BRIDGE TO BRAZIL
Adapting an assessment tool is no simple translation task

WHEN EVERY STEP IS AN OBSTACLE
Childhood obesity can make getting from here to there a challenge

FILMING FRIENDSHIP
Helping to strengthen and promote relationships among teens with autism

TRIUMPH OVER TRAUMATIC BRAIN INJURY
Project CAREER prepares students for the rigors of school and work

A NEW HERO
Severe mental illness affects 6 percent of Americans, but few can access the best—or even adequate—care
Dear Colleagues,

We are delighted to send you this special issue of Inside Sargent highlighting the Department of Occupational Therapy at Boston University’s College of Health & Rehabilitation Sciences: Sargent College. This collection of articles offers a glimpse of our faculty and students’ exciting research and academic activities during the past several years.

Our faculty are dedicated to excellence in entry-level and post-professional education and to building the body of knowledge related to occupation, participation, and health. For example, Assistant Professor Jessica Kramer, with funding from the National Institute on Disability, Independent Living, and Rehabilitation Research (formerly NIDRR), has developed and is evaluating an intervention to help adolescents with disabilities to identify environmental barriers and advocate for supports and accommodations. A recipient of an NDRE/CIBER K12 fellowship, Professor Kramer is also working on an innovative self-report functional assessment for youth with disabilities.

Assistant Professor Simone Gill, also a K12 fellow, recently received funding from NIH to support her investigation of the impact of massive weight loss on a person’s ability to adapt walking to the environment. Two of our senior faculty, Professor Kim Mueser and Associate Professor Susan McCrack, are conducting internationally recognized work on improving employment outcomes for individuals with serious mental illness. On a related theme, Clinical Professor Karen Jacobs is participating in a multisite project to help college students who have experienced a traumatic brain injury succeed in their education and employment. In addition to their contributions to the field, these research programs also provide many of our occupational therapy students with firsthand understanding of clinical research.

Consistent with the recent recommendation from the American Occupational Therapy Association Board, we are changing our entry-level Master of Science in Occupational Therapy (MSOT) program to a Doctor of Occupational Therapy (OTD) program. This is planned as a three-year blended program that includes both on-campus and online courses to build on our faculty’s expertise in delivering outstanding quality distance education. In spring 2015, the program was awarded Candidacy status by the Accreditation Council for Occupational Therapy Education (ACOTEE), and we are looking forward to welcoming our first class in September 2016. We will continue to offer our highly regarded online post-professional OTD program. We also collaborate with faculty from Sargent’s Department of Physical Therapy in the interdisciplinary Rehabilitation Sciences PhD program.

The Department of Occupational Therapy at Boston University prides itself on our history of student and faculty engagement in the profession and the larger health care field. In addition to supporting the work in our research labs, students regularly contribute to professional publications and presentations at the state and national OT conferences. Other examples of recent contributions include involvement in preparing position statements for AOTA, locating and reviewing evidence for AOTA systematic conferences. Other examples of recent contributions include involvement in preparing position statements for AOTA, locating and reviewing evidence for AOTA systematic conferences. Other examples of recent contributions include involvement in preparing position statements for AOTA, locating and reviewing evidence for AOTA systematic conferences. Other examples of recent contributions include involvement in preparing position statements for AOTA, locating and reviewing evidence for AOTA systematic conferences.

With warm regards,

Wendy Coster
Professor and Department Chair
The Pediatric Evaluation of Disability Inventory (PEDI), a functional assessment for children up to age seven, tests proficiency in mobility, daily activities, and social/cognitive skills to help therapists construct rehabilitation programs for children with disabilities. Developed by Wendy Coster, a professor and chair of the Department of Occupational Therapy, and a team of colleagues, the instrument has become widely used in the United States and other countries—including Sweden, Australia, Israel, Slovenia, Hong Kong, Iceland, and Italy—since its introduction 22 years ago. Coster’s former student Marisa Mancini (’97) brought the tool to her native Brazil, where it has inspired a profound shift in the rehabilitation field.

In 1992, Coster had just launched the PEDI when Mancini arrived at Sargent College on a Brazilian government scholarship to pursue a Doctor of Science degree. Mancini translated the assessment into Portuguese as part of her doctoral work. Upon returning to Brazil, she and her husband, Sérgio Fonseca (’97), helped to build a highly ranked rehabilitation sciences program at the Universidade Federal de Minas Gerais (UFMG). Mancini, now a professor of occupational therapy and rehabilitation sciences at UFMG, introduced the PEDI in Brazil as an alternative to the tests in use at the time, which she believed did not adequately serve children with disabilities.

Prior to the PEDI, the pediatric assessment tools employed in Brazil—and internationally—focused on specific behaviors that were direct consequences of a disease or lesion, such as the presence of reflexes and the quality of muscle tone,” says Mancini. “These behaviors said absolutely nothing about the child’s strategies to meet daily challenges, which were often taken for granted, as most typically developing children learn quickly to brush their teeth, put on a shirt, comb their hair, and other daily tasks.” Children with disabilities can find many of these activities difficult, so these tests could not sufficiently measure their ability to develop everyday skills.

The PEDI was different because it assessed a child’s ability to function within his or her home environment—information therapists could use to develop rehabilitation programs to help young clients acquire the skills they need for daily life. By bringing the PEDI to Brazil, Mancini aimed to “help professionals shift their focus in clinical practice to what really matters to children and families,” she says. Several rehabilitation centers in Brazil have since adopted the PEDI as their primary assessment tool.

