1 in 17 Americans is about to get a new hero.

Severe mental illness affects 6 percent of Americans, but few can access the best—or even adequate—care.

Kim Mueser plans to change that.

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The science behind a simple pleasure, p. 12
Playing piano with Parkinson’s, p. 14
Helping women in India, p. 24
Eating More Veggies
Two nutrition professors are empowering kids for a lifetime of healthy choices.

Military Mission
Two students employ their occupational therapy skills to support those serving in the United States Army.

The Ups and Downs of Global Health
Jamie Lim (’14) speaks on how surviving malaria prepared him for a lifetime of healthy choices.

From the DL to Dublin
An injury ended Matt Whitney’s (’13) college hockey dreams, an internship in Dublin confirmed his physical therapy ambitions.

Helping Women in India—without Leaving Boston
A professor tests new ways of advancing rural health care in the subcontinent, and skips the jet lag.

The Ups and Downs of Global Health
Kim Mueser plans to change that.

To Moop or Not to Moop
Nonsense verbs have broadened our understanding of how children learn to speak.

The Science Behind a Simple Pleasure
How engineering techniques are improving the treatment of swallowing and speech disorders.

Parkinson’s Care with a Touch of Harmony
An early intervention team approach is helping people live full lives with Parkinson’s disease.

2012–2013
Inside SARGENT
Dean
Gloria Waters, PhD
Communications Manager
Stephanie Rotondo
Editor
Andrew Thurston
Contributors
Tricia Brick, Rachel Johnson (MET’11), Patrick L. Kennedy (COM’04), Corinne Steinbrenner (COM’06), Jessica Ullian
Designer
Hy Zhitnik
Produced by Boston University Creative Services

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College of Health & Rehabilitation Sciences: Sargent College

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Dear Friends,

This is a historic time for health care, as advances in research and technology are under way that will benefit generations to come. At BU Sargent College, we’re proud to foster an environment in which education, research, and clinical practice converge to encourage such advancement. Though varied in our disciplines—Sargent academics and practitioners work on projects ranging from developing resources for autistic children to mapping brain circuitry—our efforts have always been grounded in a single question: How can we help?

In this issue of Inside Sargent, we focus on just a few of the many individuals striving to make a difference in the lives of the people they treat, including a researcher aiming to keep health care affordable and an interdisciplinary team helping a pianist with Parkinson’s disease keep on playing. The cover story features a recent addition to Sargent College, Kim Mueser, executive director of BU’s Center for Psychiatric Rehabilitation and professor of occupational therapy. His research is giving new hope to the nation’s severely mentally ill for Psychiatric Rehabilitation and professor of occupational therapy.

Mueser’s work is just one example of Sargent’s impact beyond Boston. In this issue, you’ll read about Clinical Associate Professor Eileen O’Keefe’s efforts to improve the health of women in rural India. We also examine the innovative interventions two nutrition professors have developed to fight childhood obesity in America and India. We also examine the innovative interventions two nutrition professors have developed to fight childhood obesity in America and India. We also examine the innovative interventions two nutrition professors have developed to fight childhood obesity in America and India.

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I hope you’ll find these profiles as compelling as I do. All of our featured individuals strongly believe in using their knowledge and talent to help people live better, healthier lives. As I look ahead to the future of our professions, I am filled with optimism for what we can accomplish. The debate about health care will no doubt go on in Washington, D.C., but whatever the political and financial future holds, we are poised to achieve great things through education, research, clinical practice, and always asking: How can we help?

With warm regards,

Gloria Waters
Dean and Professor

**MAKING HEALTH CARE ADD UP**

**STEERING LIFE-SAVING RESEARCH THROUGH TIGHTENED BUDGETS.**

In one hand, the hospital manager holds a budget report awash with red ink; in the other, a proposal for a potentially life-saving, but expensive-sounding, screening program. If the new test is introduced, might something else have to be cut—and might the someone else benefiting from it have to suffer—to balance the books?

“It’s a very sensitive issue,” admits Kee Chan, an assistant professor and expert on health care cost effectiveness. “How do you evaluate a life?”

Chan has developed a mathematical model to help doctors, hospitals, and governments weigh the merits—and prices—of new public health programs. A former researcher at the National Institutes of Health, she also collaborates with scientists and researchers to show them how to put their advances to work in the clinic.

Whether they’ve designed a new pill or disease test, many researchers still ignore a vital question: “How would you actually implement this?” Faced with those holding the purse strings, they fail to grapple with potential budget impacts, from employing new staff to the program’s projected shelf life. It leaves many pioneering projects stuck on the lab bench when they could be making a difference at the bedside.

“The reality is that there’s only so much money in the pot,” says Chan. “If you’re talking to policy makers or health facility managers, they’re interested in how investing in this new technology, intervention, or screening program would save ‘x’ number of lives or improve ‘x’ number of years lived.”

**The Price of Life**

Chan’s model can be tailored to help researchers at BU and other institutions consider those cost and implementation questions. Based on a mathematical approach called the Markov Model, which is used to measure probability, it’s continued on next page.

**Assistant Professor Kee Chan helps health researchers consider questions of budget versus health benefit.**

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– KEE CHAN
Health Care continued from page 3

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impacts. She can also calculate a dollar figure for every year—or improved year—
added to a life. Generally, if a program costs less than $50,000 per quality-
adjusted life year, or QALY, it has a good chance of making the cut. “It’s not that
one life is worth more than the other,” says Chan, “but it’s a way to evaluate the
health benefits or outcome of investing in a program.”

Recent projects have included assessing a change in HIV screening policy at the Department of Veterans Affairs and studying the viability of new Hepatitis C drugs. Chan, a trained
geneticist, bases her theories on a practical success of her own. A Severe
Combined Immunodeficiency screening test for newborns she developed in
2005 is used in ten states, including Massachusetts. She credits the inclu-
sion of implementation questions from the outset for the screen’s rapid
adoption—the test she developed uses a dried blood spot already collected at
birth by most hospitals.

Today, Chan is still more likely to be contacted by researchers edging
forward at the end of a study than those starting out—the point when they
realize, “Oh, I can actually use this in the community, what should I do?”—
but given the economic environment, that’s changing. She’s weaving cost-
effectiveness questions into a project with researchers studying obesity in
Chicago and will soon be traveling to China to examine the implementation
of a new HIV medication program.

With a price increasingly placed on our health, Chan’s work could help more
life-saving programs justify their place in the budget.—Andrew Thorston

FACING AIDS

STUDENT-LED GROUP FINDS NOVEL WAYS TO FUND DISEASE FIGHT

BU FACE AIDS founders Jeremy Melitzer (‘12, SPFDR) and Colin Mooney (‘13) with Paul
Farnier of Partners In Health. Photo by Angela Miglietta Comeau.

