

neurotransmitter

THE NEWSLETTER OF THE ACQUIRED BRAIN INJURY PROGRAM AT **SHEPHERD CENTER**

In this issue:

Focusing on a Promising Future

Fall/Winter 2010



Shepherd Center



Darryl Kaelin, M.D.

Medical Director
Acquired Brain Injury Program

Shepherd Center's Management of Medically Complex TBI

Community, donor and administrative support allow Shepherd Center to offer unique programs for the most medically complex cases of brain injury.

Excellence is often marked by being ranked among the best by your peers. This year, Shepherd Center has again been honored as one of the top 10 rehabilitation hospitals in the nation by *U.S. News & World Report*. Peers typically recognize clinical programs as excellent for offering unique or comprehensive services to treat persons who have the most severe and complicated conditions. As I think about our brain injury program, we are fortunate to have community, donor and administrative support that allow Shepherd Center to offer unique programs for the most medically complex persons with brain injury as part of a comprehensive continuum of care.

Unique to Shepherd Center is our internal ICU in which we deliver intensive and specialized medical and surgical care. Our ICU has a dedicated rehabilitation team (PT, OT and SLP) that allows us to begin rehabilitation therapies on neurologically impaired patients at a very early stage in their recovery. Evidence suggests that providing rehabilitation therapies early leads to better outcomes. In addition, if patients become very ill while on the brain injury rehabilitation unit, we can transfer them to our own ICU where aggressive medical attention is provided and the rehabilitation program can continue as tolerated.

Also unique to Shepherd Center is our disorders of consciousness program called PREP (Pre-Rehabilitation and Education

Program). Annually, we typically admit 50 PREP patients, who are in a vegetative or minimally conscious state, to facilitate medical stability, cognitive arousal, rehabilitation readiness and hands-on family training.

Given the acuity of our PREP and acute rehabilitation patients, spasticity is a frequent co-morbidity. We are fortunate to have administrative support that allows us to aggressively administer an array of spasticity treatments, alone or in combination, that include serial casting, BOTOX®, oral meds, electrical stimulation and intrathecal Baclofen.

We are also fortunate as a non-academic center to have a culture that is committed to conducting research, providing education and integrating evidence into rehabilitation practice. This year alone, Shepherd Center has more than \$600,000 in brain injury research funding to support an acute rehabilitation medication randomized clinical trial, a medication trial for persons with disordered consciousness, a prognostic study of biopsychosocial risk factors, the development of a safety risk scale, and several studies identifying effective acute rehabilitation therapies and post-acute treatments needs. Led by Ron Seel, Ph.D., our center is growing in recognition as a national leader in brain injury research.

Each year, Shepherd Center trains dozens of Emory University resident physicians and medical students. Additionally, we have been hosts for several national and

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Above: Shepherd Center ICU staff Mickey Hitch R.N., Andrew Zadoff, M.D., and Karen Kline, P.A., review patient information. *Photo by Louie Favorite*

Left: Darryl Kaelin, M.D., left, discusses a case with nurses and resident physicians in Shepherd Center ICU. *Photo by Gary Meek*

Advancing Critical Care with Early Rehabilitation

On-site ICU patients at Shepherd Center get functional jump-start.

By Amanda Crowe, MA, MPH

Shepherd Center's on-site intensive care unit (ICU) has set it apart from other rehabilitation hospitals. Patients with traumatic brain injuries can be admitted directly from an acute-care hospital ICU to Shepherd's ICU and thus begin rehabilitation sooner.

This seamless approach, which includes an intense emphasis on reducing complications, can translate into healthier patients who are more likely to engage in individualized neurorecovery therapies earlier on and ultimately experience better outcomes, experts say.

"Shepherd Center provides all standard ICU services, except for intra-cranial pressure monitoring, but patients in our ICU can start receiving rehabilitation services for the brain injury while we address critical medical issues," says Andrew Zadoff, M.D., medical director of the ICU and respiratory therapy at Shepherd Center. "Thus, our patients can be more functional even before we get them out of the ICU. Our goal is to get people started with rehabilitation as soon as possible."