In 2012, Coster and her colleagues completed an updated version of the PEDI. Now a computer adaptive test (CAT), the revised instrument, called PEDI-CAT, allows users to track a client’s change in functional performance across the entire developmental period, from infancy to age 20. PEDI-CAT is quicker and more efficient than the original paper test and produces immediate results arranged in a graphic display. So, “we may need to establish Brazilian norms for the instrument,” Mancini says, “to determine whether the US-based computer scoring algorithm norms are appropriate for Brazilian clients.

“Different cultures have different expectations for how and when children should become independent at these tasks,” Coster says. “American parents are big on independence, but we’ve already discovered that in some countries, it’s not a big deal whether the child is doing things independently at the same early age as in the US.” For example, not all cultures have the same timetables for when children should be able to dress themselves, manipulate a knife and fork, and brush their teeth without assistance. So, “we may need to establish Brazilian norms for the PEDI-CAT,” Coster says.

In the meantime, Coster says, “research with properly translated and culturally adapted instruments will inform us about how children’s culture and context influence the timing and sequence of their skill development.”

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In the meantime, Coster says, “research with properly translated and culturally adapted instruments will inform us about how children’s culture and context influence the timing and sequence of their skill development.”

These tools will enable the occupational therapy community worldwide to collaborate and compare assessments of children with disabilities on a global scale.
Walking is second nature to most of us. As we navigate uneven sidewalks or step from the street to the curb, our brains are using subconscious motor planning to get our bodies from here to there in one piece. Studies show that children and adults who have a high body mass index (BMI) and who are overweight or obese have a higher risk for injuries when making their way through their environment.

Simone V. Gill, an assistant professor of occupational therapy and director of Sargent’s Motor Development Lab, is researching how those with a higher BMI modify the way they walk, and how their movements might be different from someone whose BMI is in the normal range. She hopes her answers will help the 18 percent of children in the United States who are classified as obese.

In the summer of 2013—shortly after obesity was recognized as a disease by the American Medical Association—Gill conducted a study to find out whether BMI influences the motor planning and motor skills of children as they cross obstacles. The study involved 9 girls and 13 boys ranging in age from 4 to 13; 12 were overweight or obese. Gill asked them to walk over three obstacles of different heights five times each—one was low, the height of a door threshold; one was medium, the height of a sidewalk curb; and the third was tall, the height of a step.

The children began and ended each series with a walk on flat ground, enabling Gill to compare how they moved when they were not faced with an impediment. She quantified the results using 3-D motion analysis, the same technology used in films to make animated characters appear lifelike, she says. “We put markers all over a person’s body, and there are special cameras that track the markers and tell the computer in 3-D space how your body is moving.”

While there was no pronounced difference in the way they navigated the medium obstacle, the children who were overweight and obese moved differently over the high obstacle than children with typical BMI. “Instead of lifting their foot high, they hiked it out to the side and slung it over,” Gill says. She was surprised that the children who were overweight and obese also moved differently over the low obstacle, which she had thought would be an easier task. “They raised their foot and toes higher, in the same way the kids with typical BMI raised their foot and toes over the high obstacle,” Gill says. “They seemed to know they were supposed to alter their movements, but they didn’t know how. They also tended to lean forward more. These factors suggest they have difficulty with motor planning, which affects their motor skills and increases their fall risk.”

One of Gill’s long-term goals is to determine whether the obstacle-crossing task could be used not only as a diagnostic tool to identify children who are at risk for falls, but also as an intervention to help minimize the risks. “More work needs to be done to figure out how best to help them, because this is a relatively unexplored area,” she says. She is conducting a similar study on overweight and obese adults, which indicates that having them repeat a task might effect change. That repetition, Gill adds, could also help obese children.

“I think practice matters,” she says. “I watch football and basketball players do drills that make them faster and better able to leap over people on the field. And that’s what we’re talking about—being able to adapt your movements to what’s happening in your environment. If you have a typical BMI, you don’t have to practice stepping over things; you already know how. But if it’s hard for you, then practicing actually makes you more aware of your body and less susceptible to injury.”

Practice could lead to other benefits. “We know there’s a decrease in physical activity in these kids, but we don’t know a whole lot about the differences in how they move and how that might influence the fact that they’re not moving as much,” Gill says. “An intervention that could help them with their motor skills and motor planning might enable them to go out and play more.” The ultimate payoff? “An increase in physical activity, in turn, could help them maintain a healthy weight.”

Children and adults who have a high body mass index and who are overweight or obese have a higher risk for injuries.
A 14-year-old boy looks into a video camera and reflects on the need for friendship. “I think you want friends because people are social beings and we’re all born to want to be around other people,” he says. “It’s just how we are.”

On the surface, there’s nothing particularly notable about that statement. But it was made by an adolescent with autism spectrum disorder (ASD), which gives those words a powerful resonance. Regardless of their age, most people with ASDs have difficulty developing and maintaining friendships. They want friends, as that 14-year-old attests and research confirms, but generally lack the social skills to create those bonds.

Now, two occupational therapy professors are examining whether video might be a tool in helping effect change in high-functioning adolescents with ASD. Associate Professor Gael Orsmond and Clinical Professor Ellen Cohn are conducting a feasibility study, Videos of Important People (VIP), to determine whether the use of video can help teens improve their social skills and strengthen friendships. The quoted 14-year-old boy was among the first five participants in the ongoing intervention project.