Flowers = condoms = “Bandoms.” And money for the fight against HIV and
AIDS. The unconventional bouquets were sold by the BU chapter of FACE
AIDS, a student-led organization that raises funds to support Partners In
Health’s (PIH) programs for HIV-affected communities in Rwanda.

According to BU FACE AIDS founders Jeremy Melitzer (‘12, SPFDR) and
Colin Mooney (‘13), since its 2011 launch the chapter has developed close ties with
Boston-based PIH. The connection has allowed members to go beyond fundrais-
ing, attending expert lectures and joining volunteer efforts.

“Though we’ve started small, we have big plans,” write Melitzer and Mooney.
“Our hope is to provide opportunities through FACE AIDS or Partners In
Health for Sargent undergraduates. We see the group as a way for
students to go beyond fundraising and volunteer efforts.

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ARTHRITIS ADVICE ON THE MOVE

PODCAST SERIES TAKES RESEARCH BEYOND JOURNALS

Advice for living with arthritis is now available in your kitchen. And at the
gym. And on the bus. BU Sargent College’s Center for Enhancing Activity
& Participation Among Persons with Arthritis has launched a podcast series
to help patients and clinicians access its research—wherever they are. The first
Active Living with Arthritis podcasts feature exercise tips, including guidance on
building a healthy routine and suggested workouts, future episodes are planned on
topics as diverse as buying the right kind of footwear to coping with office life.

To subscribe to the podcasts, visit www.bu.edu/enva/aa/podcasts.

Top Honors

Occupational therapy’s highest honor and an appointment to advise the federal
government on health policy: two Sar-
gent faculty members—Karen Jacobs
and Joe Perkell—received significant
accolades in 2011–2012. And they
weren’t alone.

The Interagency Autism Coordinat-
ing Committee named a paper by Profes-
sor Helen Barbas among its 10 most
important mental health publications.

Research Assistant Professor Virginia
Best won an Academy of Research in Oto-
laryngology young investigator award.

Center for Psychiatric Rehabilitation
Director of Services Dori Hutchinson
was named chairwoman-elect of the U.S.
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Clinical Professor Karen Jacobs
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The Federation of State Boards of
Osteopathic Physicians and Surgeons
organized the first-ever national
convention for osteopathic medical
students in 2012.

The organic gardens were built in
January 2012 by student volunteers
working with the health and sustain-
able development organization, Global
Brigades. The team from BU, which
included Sargent College staff and stu-
dents, also educated villagers about soil
contamination, natural pest repellents, and composting and recycling.

The local families have an average income of $75 per month, a starch-
dependent diet, and an agricultural approach that quickly exhausts the land,
so the combination of planting and edu-
cation will allow them to “contribute to their income and learn how to be better
keepers of the environment,” says Danka
Charland (MET ’01, ’03), the human
physiology program administrator who
traveled with the students on the eight-
day project.

TOP HONORS

Senior Research Scientist Joe
Perkell was appointed for a five-year
term to the federal National Deafness
and Other Communication Disorders
Advisory Council.

The USPRA presented Senior Training
Associate Maria E. Rostrevo-Toro with
the 2012 LeRoy Spaniol Educator Award.

OUTSTANDING SENIOR AWARDS

Every year, Sargent honors some out-
standing seniors for their academic,
clinical, research, or community contri-
butions. The 2012 senior award winners
were (from left to right): Jena Daniels,
Amanda Matto, Robert Ali, Julie Gold-
berg, Kristely Bastien, Amanda Schmitz,
Michelle Keilty, Sarah Hodge, Antigone
Matsakis, Priscilla Agyemang, and Jacob
Kusby. Photo by Patrick Singleton.

Students from BU helped villagers construct
two gardens in rural Panama in January 2012.
Photo courtesy of Danka Charland.

The garden plots are small, just six-by-
nine feet. The seeds they hold humble:
cucumber, onion, melon, string bean.
But those modest plantings promise
self-sufficiency to two indigenous
families of the rural Piriai Embera
community in eastern Panama.

GREEN FINGERS

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To Moop or Not To Moop

THE DISCOVERY THAT KIDS COMPREHEND VERBS LONG BEFORE THEY CAN SPEAK THEM COULD BENEFIT CHILDREN WITH AUTISM.

BY PATRICK L. KENNEDY
PHOTOS BY VERNON DOUCETTE

HEY DON’T TALK MUCH, but they listen. And learn. Even the youngest toddlers are rapidly building a vocabulary, even if they aren’t able to reproduce aloud all they’ve learned. In fact, when a child hears an unfamiliar verb, even absent a visual cue, she will usually figure out from the context whether it’s transitive or intransitive, then file it away and retrieve it when she encounters a likely definition. (She sees her brother rubbing Fido, then remembers Mommy spoke of *petting* the dog.)

That’s the finding Sudha Arunachalam published in a 2012 edition of the journal Language and Cognitive Processes. Arunachalam is director of the BU Child Language Lab and an assistant professor of speech, language and hearing sciences.

“Learning language is really one of the great mysteries of human cognition,” says Arunachalam. “Children understand more than they say.”

In the past, the language scientist explains, studies of lexical acquisition focused on nouns, because, generally, the first words out of a child’s mouth are indeed nouns. Parents naturally think teaching words means, “I hold up a ball and say, ‘Look, here’s a ball. Do you see the ball?’” Arunachalam says. “But real-world learning is much more complicated than that, and verbs in particular are more complicated, which is why we chose to look at them.”

In a 2010 study, Arunachalam and colleagues established that 27-month-olds are capable of correctly identifying a verb’s syntactic properties. They showed children a video of a conversation with a made-up verb cast as either transitive (“The boy wants to moop the ball”) or intransitive (“The boy and the dog want to moop”). Then, the toddlers watched two scenes side by side: one depicted a boy spinning a girl in circles; the other, the boy and girl each waving one hand. Finally, the kids were asked to point to the scene that showed mooping. Those who did start with the dialogue video in which moop was transitive picked the transitive video (the boy acting upon the girl by spinning her) and those who’d watched the intransitive dialogue picked the intransitive scene (the boy and girl together performing an action, waving, with no object).

In her latest study, Arunachalam tried the same experiment but with even younger children—most 21 months, some just 19 months—and with a technological twist: instead of asking the toddlers to indicate their choice by pointing, she used a corneal reflection monitor to track their eye movements upon hearing the question. “It’s kind of extraordinary,” she says. “We can measure their comprehension by almost literally looking through their eyes.”