Shepherd's ICU nurses are trained to treat people who are critically ill, and they understand and address the rehabilitation needs of patients. This continuity of care is beneficial to people who are emerging from brain trauma and may require a ventilator, antibiotics or other critical-care services, says

Susan Johnson, program director of Shepherd's Acquired Brain Injury Unit. Also, a dedicated rehabilitation team, which includes physical therapists (PT), occupational therapists (OT) and speech-language pathologists (SLP), can deliver brain injury rehabilitation services as tolerated by patients.

"Consistent with research evidence in people with stroke and other diseases, we are aggressive about getting people up and moving around, which has been shown to lead to better functional outcomes," Johnson adds.

In addition to Dr. Zadoff's supervision of patients' critical care, a physiatrist is assigned to oversee patients' brain injury care. "A key advantage to this team approach is the ability for a physiatrist to provide medication management that facilitates cognitive recovery," says Darryl Kaelin, M.D., medical director of Shepherd's Acquired Brain Injury Unit. "In many acute-care ICUs, anti-psychotic or other highly sedating medications are administered as a first-line treatment to manage agitation and behavior, and research has shown that this approach leads to poorer patient outcomes."

This same physiatrist also follows patients throughout their hospitalization, thus extending Shepherd's emphasis on continuity of care, says Mickey Hitch, RN, NREMT-P, a nurse educator trained in emergency medical services. "This

early, team-directed approach also helps prevent secondary complications – pneumonia, contractures and decubitus ulcers that are frequently seen in the rehabilitation setting and can lengthen patients' hospitalization," he adds.

Shepherd Center maintains an extremely low rate of hospital-acquired infections and ventilator-acquired pneumonia (even going for more than a year with no VAP cases). Dr. Zadoff, who has treated patients at Shepherd for more than 25 years, and his team of respiratory therapists and nurses work collaboratively to minimize complications and lower infection rates by providing good respiratory care. That care includes aggressive ventilator weaning in appropriate patients (up to four patients at a time) and infection-control precautions. They also try to limit the use of antibiotics, especially broad-spectrum formulations, which also kill good bacteria in the body and leave patients vulnerable to *c. difficile* and other hospital-acquired infections.

"We're following evidence-based protocols set by various infection-control and pulmonary groups for what we know works to reduce risk and implementing these guidelines with religious zeal," Dr. Zadoff explains. "My job is to keep people alive and get them as healthy as possible."

Caring for Persons with Disorders of Consciousness and Their Families

By Susan Johnson, MA, CCC, CCM
Director of Brain Injury Services, Shepherd Center

Providing treatment for people who have disorders of consciousness (DOC) has become a challenge in health care today. Young people with DOC often do not fit into the defined levels of care the industry recognizes because of their medical complexity and inability to engage fully in rehabilitation. With the rise of managed care and changes in the Medicare payment system, reimbursement for specialized services has eroded.

Persons with DOC are now admitted to long-term, acute-care hospitals for medical stabilization. If they do not emerge, they are transferred to skilled nursing homes, where specialized brain injury care is typically not available, or discharged to home, where families must provide intensive care.

Because families often want specialized care for their loved ones with DOC, Shepherd Center's Acquired Brain Injury Program developed a DOC program 10 years ago. It is called PREP (Pre-Rehabilitation and Education Program) and manages the complex, acute medical needs of patients and facilitates emergence, complication prevention and rehabilitation readiness. The four- to six-week program also provides didactic and hands-on, experiential training for families so that they can care for their loved ones at home in cases where persons with DOC do not emerge.

Since 2004, PREP has admitted more than 200 patients with Rancho scale ratings of 2 to 3. PREP patients receive one and a half to three hours of daily therapy, depending on the patients' response to interventions. PREP also emphasizes rest and structure. About 65 percent of our DOC patients emerge and transfer to inpatient rehabilitation.

Shepherd's trained staff use the Coma Recovery Scale-Revised to assess patients' levels of arousal, engagement and emergence. Pharmacological management is used to facilitate emergence. Treatment interventions focus on nutrition, mobility, positioning and seating, cognition, communication, swallowing, spasticity and tone management, and storming.