“Much of the research in the autism field has been focused on the social impairments of people with autism,” says Cohn. “But some people with ASDs do have friends, and we thought, ‘Rather than focusing on their social communications deficits, why don’t we flip this paradigm on its head and try to understand what adolescents who have autism are doing that works for them. How are they relating to their friends? What do they think about friends?’”

A WINDOW INTO AUTISM

In a pilot project, five adolescents on the autism spectrum were given disposable cameras and asked to take pictures of their social experiences, and of things that were meaningful to them. Those photos were then used as prompts in the interviews that followed, and proved to be effective at eliciting responses. A second BU-funded study used video cameras.

“Adolescents on the autism spectrum [generally] like technology, and we thought that video cameras might give us a window into their perspectives,” says Orsmond. “We worked with three adolescents and got really interesting data. One of the things we saw is that oftentimes these adolescents do have a good understanding of friendship, but they can’t apply it to their everyday life. We also became aware that the camera seemed to be a facilitator of friendship.”

Excited by the possibility that the video camera had the potential to strengthen and promote friendship among adolescents with ASD, Cohn and Orsmond wanted to find out whether an intervention was, in fact, feasible with this population. Recently, they began an 18-month study with support from the Deborah Munroe Noonan Memorial Research Fund. The plan is to collect data from 20 teenagers ranging in age from 13 to 17 before the study is completed. Any adolescent taking part in the study must already have a friend, which has made recruitment challenging.

The first group was made up of five boys ranging in age from 13 to 14. (Autism is nearly five times more prevalent in males.) Pre- and post-intervention measures were taken, both quantitative and qualitative. Orsmond specializes in quantitative research, Cohn in qualitative. Each boy was given a video camera for three weeks and asked to turn it on when he was doing something with a friend. They also received an instruction book with weekly assignments and suggested questions for interviewing friends, such as, “How did you become friends?” “What do you like to do together?” The other major component of the video was a weekly monologue in which the adolescents talked directly to the camera and reflected on their friendships, again with specific prompts.

“We do what we call a positive self-review,” says Cohn. “Each week, we edit the video clips and show the adolescents examples of the behaviors we’ve observed.” One boy jokes and laughs with a friend. Three boys (in separate videos) share memories with friends by talking about something they experienced together. A research assistant meets with the adolescent at home, watches the clips with him, and discusses and reinforces his display of positive behavior. The boy keeps the video clip collection together. A research assistant meets with the adolescent at home, watches the clips with him, and discusses and reinforces his display of positive behavior. The boy keeps the video clip collection during the week, and is asked to watch it at least three times.

“It’s video self-modeling: if you see yourself doing something well, you’re more likely to do it again,” says Orsmond. “What’s interesting is that some of these kids are surprised when we totally disregard the negative stuff, because so much of their intervention has been people telling them what they’re not doing right.”

BY SHERYL FLATOW

HOW TALKING ON CAMERA COULD HELP TEENS WITH AUTISM BUILD STRONGER FRIENDSHIPS
Limitless Potential

Orsmond and Cohn hope that, over time, video will help improve the quality of life for some kids. Orsmond, though, they have to determine whether the intervention is even viable on a larger scale. “We’re looking at its feasibility both logistically and in terms of the research design,” says Cohn. “Is it feasible to recruit people? Is it feasible to send research assistants to their houses? Is this something families and adolescents can do in their daily lives? Are our measures sensitive enough to capture change? And is there change in their self-perception of their social competencies? We want to identify characteristics of high-functioning adolescents who will most benefit from the intervention. From a qualitative perspective, we want to try to understand what the friendship experience is about, and the things that they’re doing that are working well.”

The feedback from families has been enthusiastic. “Some of the parents have told us that they’re going to continue the video approach with their kids,” says Orsmond. “They also felt that if the use of video proves to be effective, its potential is limitless. ‘It could influence service systems and researchers, because people might promote friendship. This is about friends?’ says Orsmond. ‘And Ellen Cohn and Orsmond were also invited by the Kennedy Center, Washington, DC, to develop a guide to help performing arts organizations create programming for visitors with sensory, social, and learning needs. The guide outlines a step-by-step process for producing performances that promote inclusivity throughout the theater experience, from the stage (including sound and lighting) to the lobby (training front of house staff). As the guide states, ‘People with sensory, social, and learning disabilities have the capacity to participate in a range of community activities when provided the opportunity and appropriate supports.’” —Lauren Enrich

First the good news

“Many of the soldiers,” says Cohn, “are getting treated faster, are going through a whole variety of procedures so that any clinician could do this; this isn’t an approach that needs to be done by a certain discipline. We’re hopeful that clinicians will learn to focus on the positive. What is this child doing well, and how do we increase the frequency with which we do it? We don’t have a good way to capture it, but it’s so meaningful to a kid when you say, ‘Look at what a great job you did in this interaction.’ The theory is that it increases self-esteem and self-concept related to social competence. If it works, and we can capture it and measure it, that could be really powerful.” —Ellen Cohn

Discovery

Making Museums Inclusive

“I am going to the Boston Children’s Museum today. When I see the Hood Milk Bottle I will know I am there!” This is the first page of a booklet designed to make the museum more inclusive for visitors with an autism spectrum disorder. It includes simple tips. “(If the museum gets too loud, my family and I can find a quiet spot on the third floor bridge to sit and take a break)” for parents and educators to review with children in advance of their visit so they will know what to expect and how to behave. Ellen Cohn and Gael Orsmond worked with graduate student Allison Biondo (’12) to develop the booklet as part of a grant from the Institute of Museum and Library Services, through which they are collaborating with the Museum of Science, the Boston Museum of Fine Arts, and the Children’s Museum to create more inclusive environments.