DESPITE THE CHALLENGES of working with such young subjects (the journal article notes that “nine toddlers were excluded from analysis due to fussiness”), Arunachalam and colleagues again found that most kids got the transitive-intransitive distinction. “Clearly, then, 21-month-olds have what it takes to benefit from cross-situational learning,” she wrote, meaning “they can glean whatever information is available about a novel verb in one encounter, and access that information in a subsequent encounter.”

That held true for the study’s few 19-month-olds, Arunachalam adds. “Most 19-month-olds are barely putting words together in a sentence—and they aren’t producing transitive or intransitive structures. But our study made clear that not only can they learn new verbs, they can learn them just from hearing this kind of syntactic information.”

It’s a remarkable advance in our understanding of how children learn words, and Arunachalam isn’t finished by a long shot. She’s also planning to study the effect a good nap has on word learning: “Sleep has been shown to have a large role in memory consolidation, but there’s been very little work on memory for language, and no work on memory for word meanings in children.”

Currently, Arunachalam is running the eye-tracking test again, but this time “extracting the social context from the situation to make it even harder,” she says: rather than a video of a conversa-

Discovery

To Moop or Not To Moop

the teaching of language to children suffering from autism. “Perhaps this would be helpful for them,” Arunachalam says. “Maybe they would learn more easily in a context in which they didn’t have to sit next to somebody or look at somebody or be explicitly taught something, but rather they could pick up information more from ambient noise.” At the least, she says, this exercise could provide the children a foundation for later learning.

The biggest challenge for the language lab is simply getting participants. “We need 80 kids per study—80 kids whose data we can use,” Arunachalam says. “Occasionally a kid will walk in the room and just want to leave. Or he’ll be holding a cup of Cheerios down.” Nevertheless, she adds, “We’ve had tremendous success.”

For Inside Sargent readers who are parents of toddlers, Arunachalam offers this takeaway: “Children are listening and learning, even when they are just overheard speech that isn’t directed specifically to them. So keep the household conversation going!”

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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, the newly appointed 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, under-trained practitioners, 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.

This is where that changes.

**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 names a total of 65).

One of the keys to improving care across the country is, according to Mueser, evidence-based practice. It 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 that’s funded by the National Institute on Disability and Rehabilitation Research. A pioneer in shifting the field’s focus from symptom control to recovery, it’s long been a globally recognized advocate of “the importance of self-determination in terms of treatment and goals.” According...
or bipolar disorder, which are two of the most common severe mental illnesses.

One of Mueser’s aims is to take advantage of Boston University’s closely intertwined health-related colleges—including Sargent and BU’s schools of medicine and social work—and departments, particularly psychology, to model new curriculums and training opportunities across a broad range of disciplines. He’s also hoping to establish relationships with more public mental health service providers in Boston.

“The single most powerful way of overcoming stigma is having contact with somebody who’s had a mental illness,” he says, referencing his teenage trips to the New Jersey state hospital. “Even if you don’t want to make it a specialty, when you work with very challenging, difficult people, it expands your skills, it expands your understanding of the range of challenges that people face.” Mueser believes that working with people who have schizophrenia as their symptoms such as auditory hallucinations or disordered speech, only to find barriers to work or social activities, is “good-experimentally and facilitates the development of clinical skills.”

He’s pursuing opportunities for “curriculum development and training of people in professional programs—occupational therapy, social work, psychology”—to ensure future practitioners are being taught the latest, most effective treatment methods.

Mental health advocate Gayle Berg, founder of Psychological Solutions in New York, is backing Mueser and the Center for Psychiatric Rehabilitation to break down the barriers that have “constricted and restrained” rehabilitation services for decades.

“The center continues to be a one-of-a-kind gem that enables the possibility for creative innovation and problem solving that has not only already made innumerable and significant contributions to the field,” says Berg (’74), a center advisory board member, “but will allow the continuation of the extraordinary trailblazing path of changing and transforming the lives of real people living with mental illness, today and in the future.”

And for the one in seventeen Americans with a severe mental illness—not to mention the one in four who suffers some form of psychiatric disorder—it should mean they finally get access to evidence-based treatment methods.

“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 U.S. Marine Corps, she has seen friends return from duty with combat- and sustained traumatic brain 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 (’10) 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 Robinette Amaker, 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 is “very 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 who is able to return to combat and someone who is out of the army forever.

“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...”

By Rachel Johnson

Military Mission

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, say 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 (’07, ’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.”

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“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 (’10) 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 Robinette Amaker, 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 is “very 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 who is able to return to combat and someone who is out of the army forever.

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 wouldn’t have survived before are surviving now; they’re heroes to me, and I’m happy to be supporting them.”
HAT'S GOING ON ACOUSTICALLY when someone with dysarthria utters a voiced sound? Can people with swallowing disorders control their throat muscles for tasks other than swallowing? How might computers help stroke patients recover their speech production?

Ask an engineer. Cara Stepp, an assistant professor of speech, language & hearing sciences and biomedical engineering, runs the Stepp Lab for Sensorimotor Rehabilitation Engineering. She brings her engineering training to the study of normal and disordered speech and voice. The lab’s long-term goal is to use its findings to help rehabilitate people who have experienced a stroke, Parkinson’s disease, brain injury, or other condition that impairs speech and swallowing.

Two of its five projects use interactive computer games for assessment and rehab. “In upper limb rehab,” Stepp says, “there are lots of studies showing that engaging individuals in motor rehab with a video game is really effective.” The release of dopamine during game play actually encourages brain plasticity, improving one’s ability to learn new muscle functions. “We’re adapting that to swallowing and velopharyngeal dysfunction.”

In the first project, Stepp wants to train people with dysphagia, whose normal swallowing function has been impaired by a brain injury, to control their anterior laryngeal musculature in response to visual stimuli. A test subject wears four sensors on her neck, three to record signals, and one to send signals to a computer game in which she moves a fish up or down, eating smaller fish and avoiding a big shark. The subject sends these signals by tensing the muscles normally used for swallowing. “We’re not asking anybody to do anything more, activity-wise, than they already can. So it’s not strength-building; it’s coordination. So far nobody can’t do it.” Stepp found that someone who has had a stroke, over time, was able to sync up both sides of her neck: “That was pretty promising, that the impaired side started to look more like the healthy side as she was playing the game.”