PREP is unique in the treatment team's work with patients' families to develop individualized plans that incorporate patients' pre-injury interests into patients' programs.

Shepherd neuropsychologists provide a lecture series that explains the brain injury, brain-behavior relationships and expectations about DOC. Patients' physiatrists, case managers and family members meet for a medical conference within seven days of admission to review patients' baseline assessments, treatment plans and estimated prognosis for emergence. The treatment team works a delicate balance of instilling hope while encouraging proactive planning for disability. The case manager, nurses and therapists work closely in managing the educational and discharge plans to meet the needs of patients and families, while encouraging them and providing hands-on training.

For persons with DOC who are unlikely to emerge in the short-term, an apartment in the brain injury unit is available for family members and patients to stay over a weekend to practice home care with the support of the treatment team. This experience helps families feel comfortable in caring for patients at home. A therapeutic recreational specialist provides community outings with families



Physiatrist Payal Fadia, M.D., treats PREP and other brain injury patients at Shepherd Center. Photo by Louie Favorite

to explore community barriers and encourage community involvement.

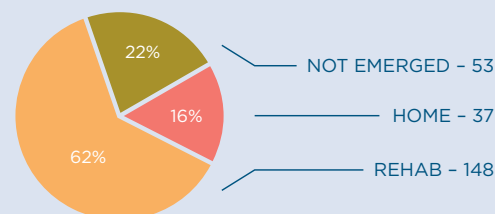
For support at home, Shepherd's telehealth program provides interaction with a speech-language pathologist who monitors patients' arousal and provides suggestions for improved care. Shepherd's Marcus Community Bridge Program provides resource coordination for up to one year to assist in the patient's transition to the community. Re-hospitalizations are almost non-existent for issues related to PREP patients' injuries.

Shepherd's PREP Committee meets regularly to review and evaluate innovative approaches for medical and technological support to achieve the best outcomes for patients. (See attached grid.) Shepherd's director of brain injury research, Ron Seel, Ph.D., chairs the Disorders of Consciousness Committee for the American Congress of Rehabilitation Medicine, exemplifying Shepherd's commitment to evidence-based practice and excellent care.

Researchers collected data on 238 patients who were discharged from the Pre-Rehabilitation Education Program (PREP) at Shepherd Center from 2004 through mid-2010. Patients are divided into three groups:

- 1) Rehabilitation Group (Rehab): emerged from minimally conscious state (MCS) or vegetative state (VS) while at Shepherd Center and advanced to a rehabilitation level of care (Rancho 4 or above)
- 2) Emerged at Home Group (Home): discharged from Shepherd Center while still in MCS/VS and emerged to a higher level of cognitive functioning, requiring more advanced rehabilitation at a later date
- 3) Not Emerged Group (Not Emerged): discharged from Shepherd Center in MCS/VS with no known emergence reported from families

Total PREP Patients



An Aggressive Approach to Managing Spasticity

Shepherd Center clinicians move quickly to reduce and stop progression of spasticity.

By Amanda Crowe, MA, MPH



Darryl Kaelin, M.D., treats brain injury patient Tyson Ward for spasticity with a BOTOX injection. Photo by Louie Favorite

More than 90 percent of the patients admitted to Shepherd Center's Acquired Brain Injury Unit have sustained very severe brain injuries. Many have deep-brain lesions and, as expected, manifest sequelae of upper motor-neuron syndrome, including hypertonia and spasticity in one or more extremities.

"We are a hospital that frequently treats spasticity because all of our patients have the types of injuries – spinal cord

and brain injuries, multiple sclerosis and stroke – that can lead to muscle tone and spasticity," says Darryl Kaelin, M.D., medical director of Shepherd's Acquired Brain Injury (ABI) Program. "If not aggressively treated, spasticity can further limit patients' ability to improve, walk or use their arms, and they can lead to contractures of their joints, which requires surgery. Based on experience, our approach is to move quickly and aggressively to reduce and stop any progression of spasticity."

Indeed, almost 75 percent of patients admitted to Shepherd's disorders of consciousness treatment program have spasticity in at least one limb, while 25 percent admitted to the acute rehabilitation program have issues with tone and spasticity.