Cohn and Orsmond were also invited by the Kennedy Center, Washington, DC, to develop a guide to help performing arts organizations create programming for visitors with sensory, social, and learning needs. The guide outlines a step-by-step process for producing performances that promote inclusivity throughout the theater experience, from the stage (including sound and lighting) to the lobby (training front of house staff). As the guide states, “People with sensory, social, and learning disabilities have the capacity to participate in a range of community activities when provided the opportunity and appropriate supports.” —Lauren Enrich

Web Extra

Visit bu.edu/autismconnections and click on Community Inclusion and Accessibility to download the museum guides.

Military Mission

For Two Occupational Therapy Students, Improving the Rehabilitation of Soldiers Injured in Battle Has Personal Meaning

By Rachel Johnson

First the good news for America’s soldiers: If they sustain a serious injury in battle, they’re more likely to survive than ever before. The bad news: Two BU Sargent College occupational therapy (OT) students focused on the care of wounded warriors, is that they might not always get the help they need to transition back to civilian life—or to serving their country again.

Jeanne Brady (OT, ’12), a student in Sargent’s post-professional distance education doctoral program, is developing an online course to train occupational therapists to work with the wounded warrior (WW) population. “There isn’t much education on treating wounded soldiers,” she says. “Dealing with the whole WW population can be very foreign to OTs, but understanding military culture is key to treating these patients.” Her course is designed to bridge that educational gap. “This is a big population,” she says. “We need to make sure we provide OTs with the education they need in order to work with these soldiers.”

Brady has been inspired by the people around her. The wife of an active-duty officer in the US Marine Corps, she has seen friends return from duty with combat-related physical injuries. “I was just thinking, what can I do to help them transition to civilian life? It was about identifying an area of need.” Her course addresses military-specific issues: how to treat combat-related injuries, typical mild traumatic brain injury symptoms to look for, and how to understand military language for more effective communication. “Now, I want to disseminate this information as far as possible,” she says. “That’s why I’m developing an online course.”

Kristen Jackson’s (’13) program is also about spreading as much information as possible about army-specific OT. The entry-level master’s student has spent a year talking to army OTs— including Colonel Robbiot Aamaker, the army’s chief occupational therapist—to create brochures to distribute at five major military bases. Her aim is to minimize the debilitating effects of OT treatable conditions, such as traumatic brain injury, by educating army health care professionals to recognize opportunities for prompt referrals. She says that military personnel can be so focused on horrific physical injuries that cases where OT could be applied can get missed. “Soldiers are coming in with issues that an occupational therapist could treat early on, and they’re being sent through a whole variety of people before they get to an OT,” she says. “And then we’re playing catch-up.”

Early intervention, she adds, “can mean the difference between a soldier surviving now; they’re heroes to me, and they’re being sent through a whole variety of people before they get to an OT.” —Kristen Jackson

Career- and life-ending injuries hit close to home for Jackson, too. “The job that my fiancé has, a bomb technician in the army, is often associated with higher incidences of traumatic brain injury,” she says. “It’s something that his soldiers experience on a regular basis.” Helping these soldiers get on with their lives is what this education drive is all about for both Jackson and Brady. “Now soldiers are getting treated faster, are going through rehab faster,” says Jackson. “People who couldn’t have survived before are surviving now; they’re heroes to me, and I’m happy to be supporting them.” —Kristen Jackson

“Soldiers are coming in with issues that an occupational therapist could treat early on, and they’re being sent through a whole variety of people before they get to an OT.” —Kristen Jackson

Jeanne Brady (top) and Kristen Jackson are developing an online course to train occupational therapists to work with the wounded warrior population.

Our eventual goal would be to develop a manual of procedures so that any clinician could do this; this isn’t an approach that needs to be done by a certain discipline. We’re hoping that clinicians will learn to focus on the positive. What is this child doing well, and how do we increase the frequency with which we do it? We don’t have a good way to capture it, but it’s so meaningful to a kid when you say, ‘Look at what a great job you did in this interaction.’ The theory is that it increases self-esteem and self-concept related to social competence. If it works, and we can capture it and measure it, that could be really powerful.” —Ellen Cohn

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Jeanne Brady (top) and Kristen Jackson are developing an online course to train occupational therapists to work with the wounded warrior population.
SPECIAL EDITION  
Inside Sargent

BY SHERYL FLATOW

EAGER TO WORK

ASSAILED BY STIGMA AND ENTANGLED IN FUNCTIONAL IMPAIRMENTS, 80 PERCENT OF PEOPLE WITH A SEVERE MENTAL ILLNESS ARE OUT OF WORK. A PROFESSOR’S PROGRAM IS HELPING MORE FIND—AND KEEP—EMPLOYMENT

BY SHERYL FLATOW

Brooklyn, New York, a man with a bipolar disorder who long had difficulty attaining the work he wanted now owns a limousine company and holds down a second job. In Portland, Oregon, a man with schizophrenia who never had the confidence to seek employment assisted recently prepared a job application and went on an interview by himself.

Their triumphs are both unusual and encouraging: despite a desire to join the workforce, roughly 80 percent of people with a severe mental illness are unemployed. But these men participated in Thinking Skills for Work (TSW), a cognitive remediation program developed by neuropsychologist Susan McGurk that is having considerable success in enabling those with a severe mental illness to better compete for—and maintain—a job.