The other study of this type concerns individuals with velopharyngeal dysfunction. At the back of the throat, the velum is responsible for closing off the nasal cavity when we speak. “When it’s shut, we produce speech without any of the acoustic energy going through our nose,” says Stepp. “When it’s open, we purposefully, usually, do that to create nasal sounds—mmm, nnn, nng. But if you don’t have control over this, then you get nasalization when you don’t mean to. And that’s extremely common in individuals with hearing disorders.” That’s because the difference isn’t perceptible by sight: if you were to watch a clip of someone saying, “Mom” (nasal), with the sound muted, it would be indistinguishable from “Bob” (nonnasal). “If you don’t have good auditory feedback, then you don’t learn how to control this,” Stepp explains.

To pinpoint the subtle acoustic differences, the lab has developed a sensor and signal processing system in which a microphone measures acoustic energy emitting from a subject’s mouth and nose while an accelerometer picks up vibrations from his nose as he plays a game involving a paper airplane, moving it up and down based on his nasalization of words. “The visual feedback should motivate people to try to rehabilitate,” says Boris Vink, a recent BU engineering undergraduate in the Class of 2012 who helped design the program. “That’s really important. So we’re trying to make the sensor something that’s fun to use.”

Steff appreciates having a team of students working with her in the lab. “The BU undergrads are phenomenal,” she says. “They bring hours of work, of course, but it’s more than that; they take responsibility and they contribute creatively. That’s a combination that is not common.”

Currently, the velopharyngeal study is gathering control data from healthy adults, and the plan is to test the sensor on children with hearing disorders as well as cerebral palsy and cleft palate.

Other Stepp Lab projects include a study of the acoustic signals in the speech of people newly diagnosed with Parkinson’s disease. “By the time someone is diagnosed, they may have been living with it for eight to ten years, and have lost half their brain stem,” Stepp explains. “How is it that nobody notices it until then? One reason I believe is that humans are so good at compensating [while listening]. Our speech perception is specifically trained to hear intelligible speech. What I wonder is whether we can identify the perceptually subtle changes using acoustic analyses.”

BU Sargent College has proved to be the perfect fit for the engineer’s work in research and rehab. “I’m not a clinician, so I have to be really careful to talk with, at every opportunity, clinicians who see patients all the time,” says Stepp. Fortunately, she gets to consult colleagues such as Clinical Professor Susan Langmore, “probably a top-five-in-the-country swallowing researcher. She’s an amazing clinical resource.”

“I think a lot of engineering projects that go awry do so because the engineer has no understanding of the pragmatics,” Stepp says. “So they design something that is really elegant but because the engineer has no understanding of the pragmatics... I try not to fall into that trap, and that’s one of the major attractions of Sargent for me: I can get the ideas and opinions of clinicians right here in this building.”

“I THINK A LOT OF ENGINEERING PROJECTS THAT GO AWRY DO SO BECAUSE THE ENGINEER HAS NO UNDERSTANDING OF THE PRAGMATS … I TRY NOT TO FALL INTO THAT TRAP, AND THAT’S ONE OF THE MAJOR ATTRACTIONS OF SARGENT FOR ME: I CAN GET THE IDEAS AND OPINIONS OF CLINICIANS RIGHT HERE IN THIS BUILDING.”

—CARA STEPP
Parkinson’s Care
with a Touch of Harmony

The all-around treatment approach shows Parkinson’s doesn’t mean the end of enjoying life—or playing piano.

by Corinne Steinbrenner

When Karen Sauer first noticed she was having difficulty at the piano, she tried to ignore it. Then she told herself she should be practicing more. “And then, finally,” she says, “it just got so bad that I realized I had to figure out what was going on.”

A professional pianist and longtime member of the music faculty at Wellesley College, Massachusetts, Sauer consulted a series of specialists, eventually making her way to a neurologist. The neurologist suspected focal dystonia—a task-specific movement disorder that can affect the hands of pianists, guitarists, and other musicians—but eventually offered a more distressing diagnosis: Parkinson’s disease, a progressive disorder of the central nervous system. A second neurologist confirmed the Parkinson’s diagnosis and recommended not only a regimen of medications but also a visit to BU Sargent College, where physical therapists at its Center for Neurorehabilitation could help Sauer design a regular exercise routine that increases the quality of her life and could potentially slow the progress of her disease.

Sauer is among the growing number of people with Parkinson’s who are including rehabilitation specialists—physical therapists, speech-language pathologists, occupational therapists, and nutritionists—early and often in their care. “Patients typically were not referred to a rehabilitation specialist unless they suffered a fall or experienced a significant change in their mobility,” says Cathi Thomas (SON’87), coordinator of the American Parkinson Disease Association (APDA) Information & Referral Center on BU’s Medical Campus. “The strong message now,” Thomas says, “both from the patient community and health care professionals, is that people with Parkinson’s disease should be referred for these other disciplines very early on.”

Doctors and patients in the Boston area are particularly likely to have received this message thanks to the efforts of the Sargent professors who’ve joined with Thomas to educate the local community about the benefits of rehabilitation therapy for people with Parkinson’s disease.

Making a Good Start

Among the many educational initiatives the BU team organizes is the Good Start Program for people newly diagnosed with Parkinson’s. Good Start sessions are held each fall at Sargent. Patients and their family...
members attend three evenings of educational sessions—two led by neurorologists from BU’s School of Medicine who talk about the diagnosis and treatments—and a third session led by a team of Sargent professors who describe the role of rehabilitation specialists in Parkinson’s care. The leader of this rehabilitation panel is physical therapist and Assistant Professor Terry Ellis (MED’05), who teaches Good Start participants what her own research has revealed about the tremendous benefits of exercise for people with Parkinson’s disease. “We know that exercise is beneficial for people in general,” Ellis says, “but we’ve been able to show in our studies that short-term participation in exercise programs leads to things like improved quality of life and better function—better walking, better fitness, better strength, better flexibility. All of these things can happen even in the presence of a degenerative disease, which is something we didn’t know 20 years ago.”

Ellis is then joined by Sargent colleagues with expertise in nutrition, speech-language pathology, and occupational therapy. While most people diagnosed with Parkinson’s don’t encounter an occupational therapist until late in the progression of their disease, says Clinical Associate Professor of Occupational Therapy Sue Berger, the Good Start Program provides her an early opportunity to get people thinking about adaptations that can keep them engaged in activities they enjoy. In many cases, she says, this simply means finding easier ways to do everyday tasks—sitting instead of standing while preparing meals or taking a shower, for example—to preserve energy for fun things like an afternoon round of golf or a night at the movies.

Clinical Assistant Professor Elizabeth Hoover, a speech-language pathologist, also appreciates the chance to educate patients early—before they have difficulty speaking or swallowing. “I hope that concept of empowerment and self-management comes through loud and clear,” Hoover says, “because the earlier they start to take care of their muscles and manage their function, the longer they’ll have control.”