"At Shepherd, clinicians are highly skilled and experienced in assessing spasticity and implementing singular or multi-modal treatments," Dr. Kaelin says.

"We are unique amongst brain injury rehabilitation centers in that we routinely use serial casting as a first-line treatment for upper- and lower-extremity spasticity," he explains. "We have also had success and routinely use higher than average doses of BOTOX® in multiple limbs with no side effects. Frankly, our treatment approach is time-

and financial resource-intensive, but we are happy with the benefits we see for our patients."

Lauren Greenfeld, PT, DPT, NCS, physical therapy manager of the Acquired Brain Injury and Neurospecialty Programs at Shepherd, says: "As soon as patients are admitted, we evaluate spasticity, and the team creates a multidisciplinary therapeutic plan. We also consult with our pain clinic, neurosurgery and orthopedic surgery specialties to ensure the best outcomes. We use these spasticity therapies along with functional-task training – standing, feeding oneself and transfers."

Shepherd Center has been at the forefront of managing spasticity for years. Shepherd participated in early research that led to the approval of now-standard therapies for reducing spasticity – including BOTOX® and intrathecal Baclofen. More recently, Shepherd therapists have collected data evaluating the use of electrical stimulation, including the Bioness L300 foot-drop stimulator, Bioness H200 for upper extremities and RT300 functional electronic stimulation bicycle.

Such multidisciplinary care upholds Shepherd's ongoing commitment to caring for the whole patient to maximize function and quality of life, Dr. Kaelin says.

Shepherd Center's Brain Injury Medical Director Imparts Expertise on Spasticity Management

As a nationally recognized leader in physical medicine and rehabilitation, Darryl Kaelin, M.D., medical director of Shepherd Center's Acquired Brain Injury Program, prides himself on helping patients who have sustained significant setbacks regain function and independence. In particular, he emphasizes the treatment of spasticity to prevent its potentially disabling effects.

"Dr. Kaelin is one of the nation's leading lecturers and clinicians in the area of spasticity management, with specific expertise in the care of adults with functionally limiting neurologic injury," says David X. Cifu, M.D., executive

director, Center for Rehabilitation Sciences and Engineering at Virginia Commonwealth University. "He is one of only a handful of academic physiatrists with the specialized skills needed to offer the full spectrum of services required for this challenging patient population – from conservative rehabilitative strategies such as stretching, casting and progressive exercise to interventional procedures."

Dr. Kaelin provides reassurances to families about the inevitable ups and downs of intense rehabilitation and works to meet patients' individual needs.

At a national level, Dr. Kaelin understands the educational needs of physiatrists and now chairs the program committee for the American Academy of Physical Medicine and Rehabilitation. Dr. Kaelin gives numerous presentations on spasticity management at national meetings, including Contemporary Forums in 2008, the International Conference on Spinal Rehabilitation in 2009, the American Academy of Physical Medicine and Rehabilitation in 2010 and the 2010 North American Neurorehabilitation Symposium co-hosted at Shepherd Center. (See article, page 6.)



I knew that if I was alive, I was going to battle and push forward. I wanted to meet my goals. The people at Shepherd helped me do that and were so comforting.

Gabriel Rodriguez, former brain injury patient at Shepherd Center

Gerald Bilsky, M.D., right, visits with former patient Gabriel Rodriguez, who has made a remarkable recovery from a brain injury. *Photo by Louie Favorite*

Planning for a Promising Future

Former Shepherd Center brain injury patient experiences a remarkable recovery, plans to apply to medical school.

By Bill Sanders

Gabriel Rodriguez is finishing college and plans to apply to medical school and become an orthopedic oncologist. When you've beaten the kind of odds Gabriel has, it's hard to find someone who doubts that this young man has a promising future.

He fought to survive a 2005 automobile accident caused by another vehicle that T-boned the car in which Gabriel was a passenger. He sustained a severe traumatic brain injury and multiple injuries to his legs. Gabriel spent more than three months in a minimally conscious state.