“Part of the criteria used to define severe mental illness and eligibility for disability benefits is functional impairment,” says McGurk, associate professor of occupational therapy and a senior researcher at the BU Center for Psychiatric Rehabilitation. “There are a variety of symptoms that interfere with working and those include cognitive difficulties: deficits in areas such as paying attention, learning new information, remembering what you learn, planning, and following through on a plan. These skills tend to be hit rather hard by severe mental illnesses such as schizophrenia and major depression, making it difficult for people to find and keep work.”

McGurk’s program uses complementary approaches that consist of assessing cognitive strengths and weaknesses, examining work experiences to identify obstacles, providing intervention, assisting with job-search strategies, and developing coping skills to help compensate for persistent problems. The program is combined with vocational rehabilitation programs such as supported employment.

“The client works with a cognitive specialist who facilitates the program and is part of a vocational rehabilitation team that includes an employment specialist,” says McGurk. “The relationships with the specialists have proved to be very important to the client. A person needs both a good cognitive program and a good vocational rehabilitation program to attain the work they want.”

A standardized, 24-session computer intervention, which is based in part on cognitive training software known as Cogpack, is one of the standout aspects of TSW. “We developed a training curriculum and tested it in six randomized controlled trials,” says McGurk. “We have found that it benefits cognitive functioning across the different trials.”

The computer program offers exercises in a range of skills, including memory, attention, reasoning, planning, and processing speed. One exercise, called Route, is a street map with five circles representing destinations. The goal is to visit each destination in the shortest distance possible, staying on the street grid. “Some people in our New York City studies want to get a job as a courier,” says McGurk. “We use this task to highlight the planning involved, for example, in being a courier. We’ve had people enrolled in our studies who had lost jobs in the past because they hadn’t planned the route ahead of time and took too long to deliver the packages.”

McGurk recalls a client who lost a restaurant job because he lacked the necessary coping strategies and couldn’t finish his tasks on time. Initially, speed seemed to be the issue. “But we saw that he tried to avoid some of the more sustained attention tasks on the computer, and it turned out that he’d had trouble focusing,” says McGurk. “So we kept an eye on the attention tasks that came up in the curriculum to make sure that he was progressing.” When the client eventually got a job, he and his cognitive and vocational specialist determined that he needed a discreet prompt that would help him stay on task. “They came up with a vibrating watch, so that his coworkers have no idea that he’s receiving prompts every 10 minutes.”

Studies show that working has huge benefits for people with severe mental illness. “It can aid symptom management because people have a regular schedule,” says McGurk. “It reduces stigma. Coming in contact with other people, they often make more friends. And people who are working report a higher quality of life.”

“Part of the criteria used to define severe mental illness and eligibility for disability benefits is functional impairment.”

Jeff Krolick, administrator of the Oregon Supported Employment Center for Excellence, brought together seven community health programs across his state in fall 2012 to launch TSW. “The program is so thorough,” he says. “It enables you to look at the job-retention process in a skill-development way. As people worked with the computer-assisted cognitive software, it allowed us to see, in a very real situation, what kind of supports they needed. And I saw people gain confidence as they practiced the skills through the cognitive strategy class.”

McGurk and her colleagues received a $2.7 million grant from the National Institute of Mental Health for a five-year study to evaluate TSW. “Cognitive programs have become increasingly bundled, as ours is, so it’s not clear what’s necessary,” says McGurk. “We know it works: we’ve done multiple randomized controlled trials. We’ve decided to see whether the computer cognitive training—the most expensive component—is critical to improving cognition and work outcomes or whether it’s enough to provide coping and compensation strategies for dealing with cognitive challenges.”

Early in her career, McGurk heard a participant in a study tell a psychiatrist, “I want a job because I want to be like everybody else.” She says that simple declaration “struck me more than any other statement I’ve heard.” Thanks to McGurk’s work, that life-changing goal now seems to be within reach for those with cognitive impairment.
TRIUMPH OVER TRAUMATIC BRAIN INJURY
PROJECT CAREER PREPARES STUDENTS FOR RIGORS OF SCHOOL AND WORK

BY LESLIE FRIDAY

ANNA SAUCIER’S LIFE CHANGED in an instant during her sophomore year of high school. She remembers zipping across a soccer field to head off a boy on the opposing team who was fast-breaking toward the goal. The center defender of her coed team, Saucier executed a perfect slide tackle (the first in her career) to prevent the point, but her opponent flipped and landed knee-first on her temple.

She immediately knew something was wrong, but continued to play the remaining minute left in the game before collapsing off the field, suffering from the worst of several concussions she’d had during her career as a four-year athlete. An ambulance rushed her to the nearest hospital, where they suspected she had internal bleeding, and transported her to Maine Medical Center in Portland. The hospital confirmed that Saucier had no internal bleeding, but at that point Saucier couldn’t walk, and she had no energy and no memory of the days following the incident. She was placed on morphine for three days of the days following the incident. She and she had no energy and no memory.

Plagued by fatigue, an inability to concentrate, and persistent headaches, Saucier was unable to return to school full time for several months. It was enough to drive the straight-A student and class president crazy. “I got really good at coloring,” she says. The walls of her house quickly filled with artwork—a daily reminder of her slow but steady progress.

Chiropractors, Reiki, massage, and aroma therapies offered limited support. Instead of giving up, Saucier says she got mad: “I forced myself to get better.” She underwent neurological rehabilitation, got a tutor, and enrolled in honors and AP courses her junior year. “People get injuries and they think that’s it,” she says. “That was never an option for me. I know what I’m capable of, and that’s what I had to get back to.” She graduated among the top in her career, applied to BU, and started her freshman year this past fall. While her condition has improved, she still suffers crippling headaches and has trouble with organization, time management, and memory.