Good Start’s proactive message inspires many participants to call Sargent’s Center for Neurorehabilitation and schedule a diagnostic consultation. They then meet with physical therapists and speech-language pathologists, who provide a comprehensive assessment of their abilities, answer their questions, and recommend exercises that can help them stay active and improve their quality of life.

If patients later have questions about their exercise routines, they can call the helpline at APDA’s National Resource Center for Rehabilitation—established at Sargent in 2010—and get answers from a licensed physical therapist. The hotline (888-606-1688) serves people living with Parkinson’s nationwide and has also become a resource for health care providers looking for the most up-to-date information on how rehabilitation therapies can benefit their patients.

EDUCATING HEALTH CARE PROVIDERS

Answering questions that come across the APDA hotline is just one of the ways Sargent specialists help to educate their fellow health care providers. Another is the series of seminars BU and the APDA offer biennially for health care professionals. The two-day seminars include speakers from Sargent and BU School of Medicine, who present the latest developments in Parkinson’s care to the roughly 100 therapists, nurses, and physicians who attend. “We tell them, ‘Here’s the latest evidence. Bring this back to your clinic to teach others,’” says Ellis. “It’s a train-the-trainer model.”

Much of the information presented at these seminars is about the benefits of early exercise and physical therapy, but a wide variety of Sargent faculty members have been invited to offer their expertise. Dietitian and Clinical Assistant Professor Michele DeBiasse (MED’14), for example, has spoken about the special nutritional needs of patients with Parkinson’s disease.

DeBiasse’s presentations always underscore the importance of a team approach to Parkinson’s care. Dietitians benefit from the expertise of speech-language pathologists, she says, who can advise on the consistency of foods best suited for people who have difficulty swallowing. Occupational therapists, who often visit patients in their homes, can help dietitians better understand how their patients are actually preparing and consuming meals so they can make realistic dietary recommendations. “It takes a village to manage people with Parkinson’s disease,” DeBiasse says. “All health care providers need to keep their eyes and ears open for things that may affect the patient.”

It’s important to provide these examples of how health care providers can work together, says Ellis, while faculty members at Sargent College are accustomed to working in interdisciplinary teams. “In other environments, providers in different disciplines don’t always know what the others are doing. They need to know what roles the other disciplines can play, so they can talk to one another and referring patients to one another.”

Ellis is optimistic the education she and her Boston University colleagues offer—to people with Parkinson’s and to their health care providers—is helping to change the perception that neurorologists are the sole providers of Parkinson’s care. “This is a real paradigm shift,” she says. “We’re talking about intervening early and with a broader team, to really help patients reach their highest potential.”

“I TAKES A VILLAGE TO MANAGE PEOPLE WITH PARKINSON’S DISEASE. ALL HEALTH CARE PROVIDERS NEED TO KEEP THEIR EYES AND EARS OPEN FOR THINGS THAT MAY AFFECT THE PATIENT.”

—MICHELE DEBIASSE

Pianist Karen Sauer is one of those benefiting from the early intervention team approach—and defying assumptions about Parkinson’s disease. Since her prompt referral to the roughly 100 therapists, nurses, and physicians who attend. “We tell them, ‘Here’s the latest evidence. Bring this back to your clinic to teach others,’” says Ellis. “It’s a train-the-trainer model.”

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Pianist Karen Sauer is one of those benefiting from the early intervention team approach—and defying assumptions about Parkinson’s disease. Since her prompt referral, she’s participated in several exercise studies at Sargent and does her best to maintain the program of walking, yoga, and cardio exercises that Tami DeAngelis (’02), a senior physical therapist, has recommended. Sauer is convinced the exercise is making a difference. It certainly helps her feel better, she says, and—five years after her initial diagnosis—her neurologist is pleased with how slowly her Parkinson’s symptoms are progressing. She’s even maintained enough dexterity in her hands to continue meeting and playing with her monthly piano group.

WEB Extra

Sargent is home to a first-of-its-kind national resource center for Parkinson’s disease. Check out its latest research at www.bu.edu/neurorehab
The Ups and Downs of Global Health

By Jessica Ullian

I’d learned so much about the biology of malaria, but until I saw people suffering from it, and until I got it, I didn’t know how miserable it was,” he says. “It adds a human aspect to medicine.”

Born in Tokyo, and raised in Riyadh, Lim knew global health was his true vocation long before he came to Sargent. “Moving around a lot gave me a really global perspective—it opened my eyes to the fact that not everyone lives the same way that I do,” he says. “I saw poverty in ways that I didn’t really understand before; I saw a huge disparity in health care access and quality.”

At BU, he found research opportunities early. Kandarian invited him to work in her muscle biology lab after being impressed by his work in her freshman Introduction to Health Professions seminar. “I know basic science is not his passion—global health is,” Kandarian says. “I think Jamie said yes to working with me because, in terms of treating infectious and other types of disease, it is very helpful to have treatments that were devised in developed countries. What I think he got a peek at by working in my lab is the kind of work that is necessary for the very beginnings of treating disease.”

When his freshman year was finished, Lim jumped at the opportunity to take a service-learning trip to Tanzania, where he and other volunteers staffed triage clinics at a local elementary school. But after he returned, he felt uneasy about the work: “We were treating people for diseases that would inevitably come back two weeks later,” he says. “It was really frustrating.”

When he traveled to Uganda six months later, he chose to work with a local grassroots group, thinking the work might have a lasting impact. What he found was a far more intense clinical experience. Lim became the only clinician on Kimi, an island in Lake Victoria with a population of 3,500 and an HIV prevalence rate of 37 percent. He saw up to 60 patients a day, most with symptoms he was unable to treat in any meaningful way.

Discouraged, Lim returned to Boston—and found the global health experience he’d been seeking only a few blocks away. He began volunteering with the nonprofit Partners In Health (PIH), headquartered less than a mile from Sargent College, and immediately found himself working on projects intended to develop sustainable methods to resolve health care disparities, such as helping the oncology team create a patient database for cancer programs in Haiti and Rwanda, and serving as an executive assistant on a health care project based in rural Nepal.

Now, with two years at Sargent still ahead of him, Lim’s further expanding his activities. His PIH stint has piqued an interest in global health care politics, so he’s considering a master’s in public health along with an MD. He’s moved on from Kandarian’s lab, but inspired by the potential applications of her research, he’s taking courses in global cancer disparities and applications of her research, he’s taking courses in global cancer disparities and outcomes. Undeterred by his bout of malaria, he also plans to travel to Southeast Asia and learn more about the region where he might practice one day.

“I’m not in medical school yet; I’m not a doctor. There’s only so much I can do,” he says. “So right now I want to gain experience in whatever I can.”