"No one thought he had much of a chance," recalls Gabriel's mother, Lucila Tellado. "We got there (Grady Memorial Hospital in Atlanta) and didn't know if he was alive or dead, and the next several months were very hard on us. But he's a fighter."

Gabriel's family also credits Shepherd Center for her son's recovery. Gabriel completed Shepherd's inpatient and day rehabilitation programs.

"I don't think he'd be where he is without having been at Shepherd," Lucila says. "Everyone was so caring.... It's amazing how a person arrives there with no hope and how they can instill so much."

Gabriel's Shepherd Center physician, Gerald Bilsky, M.D., calls his patient's recovery one of the most amazing he's

seen. "He was a very sick young man," Dr. Bilsky says. "He was not responsive at the beginning in ICU, and we weren't sure if he'd emerge from a minimally conscious state. A lot of what he accomplished has to be attributed to him, his internal drive and perseverance. He exceeded what everybody thought he could achieve."

Dr. Bilsky notes that the complexity of Gabriel's condition required an innovative medical approach. He and the treatment team used various interventions. Multiple medications were administered, and comprehensive, interdisciplinary therapies were provided. "Combinations of casting, physical therapies and modalities, and pharmacologic treatments helped Gabriel greatly," Dr. Bilsky says.

Once Gabriel became fully oriented and aware of his challenges, he had to overcome doubts and persevere.

"I cried every night at first," Gabriel recalls. "I didn't know what would happen. I kind of thought I was screwed. I had lost a lot of muscle and was really, really skinny."

"I never lost hope, but at the same time, I was doubting, if that makes sense," Gabriel adds. "I knew that if I was alive, I was going to battle and push forward. I wanted to meet my goals. The people at Shepherd helped me do that and were

so comforting and encouraging, even when I was acting a little lazy in therapy."

Before his injury, Gabriel was a straight-A student at Parkview High School in metro Atlanta. And he was preparing to major in biology at Georgia State University in the fall of 2005. After his inpatient rehabilitation stay and outpatient rehabilitation at Shepherd Pathways, Gabriel re-enrolled at Georgia State University (GSU) in the fall of 2006. He's sailed through the first three years of college, shadowed an orthopedic oncologist and plans to apply to medical school in a year or so.

Gabriel credits his Shepherd treatment team for much of his recovery. He's also grateful for the Emory University orthopedist who fixed his knee and inspired his career plans.

Shervin Oskouei, M.D., performed knee replacement surgery on Gabriel, and as they got to know one another, Dr. Oskouei invited Gabriel to observe his work with patients. The experience made Gabriel think orthopedics is the medical specialty he wants to pursue.

Ultimately, though, a higher power gets Gabriel's greatest thanks.

"I'm not 100 percent yet," he says. "I still have some strength to rebuild. But for being where I was to where I am now, I give thanks to God."

Shepherd Center Hosts 2010 North American Neurorehabilitation Symposium

Scientists, engineers and clinicians discuss emerging trends in neurorehabilitation.

Scientists, engineers and clinicians from around the world gathered at Shepherd Center in Atlanta in late August to hear the latest information on neurorehabilitation, motor learning and motor control, and robotic technology in rehabilitation. Presenters addressed a broad range of conditions including spinal cord injury, stroke, traumatic brain injury, cerebral palsy, and multiple sclerosis.

More than 150 people attended the two-day symposium, which Shepherd co-hosted and organized with Hocoma, the Swiss medical technology company that specializes in robotic rehabilitation therapy for neurological movement disorders. At the event, Hocoma's latest robotic device, the Lokomat® Nanos, made its North American debut. The device was designed to make Lokomat® training more affordable for a broader group of rehabilitation centers. Shepherd Center will be the first center on the continent with the device and will work with Hocoma on its implementation in clinical practice.

Attendees visited with leaders of companies and manufacturers in the neurorehabilitation industry, heard presentations, observed medical technology demonstrations, and participated in roundtable discussions. In particular, attendees received hands-on experience and training using Hocoma's Lokomat®, Armeo® and Erigo® systems.