Just after she arrived on campus in September, Saucier (CAS’18) visited Disability Services. Staff there recommended she enroll in Project CAREER, a program that uses assistive technology and vocational rehabilitation to improve the academic and employment success of college undergraduates with traumatic brain injury (TBI). She is now among 40 part- and full-time students enrolled in the program, a partnership among Kent State University, West Virginia University, and JBS International, Inc. funded by a five-year, $2.5 million grant from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR) (formerly NIDDR).

“There is a real void in services for students with TBI in helping them transition from being in a student role, graduating from school, and then obtaining a job,” says principal investigator for the BU subcontract Karen Jacobs (’79), a Sargent College clinical professor of occupational therapy. “There are limited resources helping them with that transition period. Every single one of these students could benefit from the intense mentoring and advising that Project CAREER offers.”

Every year, roughly 1.7 million Americans sustain a TBI, often from a car or sports accident or a violent assault, this group also includes soldiers who have been injured by explosive devices. Symptoms vary, but people living with a TBI often experience trouble with memory, concentration, and organization; may be more irritable, tired, or depressed; and may endure crippling headaches. They may find it hard to navigate and understand complex systems and initiate new tasks, often fail to connect with support services effectively, or have difficulty establishing and maintaining relationships. Ongoing cognitive impairments have historically made it more difficult for people suffering from TBIs to find—and maintain—a job.

Students develop a number of strategies to manage their TBI. They may listen to audiobooks if reading is challenging, request note-takers or extra time for tests if their concentration lags, and post sticky notes everywhere to remind themselves of appointments, exams, or medication they could otherwise forget. While these strategies might help them get into a school like BU, Jacobs says, “to be able to be successful as a college student, they need additional support.”

Students enrolled in Project CAREER are fitted with an individualized plan designed to address their specific needs. Amanda Nardone (’13), a BU technology and employment coordinator, sits down with students to discuss their injury, academic difficulties, employment history, and comfort level with technology. The matching person and technology assessments are the most important, because they help Nardone understand where the student wants more support and which iPad applications might help them better succeed academically. Every Project CAREER student receives an iPad and $25 for apps.) If they have issues with organization or memory, Nardone uses calendar and planner apps such as iOS calendar, PlannerPlus, Week Cal, or iStudiez. For time management, she recommends 30/30, an app that creates →

![Anna Saucier (CAS’18) (right), who is enrolled in Project CAREER, meets with technology and employment coordinator Amanda Nardone (SAR’13).](Image 143x603 to 474x664)

![Amanda Nardone (SAR’13). Employment coordinator, sits down with students to discuss their injury, academic difficulties, employment history, and comfort level with technology.](Image 611x266 to 1225x623)

![::](Image 135x571 to 171x676)

![::](Image 234x48 to 250x120)
Continued from previous page

A list of tasks and specifies a time limit for each item. For recording lectures and note-taking that syncs with the recording, she uploads an app, Notability or Evernote. For students experiencing anxiety, she recommends an app called Breathe2Relax or YogaStudio. And that’s just the beginning of what’s available.

“I do my best to really individualize this program and meet students where they’re at every single time they come into this office,” says Nardone, where they’re at every single time they come into this office, and that’s just the beginning of what’s available.

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For Saucier, the note-taking and organization apps have been lifesavers. She says that Notability has given her a “confidence boost” in lecture-organization apps have been lifesavers. For students experiencing anxiety, she recommends an app called Breathe2Relax or YogaStudio. And that’s just the beginning of what’s available.

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One of the stated goals of the project is to improve employment outcomes for students suffering from a TBI. Nardone matches students with mentors in their desired field so that they can better transition from their academic to professional careers. Relying heavily on BU’s Career Advisory Network, she pulls up lists of alumni and presents them to students, who then pick a person who seems ideal. Once matched, the student and mentor keep in touch via email, phone, or Skype or they meet in person to discuss things from course selection to internship opportunities.

Nardone also helps students find internships, research and apply to graduate school programs, and polish their résumés and cover letters. She follows students for up to a year after graduation to see if they need further assistance landing a job, or if they have one, finding useful iPad apps to make tasks easier to perform.

Jacobs recognizes that while Project CAREER is key to undergraduates’ success, graduate and certificate program students would also benefit from the services, and she hopes the next round of funding will allow her and her colleagues to address that gap.

She says that since the project launched, it became apparent that there are few support groups in the area for those with a TBI. She and Nardone are working to create a support group on or near the BU campus to provide additional support for individuals with TBI and their family members.

As for Saucier, she’s embarked on an ambitious premed curriculum, designing a degree that combines neurology, psychology, sociology, and medical anthropology. She wants to encourage more students to enroll in the program. “The reason I’m doing so well in my classes is because of Project CAREER,” says Saucier.

To learn more or join Project CAREER, call 617-353-7521 or email projectcareer@bu.edu.

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TO FIND OUT MORE ABOUT THE WAY WE WALK—AND GET KIDS EXCITED ABOUT RESEARCH—A SARGENT PROFESSOR TOOK HER LAB TO BOSTON’S MUSEUM OF SCIENCE

By ANNE LAURIE SANCHEZ

I STRIDE DOWN THE WALKWAY, the excited murmurs of the crowd filling my ears. But this is no catwalk, nor a red carpet. This seemingly ordinary 12-foot by 3-foot runner is a gait carpet, loaded with sensors that measure my footsteps and transmit that data to a computer. At its end, a separate mat records foot shape, arch height, and how pressure is distributed during walking.