The Ups and Downs of Global Health

Junior Jamie Lim has racked up air miles and battled malaria in preparation for a career in global health.

By Jessica Ullian

Photo by Cydney Scott
Paula Quatromoni doesn’t want to talk to kids about childhood obesity. A BU Sargent College associate professor of nutrition, Quatromoni (SPH’01) is well aware of the alarming statistics: More than a third of American kids and adolescents are overweight or obese, according to the Centers for Disease Control and Prevention. About 18 percent are obese, a number that has tripled in the last three decades. Low-income kids are at even higher risk: one in three low-income preschool-age kids is overweight or obese. And obesity puts children at risk for a range of health disorders, from high blood pressure to diabetes.

Sargent faculty, including Quatromoni and Clinical Professor Linda Bandini, have been involved in childhood obesity research and interventions for decades. And with the rise of ventures like First Lady Michelle Obama’s Let’s Move! initiative, the promotion of healthy habits to slow weight gain has enjoyed renewed attention nationwide.

But while she is active in the fight to raise a healthier generation, Quatromoni says, “We shouldn’t even be saying ‘childhood obesity’ to fourth graders. There’s so much that can be damaging, in terms of promoting chronic dieting, body image dissatisfaction, bullying, or stigma of overweight kids,” she says. “I would much rather be promoting fitness and healthy eating than what the scale says. I want the messages to be positive and empowering: This is what a healthy breakfast looks like. This is what healthy snacking means.”

Quatromoni has built this positive messaging into an innovative new nutrition education curriculum by joining forces with an educational online series called KickinKitchen.TV. A cooking show for preteens, the series combines sitcom-like plot lines and a hip-hop soundtrack with lessons on making healthy choices in and out of the kitchen.

Quatromoni, who is an advisor for the series, developed nutrition lessons coordinated with episodes of KickinKitchen.TV, and in fall 2011, ten of her graduate students visited fourth- and fifth-grade classrooms in Cambridge (Massachusetts) Public Schools to pilot-test the curriculum.

In three of the ten classrooms, the Sargent students taught a more traditional curriculum, though still interactive, featuring lectures, worksheets, and discussions. In the other seven classrooms, the lessons used episodes of KickinKitchen.TV as a jumping-off point for conversations and activities around topics like the nutritional benefits of fresh foods or the consequences of skipping breakfast.

“The kids seemed to gravitate naturally to the series. “There was a significant increase in nutrition knowledge in both groups; the students learned with both the traditional lesson plans and in the digital classrooms,” Quatromoni says. “But the KickinKitchen.TV episodes in particular just captivated the kids. They loved the characters; they loved the comedy; and they loved the cooking and the healthy eating tips.”

And they wanted more: even though the program’s website was still in development at the time, half of the kids checked out the site on their own at home. In the upcoming second phase of the project, Quatromoni hopes to mobilize kids’ interest in social media to encourage them to use the website for finding and sharing recipes, recording food logs, and participating in physical activity challenges.

One key to the curriculum’s success, Quatromoni says, is that the series meets kids where they are—online, with stories about young people who look and act like them.

“Our whole goal here is to be empowering, to motivate kids to say, ‘Hey, I can go home and do this,’” she says. “And getting these nutrition messages from a fourteen-year-old cooking a vegetable frittata in her kitchen for her friends is different from me standing up there lecturing, ‘You have to eat more vegetables.’”

P

Paula Quatromoni (top) is an advisor to KickinKitchen.TV (above), an online series that teaches kids about healthy eating.
HELPING TEENS WITH DISABILITIES

Clinical Professor Linda Bandini is also working to educate kids and families about nutrition and health by tailoring her messages to the needs and abilities of those she’s reaching out to—her case, young people with disabilities. Kids and teens with developmental disabilities like autism and Down syndrome have higher rates of obesity than their typically developing peers. Yet in terms of nutrition and activity, this group has historically been understudied and is often excluded from weight loss and educational initiatives, Bandini says. Working with research teams including Sargent graduate students, she seeks to identify the risk factors particular to these groups and, in turn, to develop effective interventions to help young people with disabilities stay healthy. “The work we’re doing is under the umbrella of health promotion,” she says.

“We’re looking to see whether kids with developmental disabilities differ from typically developing kids in terms of eating habits, diet, and the levels of physical activity they engage in, because all of these things can have implications for overall health.”
—LINDA BANDINI

FROM THE DL TO DUBLIN

When Matt Whitney (TD) sees his patients, he sees himself. As a freshman, he was at another university, with different goals and a career path heading toward finance. One hockey injury, and a trip to the disabled list (DL), changed everything.

Most people don’t speak fondly when describing therapy after a life-altering injury, but Whitney has a glass-half-full outlook. “I just kind of fell in love with it right there,” he says, describing his yearlong rehab experience and decision to switch to BU Sargent College. “The therapists were really cool guys and they gave me an insider’s point of view.”

He says this insight gave him greater empathy for his patients at the Irish Wheelchair Association (IWA), where he worked while studying abroad through BU’s Dublin Internship Program in the fall of 2011. The IWA is a Dublin-based organization that works to improve the physical and emotional capabilities of people with limited mobility; for Whitney, it was a chance at supervised hands-on therapy. “They kind of throw you into the fire,” he says. “I was a bit nervous at first...it was better than I thought.”

Although he had never experienced cerebral palsy or MS himself, Whitney used the challenge of his own injury to understand his patients’ situations, physically and emotionally. His therapy has been useful in the classroom, too. “A lot of the work involved the text. ‘What’s this I had gone through myself,’” he says. “I was able to say, ‘Oh yeah, I remember doing that, and this is why I did it.’ It helped me really understand my own therapy for the first time.”

He enjoyed working with patients in Dublin so much, he plans to go on to graduate school and become a licensed physical therapist.

But Whitney knows empathizing with his patients is only half the battle. He also needs to get them to see themselves in him. Having gone through the rehab process himself, he says, he tries to be an example. “I can say to my patients, ‘I’ve been there, I know where you’re at.’”

—MATT WHITNEY

“I CAN SAY TO MY PATIENTS, ‘I’VE BEEN THERE, I KNOW WHERE YOU’RE AT.’”

