

<b>DATA HARMONIZATION BETWEEN THE TRAUMATIC BRAIN INJURY MODEL SYSTEMS NATIONAL DATABASE AND THE NATIONAL TRAUMA DATA BANK (NTDB)</b>		
National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR)		2018 - 2019
HHSP23320850062A	PI(s): Harrison-Felix	\$50,000
Craig Hospital, in collaboration with the University of Pittsburgh, will create a dataset for research that will link the TBIMS database with the National Trauma Data Bank using probabilistic matching, to pull in more detailed acute trauma data into the TBIMS database, and then weight that dataset to the national population of people that receive inpatient rehabilitation for TBI. This dataset will be created to look at longer term outcomes of that national population with more potential acute care predictors of outcome.		
Contact:	<i>Jessie Ketchum</i>	<i>303-789-8682</i>

<b>TRAUMATIC BRAIN INJURY MODEL SYSTEMS (TBIMS) MULTI-SITE COLLABORATIVE RESEARCH PROJECT</b>		
National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR)		2018 – 2023
90DPTB-01-00	PI(s): Harrison-Felix, Monden, Hoffman	\$3,000,000
Characterization and Treatment of Chronic Pain after Moderate to Severe TBI. Craig Hospital is the Lead site collaborating with eight TBI Model Systems Centers and one VA TBI Model Systems Center to examine chronic pain and pain treatment after TBI to improve the health and function through improved patient stratification and treatment guidelines. Outcomes from this study will include educational materials on chronic pain and pain treatment to benefit patients, family members, clinicians, and policymakers.		
Contact:	<i>Kimberley Monden</i>	<i>303-789-8562</i>

<b>MULTICENTER EVALUATION OF MEMORY REMEDIATION AFTER TBI WITH DONEPEZIL</b>		
National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR) to TIRR/Memorial Herman Rehabilitation and Research (subcontract to Craig Hospital)		2013 – 2019
	PI(s): Arciniegas, Harrison-Felix	\$610,602 total to Craig
This proposed study will establish whether, and to what extent, donepezil is an effective treatment for functionally important TBI-related memory deficit. The project is a four-site, randomized, parallel design, double-blind, placebo-controlled, 10-week trial of donepezil 10 mg daily for verbal memory problems among adults with TBI in the subacute or chronic recovery period. Craig Hospital will serve as the data coordinating center for the study.		
Contact:	<i>Dave Mellick</i>	<i>303-789-8563</i>

<b>AGING AND GLUTATHIONE ANTIOXIDANT STATUS AS MAJOR DETERMINANTS OF INJURY AND RECOVERY FROM TRAUMATIC BRAIN INJURY</b>		
Knoebel Center, University of Denver		2017 - 2019
	PI(s): Linseman and Gorgens from DU, Monden	\$20,000
The purpose of this study is to determine if bolstering brain Glutathione levels with whey-based nutritional supplement (Immunocal®) will enhance resilience of aged mice to TBI; and to measure blood Glutathione levels and the extent of functional recovery from TBI in patients receiving treatment at Craig Hospital		
Contact:	<i>Kimberly Monden</i>	<i>303-789-8562</i>

<b>TRACK-TBI</b>		
NIH, National Institutes of Neurological Disorders and Stroke		2017 - 2019
	PI(s): Harrison-Felix	
This is a collaboration with Denver Health in a longitudinal study of TBI that enrolls participants through Level 1 Trauma Centers across the US. Participants represent the entire spectrum of age, demographics, and injury severity. The overall goal of TRACK-TBI is to improve TBI classification/taxonomy for targeted clinical treatment trials, in order to improve TBI outcome assessments, such that the size and costs of clinical trials can be reduced, identify the health and economic impact of Mild TBI patient disposition, and create a legacy database with analytic tools and resources to support TBI research.		
Contact:	<i>Cindy Harrison-Felix</i>	<i>303-789-8565</i>

<b>COMPARISON OF SLEEP APNEA ASSESSMENT STRATEGIES TO MAXIMIZE TBI REHABILITATION PARTICIPATION AND OUTCOME</b>		
Subaward to Craig from Tampa VA Research and Education Foundation (TVAREF) in connection with TVAREF's contract with Patient-Centered Outcomes Research Institute (PCORI)		2016 - 2019
	PI(s): Monden, Harrison-Felix	\$487,262
This is a multi-site study to compare assessment strategies for sleep apnea in order to maximize TBI rehabilitation participation and outcome. Craig is a clinical site and the multi-site data coordinating center for this study.		
Contact:	<i>Kimberley Monden</i>	<i>303-789-8562</i>

<b>ROLE AND NEUROANATOMIC BASIS OF CONCURRENT MEDICAL CONDITIONS IN OUTCOME FOLLOWING MODERATE TO SEVERE TRAUMATIC BRAIN INJURY: DEVELOPMENT OF A TBI-SPECIFIC INDEX</b>		
Mindsource Brain Injury Network (formerly Colorado Brain Injury Research Program)		2017 - 2020
	PI(s): Whiteneck	\$348,498
The goal of this project is to utilize data on co-occurring medical conditions to assess the impact of these conditions on outcome in traumatic brain injury. The study will incorporate a novel system for assessing the acuity of concurrent medical conditions to develop a TBI-specific index for use in brain injury research.		
Contact:	<i>Gale Whiteneck</i>	<i>303-789-8204</i>