My onlookers are visitors to the Museum of Science, Boston—children and parents—waiting for their turn to participate in a research project examining how such factors as height, weight, stride, and the bones of the feet relate to walking patterns.

The data, including mine, was collected at the museum by Assistant Professor Simone Gill as part of the Living Laboratory, a program that educates the public through participation in or observation of active science research projects. By gathering data at the museum, Gill, an occupational therapist, says she was able to include a varied cross-section of the population, especially children. She hopes the broad sample will help her find out how physical determinants like weight and bone structure influence walking habits—knowledge occupational therapists can use to help individuals modify their gait for the different demands of their environments. Gait modification is Gill’s specialty, and she has focused her recent research on childhood obesity and how weight affects the ability to adapt walking patterns, like picking up the pace in order to get safely across a street, or preventing a fall on uneven terrain.

For this latest project, she teamed up with Jeremy DeSilva, assistant professor of anthropology at BU College of Arts & Sciences, whose specialization is in the evolution of human feet and ankles—specifically their bony morphology, or bone form and structure—and how it relates to walking. As a physical anthropologist, DeSilva is looking at the connection between the bones of modern human feet and walking patterns; he can then compare fossilized early human foot bones and even fossilized footprints to discover how today’s foot structure and its role in how we walk evolved.

“We’ve never looked at this together before,” says Gill. “I’ve done a lot of work looking at how children and adults adapt their walking patterns to cope with changes in the environment, but in my area there hasn’t been very much work looking at morphology and how that ties into the ways that people actually move: the formation of their bones and how that correlates to function.”

That the project found a home in the Museum of Science’s Human Body Connection exhibit, a potpourri of interactive stations and human anatomy facts, was particularly exciting for Gill and DeSilva. “One of the things that I love the most is that we had a chance to educate people in the community about what we’re doing,” Gill says, “so they were participating in the work and through that, learning about science and about our own bodies.” DeSilva seconds that: “We had an opportunity to work with people of all ages, talking to them about something they are all familiar with—foot and walking. If our curiosity and enthusiasm for what we do inspired some young visitors to the museum, we have contributed well beyond just understanding how the foot works.”
DISCOVERY

This is not what seventies disco cool should look like.
A community dance. With your mom. In a New Jersey state psychiatric hospital. But for the teenage Kim Mueser, it was still pretty neat.

His mom was a clinical psychologist at the hospital and tagging along to her office afforded an insider’s view of a fledgling, progressive era deinstitutionalization.

“There was a lot of energy, a lot of optimism that these people who’d lived in the hospital for 20 years could get out and lead valuable lives,” says Mueser, director of BU Sargent College’s Center for Psychiatric Rehabilitation.

“He decided early on he could play a part in that. ‘I’ve always liked to root for the underdog and to try to help people who had the greatest need, so I focused on schizophrenia.’

But, while Mueser now champions the underdog cause as American editor of the Journal of Mental Health and frequent National Institute of Mental Health review committee member, the nation’s approach to treating people with psychiatric disorders, especially severe ones, is still wedged in the past. It’s not that advances haven’t been made, says Mueser, but that they’ve remained stuck at a local level—an effective program at an individual clinic, a lone researcher trying something different with 20 test patients.

Familiar culprits can take some of the blame for the lack of universal access to the best treatments: limited funding, undertrained practitioners, and enduring stigma. But the field also seems to be hampered by limited vision; great ideas largely remain just that, failing to evolve into usable, national guidelines that enable clinicians and empower patients.

Mueser’s work is where all that changes.

SEVERE MENTAL ILLNESS AFFECTS 6 PERCENT OF AMERICANS, BUT FEW CAN ACCESS THE BEST—OR EVEN ADEQUATE—CARE.

KIM MUESER PLANS TO CHANGE THAT.

America’s ‘D’ grade on care

The National Alliance on Mental Illness gives America a ‘D’ grade on its care of people with psychiatric disorders. In its last Grading the States report, not one state was given an ‘A’; only six mustered a ‘B’, and twenty-seven were chided with a ‘D’ or ‘F’. For people with a mental illness, those grades translate into inadequate provision of many services essential to recovery: illness self-management programs, supported housing and employment, family education programs, and wellness promotion, to name a few (the report cites a total of 65).

According to Mueser, one of the keys to improving care across the country is evidence-based practice—which sounds so fundamental, it’s hard to believe it’s not already commonplace. He contends that recent rehabilitation and treatment breakthroughs have had a limited impact in an environment of undertrained practitioners and high caseloads. “Much more work is needed in terms of developing models that can support the implementation of these practices in real-world treatment settings,” says Mueser.

He’s positioning the BU Sargent College Center for Psychiatric Rehabilitation to lead that charge. The center is an on-campus hub for mental health care research, training, and clinical programs funded by the National Institute on Disability and Rehabilitation Research. A pioneer in shifting the field’s focus from symptom control to recovery, the center has long been a globally recognized advocate of “the importance of self-determination in terms of treatment and goals.” According to Mueser, a major task now is to use “that recovery vision in implementing specific evidence-based practices.”