—MATT WHITNEY
Helping Women in India—
WITHOUT LEAVING BOSTON


W H E N  E I L E N  O ’ K E E F E  s i g n e d  o n  t o  l e a d  a  w o m e n ’ s  h e a l t h  s t u d y  i n  G u j a r a t,  I n d i a,  s h e  k n e w  s h e  d ’ l i n k  a  f e w  c h a l l e n g e s.  C o n d u c t i n g  a  s u r v e y  i n  a  f o r e i g n  l a n g u a g e  w a s  o n e;  n a v i g a t i n g  d i f f e r e n t  c u l t u r a l  n o r m s  w a s  a n o t h e r.  B u t  t h o s e  w e r e  m i n o r  c o m p a r e d  t o  t h e  b i g g e s t  o b s t a c l e  o f  a l l:  m a n a g i n g  t h e  s t u d y  w i t h o u t  e v e r  s e e n  G u j a r a t  o r  C h a r u t a r  A r o g y a  M a n d a l  (C A M),  t h e  t e a c h i n g  h o s p i t a l  t h a t ‘ s  p a r t n e r i n g  w i t h  B u s t o n  U n i v e r s i t y  o n  t h e  p r o j e c t.  T h e  t e a m  h a s  a l r e a d y  c o m p l e t e d  7 0 0 0 0  p e r s o n - s t u d y,  r e c o r d e d  t h e  d a t a,  a n d  p l a n n e d  o n - t h e - g r o u n d  i n t e r v e n t i o n s  i n  t h e  r u r a l  v i l l a g e s  w h e r e  s h e  h o p e s  t o  h a v e  a  l o n g - t e r m,  v i r t u a l,  p r e s e n c e.  O ’ K e e f e  a n d  S o m a s h e k h a r  N i m b a l k a r,  t h e  h e a d  o f  c r i t i c a l  c a r e  a t  C A M  a n d  t h e  s t u d y ’ s  p r i n c i p a l  i n v e s t i g a t o r  i n  G u j a r a t,  b o t h  a c k n o w l e d g e  s o m e  i n i t i a l  s k e p t i c i s m  a b o u t  s u c h  l o n g - d i s t a n c e  c o l l a b o r a t i o n.  B u t  a t  t h i s  p o i n t,  N i m b a l k a r  s a y s,  “ W e  b e l i e v e  t h a t  w e  h a v e  e x c e e d e d  o u r  e x p e c t a t i o n s,  a n d  t h a t  m a n y  s u c h  f u t u r e  p r o j e c t s  c a n  b e  t a k e n  r o u t i n e l y  i n t o  a c c o u n t.”

The potential for collaboration with CAM was brought to O’Keefe’s attention by two undergraduates in her epidemiology course, Apurv Soni and Nisha Fahey. Both aspiring doctors (who graduated from BU College of Arts & Sciences in 2011) had traveled to India in 2010 with their professor and surgeon at CAM. The students had an interest in international health, and were eager to have an impact before they completed their medical training. When they learned that CAM’s researchers were receptive to a research partnership with an American university, they began discussing what kind of health survey would be most effective. They focused on women’s health, O’Keefe says, because in a community with multigenerational households, a woman’s physical and mental well-being often affects a large circle of relatives and friends. Working with the CAM team’s input, O’Keefe developed a 76-question survey to assess health care needs in the villages near the medical center. Researchers at CAM were eager to develop and implement new programs right away, O’Keefe says, but her experience with studies in Hartford, Connecticut, and in Massachusetts school-based health centers has proven that interventions without strong research behind them are rarely effective in the long run.

“I really felt I couldn’t have conducted an intervention without background data, trying to understand what their needs are, what decisions they make about health care,” O’Keefe says.

Soni and Fahey, who both took a year after graduation to continue the research, traveled to Gujarat in fall 2011, funded by the Dudley Allen Sargent Research Fund, to begin training interviewers and start the survey. Researchers at CAM told them their initial plan, to hire locals, including interviewers, such as Shalini Joshi (right), were hired by a BU team to ask women in Gujarat villages about their health care needs.

It was two aspiring doctors, BU students—and now alums—Apurv Soni (standing from left) and Nisha Fahey (center), who first suggested that the University could play a role in improving women’s health in rural India. While in the country to oversee the survey on women’s health, the BU researchers, including Apurv Soni (right), also educated locals about removing mosquito-borne pools of stagnant water.

“WE CAN OFFER OUR EXPERTISE TO ESTABLISH GOOD SOLID RESEARCH IN A WAY THAT OUR STUDENTS AND FACULTY CAN REALLY CONTRIBUTE. AND THIS IS AN INTERESTING ONE TO WORK ON—A COUNTRY THAT’S CHANGING SO QUICKLY IS EXCITING.”—EILEEN O’KEEFE

The results may be in, but the work is far from over. Having mastered the art of long-distance project management, O’Keefe wants to move implementation forward slowly, eventually visiting the site and then putting interventions in place by the fall of 2013. “For me, this is an ongoing collaboration,” she says. “We’re trying to set up something that other people can build on.”
BU Sargent College’s faculty received $10,561,746 in research funding in 2011–2012. Here is a list of our projects and supporting the agencies and foundations supporting them.