<b>DISCHARGE PLANNING AFTER TBI</b>		
A grant to the University of Washington from the Patient-Centered Outcomes Research Institute (PCORI) with a subcontract to Craig Hospital as the Data Coordinating Center		2017 - 2020
	PI(s): Mellick	\$382,823
This is a multi-center randomized control trial that aims to compare the effectiveness of Standardized Discharge Care (SDC) vs. Optimized Transition Care (OTC) on improving patient-reported outcomes of (1) participation, and health-related quality of life, for individuals with moderate-to-severe TBI who are discharged from inpatient rehabilitation		
Contact:	<i>Dave Mellick</i>	<i>303-789-8563</i>

<b>STUDY OF MODIFIED STEM CELLS IN TBI - STEMTRA TRIAL</b>		
SanBio, Inc		2017 – 2019
	PI(s): Weintraub	~ \$250,000
The purpose of this RCT is to determine the safety and efficacy of an investigational stem cell treatment for patients with a persistent motor deficit caused by TBI. Craig Hospital serves as a recruitment, enrollment, and assessment site for this study. Surgical implantation of stem cells is conducted at a variety of surgical centers across the country.		
Contact:	<i>Alan Weintraub</i>	303-789-8220

<b>DEVELOPMENT AND IMPLEMENTATION OF A TBI REGISTRY AND OUTREACH PROGRAM</b>		
Administration for Community Living grant to Mindsource Brain Injury Network (formerly Colorado Brain Injury Research Program) with subcontract to Craig Hospital		2018 - 2021
	PI(s): Eagye	\$60,000
The goal of this study is to analyze data from the TBI Surveillance System (in partnership with the Colorado Department of Public Health and Environment (CDPHE)) and the Craig prevalence study to develop a data-driven, targeted outreach and linkage program to be operationalized by Brain Injury Alliance of Colorado (BIAC).		
Contact:	<i>CB Eagye</i>	303-789-8557

<b>COMPLEMENTARY AND INTEGRATIVE HEALTHCARE (CIH) UTILIZATION AND BARRIERS TO UTILIZATION IN PEOPLE WITH TBI</b>		
Craig Hospital Foundation		2018 - 2020
	PI(s): Coker	\$45,000
The goal of this study is to characterize the utilization of complementary and integrative healthcare (CIH) by people with traumatic brain injury (TBI), to identify barriers to utilization of CIH by people with TBI, and to determine the relationship between utilization of CIH and functional and psychosocial outcomes.		
Contact:	<i>Jennifer Coker</i>	303-789-8229

<b>LANGUAGE DISORDERS IN TRAUMATIC BRAIN INJURY</b>		
Craig Hospital Foundation		2019 - 2020
	PI(s): Frey	\$16,315
The purpose of this study is to retrospectively investigate the incidence of aphasia in traumatic brain injury as well as the relationship between impaired language and orientation testing scores.		
Contact:	<i>Kim Frey</i>	303-789-8278

<b>VALIDATING THE RUFF NEUROBEHAVIORAL INVENTORY (RUFF) AS AN AWARENESS MEASURE.</b>		
Craig Hospital Foundation		2019 - 2020
	PI(s): Chao, Schraa	\$1,000
The purpose of this study is to validate the RNBI as an awareness measure by using the discrepancy between caregiver and patient self-report to determine level of awareness, and therefore predicted prognosis, at time of discharge from inpatient rehabilitation. Impaired self-awareness following a traumatic brain injury (TBI) can reduce the effectiveness of rehabilitation, resulting in poorer outcomes e.g. employability, community reintegration.		
Contact:	<i>Dominique Chao</i>	720-569-0597

<b>MANUAL WHEELCHAIR CONFIGURATION FOR INDIVIDUALS WITH HEMIPLEGIA: EFFECTS OF FRAME TYPE ON EFFICIENCY OF PROPULSION</b>		
Permobil		2019 - 2020
	PI(s): Tefertiller	
The purpose of this industry funded study is to address the importance of axle position and frame type on upper extremity propulsion. Understanding the effects of axle position and frame type on this propulsion technique is critical in assuring frame recommendations that maximize independence and life participation.		
Contact:	<i>Candy Tefertiller</i>	<i>303-789-8251</i>

**Spinal Cord Injury (SCI) and Traumatic Brain Injury (TBI) Research**

<b>VENOUS THROMBOEMBOLISM, DEFINING INCIDENCE, PREVALENCE AND UTILITY OF SCREENING IN THE BRAIN INJURY, SPINAL CORD INJURY AND DIAL DIAGNOSIS</b>		
Craig Hospital Foundation		2017 - 2019
	PI(s): Berliner	\$22,199
The aims of this project are to assess the incidence of VTE and PE using ultrasonography and to compare the incidence of VTE and PE in TBI, SCI and Dual Diagnosis (DD) services. We will also perform a cost benefit analysis of ultrasound screening for VTE in our TBI, SCI, and DD samples.		
Contact:	<i>Susie Charlifue</i>	<i>303-789-8306</i>