"The neurorehabilitation of brain injury survivors has been notably facilitated by the establishment of normal movement patterns and objective measurement of patient effort using advanced equipment like the Lokomat, Armeo and Erigo produced by Hocoma," says Darryl Kaelin, M.D., medical director of Shepherd Center's Acquired Brain Injury Unit. "We appreciate Hocoma's contribution to the field both clinically and in research."

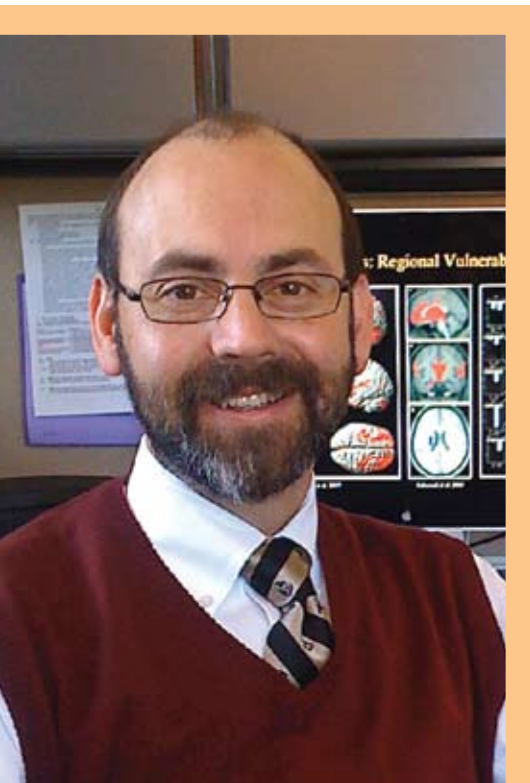
The symposium provided a productive platform to discuss trends in neurorehabilitation, to exchange ideas, and to gain knowledge in

the assessment and use of new technologies and therapy concepts, says conference co-organizer Stefan Bircher, Ph.D., executive vice president of Hocoma.

Five plenary speakers from leading research institutions addressed key topics, including the future of robotics in neurorehabilitation, robotics for upper-extremity rehabilitation, and robotics and motor learning.

Shepherd research speakers included Dr. Kaelin; Keith Tansey, M.D., Ph.D., director of spinal cord injury (SCI) research; and Deborah Backus, PT, Ph.D., associate director of SCI research, and Sarah Morrison, PT, spinal cord injury program director.

More information about the presentations and posters given at the symposium is available at NANRS2010.com.



David B. Arciniegas, M.D.

David Arciniegas Speaks at Shepherd Center Research Day

By Sara Baxter

David B. Arciniegas, M.D., FANPA, CBIST, Director, Neurobehavioral Disorders Program, and Associate Professor of Psychiatry and Neurology, University of Colorado School of Medicine, was the featured speaker at Shepherd Center's Research Day on Nov. 11.

In his speech titled "Pharmacologic Facilitation of Neurobehavioral Rehabilitation after TBI: Emerging Approaches," Dr. Arciniegas discussed new strategies for using drug interventions and neuroimaging to facilitate rehabilitation and recovery in people with brain injuries.

"Dr. Arciniegas is known internationally for his expertise on neuropsychiatric

disturbances and treatments following brain injuries," says Ron Seel, Ph.D., Shepherd's director of brain injury research. "In keeping with our goal to bring in speakers who can impact our clinical practice and research goals, we were honored to have him speak at this year's Research Day."

Research Day is an annual event at Shepherd in which clinicians present posters and papers to showcase their research. Awards are given for the best paper and the best poster.

"Research day is a highly visible way that Shepherd recognizes clinicians for conducting and incorporating research into their practice," Dr. Seel says.

Shepherd Center ABI Staff Publications and Presentations

Selected Publications

Anschutz, J.R., Luther-Krug, M., Seel, R.T. "An Electronic Driving 'Coach' for Persons with Brain Injury: Development and Proof of Concept Case Study." *Topics in Stroke Rehabilitation (in press)*.

Elleberg, D., Henry, L.C., Macciocchi, S.N., Guskiewicz, K.M., Broglio, S.P. "Advances in sport concussion assessment: From behavioral to brain imaging measures." *Journal of Neurotrauma*. 2010. 26(12):2365-82.