BY ANDREW THURSTON
That Mueser, who is also a professor of occupational therapy by beliefs, they gain better control over their emotions and their PTSD learn to challenge incorrect or unhelpful trauma-related and beliefs, often related to traumatic experiences; as people with cian training program. It uses a cognitive-behavioral treatment—evidence-based approach—to evaluate a new treatment and clini-
care conducting a series of randomized-controlled trials—the work has been done to develop tailored treatments. In National post-traumatic stress disorder (PTSD); emblematically, little Close to half of people with a severe mental illness suffer from randomized-controlled trials to further increase their impact on "More of the wonderful services developed here will be tested in under way there, a lot of the groundwork has already been laid. that with more than 20 research projects and clinical programs aren't grant-funded positions—"all the services they provide tasks after graduating. "Professionals and residents can, as a team, come together and address those issues. Ideally, what we are supposed to do as occupational therapists is help people find meaning through occupation—those activities that we find important in our lives. If given the opportunity to advocate, anyone with or without a disability can make those changes and improve lives."
**Grant Awards**


<table>
<thead>
<tr>
<th>PRINCIPAL INVESTIGATOR</th>
<th>TITLE OF PROJECT</th>
<th>AGENCY/Foundation</th>
<th>FUNDS AWARDED 2014-2015</th>
<th>YEAR OF AWARD</th>
<th>TOTAL AWARD</th>
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<tr>
<td>Simone G. Gi, assistant professor of occupational therapy</td>
<td>Multicenter Cancer Development Program for Physical and Occupational Therapy (Proactive Peds)</td>
<td>NIH/NCI</td>
<td>$135,000</td>
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<td>Simone Gi</td>
<td>Weight Loss and its Effects on Postural Stability and Fall Risks</td>
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<td>Norman Huyb, research associate professor of occupational therapy</td>
<td>The City College Model of Student Support Building an n=25 Student Support Practice and Process</td>
<td>Boston College</td>
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<td>Project CAREER! Development of a Multidisciplinary Demonstration to Support the Transition of Students with Traumatic Brain Injuries into Postsecondary Education to Promote Employment</td>
<td>Kent State University/ NIDILRR*</td>
<td>$80,085</td>
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<td>Jessica Kramer, assistant professor of occupational therapy</td>
<td>Multicenter Cancer Development Program for Physical and Occupational Therapy</td>
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<td>Jessica Kramer</td>
<td>Evaluation of Project TEAM (Teams Enhancing Assertive Community Treatment)</td>
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<td>Susan McGurk, associate professor of occupational therapy</td>
<td>A Dismantling Study of Cognitive Remediation for Supported Employment</td>
<td>NIMH</td>
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<td>Treating Co-Occurring Substance Use and Mental Disorders Among Jail Inmates</td>
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<td>Development and Randomized Controlled Trial of a Mobile System for Self Management of Schizophrenia</td>
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<td>E. Sally Rogers, research professor and Executive Director, PhD in Rehabilitation Sciences</td>
<td>Improved Employment Outcomes for Individuals with Psychiatric Disabilities</td>
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<td>Patient Navigation and Financial Overload to Promote Smoking Cessation</td>
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<td>Zlatka Rušnova</td>
<td>Advanced Research Training Program in Employment and Vocational Rehab</td>
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<td>$149,805</td>
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</tbody>
</table>

**Faculty**

- Susan Berger, Clinical Associate Professor
- Ellen Cohen, Clinical Professor and Director, Entry-Level Doctor of Occupational Therapy Program
- Wendy Carter, Professor and Chair and Director, Behavior & Health Program
- Anne Kohr, Clinical Assistant Professor
- Daniel Pullen, Assistant Professor
- Simone Gill, Assistant Professor
- Jennifer Guthrie, Research Assistant Professor
- Karen Jacobs, Clinical Professor and Director, Online Post-Professional Doctor of Occupational Therapy (OTD) Program
- Jen Kaldenberg, Clinical Assistant Professor
- Jacqueline Kramer, Assistant Professor
- Nancy Leonti, Clinical Associate Professor
- Susan McGurk, Assistant Professor
- Kim Mueser, Professor
- Robin Newman, Clinical Assistant Professor
- Gaël Ormond, Associate Professor and Director, PhD in Rehabilitation Sciences Program
- E. Sally Rogers, Research Professor
- Zlatka Rušnova, Research Associate Professor
- Anne Sullivan-Soydan, Clinical Assistant Professor

**Programs of Study**

- Bachelor of Science in Behavior & Health
- Master of Science in Occupational Therapy
- Entry-Level Doctor of Occupational Therapy
- Online Post-Professional Doctor of Occupational Therapy

**About Sargent**

Boston University College of Health & Rehabilitation Sciences Sargent College is a leader in research, scholarship, education, and clinical practice in health and rehabilitation. Sargent College has been defining health care leadership for more than 40 years. We know about health care and rehabilitation science because we are experts in the field. Our national reputation is the result of our continuous commitment to our mission:

- **OCCUPATIONAL THERAPY | PHYSICAL THERAPY**
- SPEECH, LANGUAGE & HEARING SCIENCES
- NUTRITION | HUMAN PHYSIOLOGY | HEALTH SCIENCE
- ATHLETIC TRAINING | REHABILITATION SCIENCES

Check out the full, all-day schedule of topics and presenters at bu.edu/healthmatters

**We’ve been doing the research. Now, we’re hosting the discussion.**

Sargent College is a leader in research, scholarship, education, and clinical practice in health and rehabilitation. Join us on Thursday, September 17 at this free, informative, all-day conference dealing with today’s health issues. Topics will include obesity, concussion management, training global health leaders, nutrition, and child development. Mark your calendar today.
“I’d like to have friends because I could have a social life, like relationships. We could talk, and have relationships, even though sometimes I’m shy.”