Johanson, M., Greenfeld, L., Hung, C., Walters, R. and Watson, C. "The Relationship Between Forefoot and Rearfoot Static Alignment in Pain-Free Individuals with Above-Average Forefoot Varus Angles." *Foot & Ankle Specialist*. June 2010 3:112-116.

Macciocchi, S. N. "Doing good: The pitfalls of beneficence." *Journal of Head Trauma Rehabilitation*. 2010. 24(1): 72-74.

Seel, R.T., Macciocchi, S., Kreutzer, J.S., Kaelin, D., Katz, D.I. "Diagnosing Major Depression following Moderate to Severe TBI: Evidence-Based Recommendations for Clinicians." *US Neurology* (in press).

Seel, R.T., Sherer, M., Whyte, J., Katz, D.I., Giacino, J.T., Rosenbaum, A., Hammond, F.M., Kalmr, K., Pape, T.L.B., Zafonte, R., Biester, R.C., Kaelin, D., Kean, J., Zasler, N. "Practice Parameter. Assessment Scales for Disorders of Consciousness: Evidence-Based Recommendations for Clinical Practice and Research." *Arch Phys Med Rehabilitation* (in press).

Seel, R.T., Macciocchi, S., Kreutzer, J.S. "Clinical Considerations for the Diagnosis of Major Depression after Moderate to Severe TBI." *Journal of Head Trauma Rehabilitation*. 2010 (Mar-Apr 25(2):99-112

Selected Presentations

Brown, A., Mattingly, E. "Disorders of Consciousness: An Integrated Approach." Alabama OT Association. Orange Beach, Ala. September 2010.

Farris, K. "Managing Visual Perceptual Deficits through the Stages of Brain Injury Recovery." Chattanooga Area Brain Injury Association. Chattanooga, Tenn. March 2010.

Farris, K. "Assessing New Technology for Rehabilitation Programs." TBI Model Systems. Philadelphia, Penn. April 2010.

Farris, K. "Managing Visual Perceptual Deficits through the Stages of Brain Injury Recovery." Calhoun, Georgia, Brain Injury Symposium. October 2010.

Farris, K., Kaelin, D., Gillot, M. "Techniques to Augment Upper Limb Rehabilitation." AAPMR Assembly. Seattle, Wash. November 2010

Herbst, G. Fieldwork Educator Certificate Workshop. American Occupational Therapy Association. Atlanta, Ga. June 2010.

Kaelin, D., Seel, R.T., Giacino, J. "Disorders of Consciousness: Assessment and Treatment." Symposium presented at the 2009 Joint American Congress of Rehabilitation Medicine and American Society of Neurorehabilitation Annual Meeting, Denver, Colo.

LeCroy, T., Nyankori, L. "The Art and Science of Distinguishing Disorders of Consciousness." Association of Rehabilitation Nurses. Orlando, Fla. September 2010.

Macciocchi, S.N., Seel, R.T., Warshowsky, A. "Traumatic Brain Injury Co-Occurring with Spinal Cord Injury: Assessment, Incidence and Impact on Outcomes." Symposium presented at the 2009 American Spinal Injury Association Annual Meeting, Dallas, Texas.

Macciocchi, S.N., Seel, R.T., and Warshowsky, A. "Impact of cognitive functioning on spinal cord injury outcomes." American Congress of Rehabilitation Medicine. Denver, Colo. 2009.

Macciocchi, S.N. "Spinal cord injury and co-occurring traumatic brain injury: Incidence and assessment." Contemporary Forums. Orlando, Fla. 2009.

Seel, R.T., Macciocchi, S.N., Kaelin, D. "Clinical Considerations in the Diagnosis and Treatment of Major Depression after Moderate to Severe TBI." Symposium presented at the 2010 Joint American Congress of Rehabilitation Medicine and American Society of Neurorehabilitation Annual Meeting. Montreal, Canada.

Seel, R.T., Macciocchi, S.N., Barlow, K., Velozo, C.A. "Assessing Safety Risk after Brain Injury: Item Development and Content Validation." Deborah L. Wilkerson Early Career Award presentation at the 2010 Joint American Congress of Rehabilitation Medicine and American Society of Neurorehabilitation Annual Meeting. Montreal, Canada.

Seel, R.T., Macciocchi, S.N. "Diagnosing Depression in Rehabilitation Settings." Symposium presented at the 2010 Association of Rehabilitation Nurses Annual Meeting. Orlando, Fla.

Seel, R.T., Macciocchi, S.N., Lecroy, T. "Assessing Safety Risk after Brain Injury: Ethical and Practical Considerations." Symposium presented at the 2010 Association of Rehabilitation Nurses Annual Meeting. Orlando, Fla.

Seel, R.T., Katz, D., Sherer, M., Whyte, J. "Assessment Scales for Disorders of Consciousness: An Evidence-Based Review." Symposium presented at the 2010 International Brain Injury Association 8th World Congress on Brain Injury. Washington, D.C.

Director of Brain Injury Research Recognized for His Work

By Sara Baxter



Ron Seel, Ph.D.

Ron Seel, Ph.D., Shepherd Center's director of brain injury research, was awarded the 2010 American Congress of Rehabilitation Medicine's (ACRM) Deborah

L. Wilkerson Early Career Award. The award is given to researchers who have demonstrated significant contributions to rehabilitation research within 10 years of completing their training.

Dr. Seel, who earned a doctorate in counseling psychology at Virginia Commonwealth University, has published 35 peer-reviewed articles on brain injury, spinal cord injury and Parkinson's disease outcomes.

Dr. Seel has published multiple studies on depression following brain injury and leads the ACRM Brain Injury Interdisciplinary Special Interest Group's Disorders of Consciousness Task Force. The task force conducted a systematic review of assessment scales for disorders of consciousness that

has been approved by the ACRM as a practice parameter.

"I feel grateful to be recognized for doing research," Dr. Seel says. "It's a positive reflection on Shepherd Center and Virginia Commonwealth University. Research is such a team effort – from the people who volunteer their time as study subjects to the research coordinators and the co-investigators who conduct studies. Shepherd is a great place to do research, and I appreciate the administrative support I receive."

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NeuroTransmitter covers news and information about research, medical treatments and healthy living for people who have experienced an acquired brain injury. It is published twice a year. For more information, call **404-352-2020**.

Available online at www.shepherd.org/publications.

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international educational events including the 2010 North American Neurorehabilitation Symposium. Our physicians, researchers and staff have been invited to present on brain injury topics at a wide array of national and international conferences in 2010 including the American Academy of PM&R, Association of Academic Physiatrists, American Congress of Rehabilitation Medicine, International Brain Injury Association, National Association of Neuropsychologists and the Association of Rehabilitation Nurses, to name a few. We also sponsor an annual Research Day to recognize our clinicians who conduct research and a TBI Grand Rounds series with invited national speakers to address topics of clinical and research interest.

This edition of *NeuroTransmitter* focuses in more detail on the programs that make us unique. We are grateful for the resources we have and our brain injury clinicians, who have embraced a culture that strives for excellence in service delivery and outcomes.

Shepherd Center CEO Assumes Presidency of ACRM



Gary Ulicny, Ph.D.

In October, Shepherd Center CEO Gary Ulicny, Ph.D., became the president of the American Congress of Rehabilitation Medicine (ACRM), an organization whose mission is to promote and improve rehabilitation research and care.

Dr. Ulicny's role will be to advance ACRM's strategic agenda, as well as to oversee governance of the organization. He says he has three goals for his one-year term: increase governmental funding for the organization to further research; continue communicating the importance of rehabilitation research to people with catastrophic injuries; and increase membership, especially internationally.

Dr. Ulicny, who spent the last year serving as president-elect of ACRM, has been involved with the organization for the past 20 years. About a dozen Shepherd professionals are also members of ACRM.

"ACRM is the largest interdisciplinary group dedicated to advancing rehabilitation practice and research," Dr. Ulicny says. "I am very honored to be a part of an organization that is so important to the field. You always want to give something back, and I'm happy to be involved in the process of advancing rehabilitation medicine."