### Agencies

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Title of Project</th>
<th>Agency</th>
<th>Funds Awarded 2011–2012</th>
<th>Total Award</th>
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<tbody>
<tr>
<td>Sudha Arunachalam, professor of speech, language &amp; hearing sciences</td>
<td>Toddlers’ Representations of Verbs: Effects of Delay and Sleep on Verb Meaning</td>
<td>National Institutes of Health (NIH) (Northwestern University subcontract)</td>
<td>$62,141</td>
<td>$62,141</td>
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<td>Helen Barbas, professor of health sciences</td>
<td>Organization of Prefrontal Feedback Circuits</td>
<td>NIH/National Institute of Mental Health (NIMH)</td>
<td>$437,898</td>
<td>$2,375,077</td>
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<td>Prefrontal Anatomic Pathways in Executive Control</td>
<td>NIH/National Institute of Neurological Disorders and Stroke (NINDS)</td>
<td>$385,715</td>
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<td>Helen Barbas and Jamie Bunc, post-doctoral research associate</td>
<td>Prefrontal and Amygdalar Pathways to Memory-Related Medial Temporal Cortex</td>
<td>NIH/NIMH</td>
<td>$55,302</td>
<td>$150,882</td>
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<td>Helen Barbas and Clare Timbale, MPhD student</td>
<td>Circuity of Emotion: Integration in Orbitofrontal/Cortex</td>
<td>NIH/NIMH</td>
<td>$32,428</td>
<td>$178,140</td>
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<td>Jason Boland, assistant professor of health sciences</td>
<td>The Online Brain Atlas Reconciliation Tool</td>
<td>NIH (Cold Springs Harbor subcontract)</td>
<td>$26,490</td>
<td>$176,501</td>
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<td>Jonathan Fumbargo, research assistant professor of speech, language &amp; hearing sciences</td>
<td>Investigating Output Modality for a Brain-Computer Interface for Communication</td>
<td>NIH/National Institute on Deafness and Other Communication Disorders (NIDCD)</td>
<td>$163,533</td>
<td>$300,000</td>
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<td>Yuxian Xu, assistant professor of health sciences</td>
<td>NIH, NHLBI Implementation of a Program to Improve HF Screening and Testing</td>
<td>U.S. Department of Veterans Affairs</td>
<td>$31,686</td>
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<td>Development of Measures of Participation and Environment for Children with Disabilities</td>
<td>Dept. of Education (ED)/National Institute on Disability and Rehabilitation Research (NIDRR)</td>
<td>No cost extension</td>
<td>$987,868</td>
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<td>L. Clarke Cox, clinical associate professor of speech, language &amp; hearing sciences</td>
<td>Hearing Acuity, Cognitive Aging, and Memory for Speech</td>
<td>NIH (Brandeis University subcontract)</td>
<td>$10,500</td>
<td>$41,572</td>
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<td>Marian Farkas, director of training in occupational therapy, Center for Psychiatric Rehabilitation, and E. Sally Rogers, director of research</td>
<td>Improved Employment Outcomes for Individuals with Psychiatric Disabilities</td>
<td>ED</td>
<td>$847,289</td>
<td>$4,245,042</td>
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<td>Marian Farkas</td>
<td>Bringing Recovery Supports to Scale: Technical Assistance/Center Strategy</td>
<td>Substance Abuse &amp; Mental Health Services Administration (SAMHSA)</td>
<td>$51,774</td>
<td>$708,521</td>
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<td>Frank Guenther, professor of speech, language &amp; hearing sciences</td>
<td>Neural Modeling and Imaging of Speech Production</td>
<td>NIH/NICDC</td>
<td>$245,225</td>
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<td>Frank Guenther and Emily Stephen, pre-doctoral student</td>
<td>Sequencing and Initiation in Speech Production</td>
<td>NIH/NICDC</td>
<td>$347,792</td>
<td>$1,738,465</td>
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<td>Christine Held, associate professor of occupational therapy</td>
<td>Decoding Imagined Vocal Productions using Electromyography</td>
<td>NIH/NICDC</td>
<td>$38,300</td>
<td>$201,984</td>
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<td>Kenneth Holt, associate professor of physical therapy</td>
<td>Life Skills: Transitioning from Homelessness to Stable Housing and Community Integration</td>
<td>EQ/NIDRR</td>
<td>$195,598</td>
<td>$559,990</td>
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<td>Don Hutchinson, director of centers, Center for Psychiatric Rehabilitation, and Margaret Ross, director, Behavioral Medications</td>
<td>Boston University Suicide Prevention Program</td>
<td>SAMSHA</td>
<td>$99,230</td>
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<td>Susan Kandarian, professor of health sciences</td>
<td>The Molecular Basis of Muscle Wasting in Cancer Cachexia</td>
<td>NIH/National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)</td>
<td>$387,913</td>
<td>$1,041,213</td>
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<td>Regulation of Gene Expression in Skeletal Muscle NF-κB Signaling in Atrophy</td>
<td>NIH/NIMH</td>
<td>$325,405</td>
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<td>Regulation of Gene Expression in Skeletal Muscle NF-κB Signaling in Atrophy</td>
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<td>Julie Kysar, associate professor of physical therapy</td>
<td>EnhAARC: Enhancing Activity and Participation for Persons with Arthritis</td>
<td>EQ/NIDRR</td>
<td>$799,968</td>
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<td>Gerard Kuki, professor of speech, language &amp; hearing sciences</td>
<td>Central Factors in Auditory Masking</td>
<td>NIH/NICDC</td>
<td>$558,668</td>
<td>$2,798,231</td>
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<td>Core-Center Grant—Sound Field Laboratory (Core 1)</td>
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<td>Spatial Hearing, Attention, and Informational Masking in Speech Identification</td>
<td>U.S. Air Force</td>
<td>$233,562</td>
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<td>Suzanne Kirsch, associate professor of speech, language &amp; hearing sciences</td>
<td>Theoretically-Based Treatment for Sentence Comprehension Deficits in Aphasia</td>
<td>NIH/NICDC</td>
<td>$581,837</td>
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<td>Application of Multimodal Imaging Techniques to Examine Language Recovery in Post-Stroke Aphasia</td>
<td>NIH/NICDC</td>
<td>$125,102</td>
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<td>Cara Lewis, assistant professor of physical therapy</td>
<td>Boston University Clinical and Translational Science Award Program (CTSA) (KL2)</td>
<td>NIH/National Center for Health Research Resources</td>
<td>$41,644</td>
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<td>Melanie Mattes, associate dean and associate professor of speech, language &amp; hearing sciences</td>
<td>Effects of Hearing Status on Adult Speech Production</td>
<td>NIH/NICDC</td>
<td>No cost extension</td>
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<td>Susan McCurry, associate professor of occupational therapy</td>
<td>A Deteriorating Study of Cognitive Remediation for Supported Employment</td>
<td>NIH/NIH</td>
<td>$661,973</td>
<td>$2,771,031</td>
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<td>Cognitive Training &amp; Supported Employment in Severe Mental Illness</td>
<td>NIH/NIMH</td>
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<td>Cognitive Training to Improve Work Outcomes in Severe Mental Illness</td>
<td>NIH/NIH</td>
<td>$4,286</td>
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<td>Kathleen Norgren, professor of health sciences</td>
<td>Dynamics of the Vascular Smooth Muscle Cytoarchitecture</td>
<td>NIH/NHLBI</td>
<td>$7,149,580</td>
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<td>Regulation of Contraction of Blood Vessels</td>
<td>NIH/NHLBI</td>
<td>No cost extension</td>
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<td>Subcellular Organization of Signaling in Smooth Muscle</td>
<td>NIH/NHLBI</td>
<td>No cost extension</td>
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<td>Kim Mueser, executive director, Center for Psychiatric Rehabilitation</td>
<td>Enhancing Assertive Community Treatment with CBT and SST for Schizophrenia</td>
<td>NH/NIH</td>
<td>$27,713</td>
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<td>Recovery After An Initial Schizophrenia Episode (RAISE)</td>
<td>NIH/NIH</td>
<td>$14,936</td>
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<td>Integrating Rhea Management &amp; Recovery with Assertive Community Treatment</td>
<td>NIH/NIH</td>
<td>$10,178</td>
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<td>Integrating Rhea Management &amp; Recovery with Assertive Community Treatment</td>
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<td>$12,545</td>
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<td>Gael O'Brien, associate professor of occupational therapy</td>
<td>Impact of Parenting Adolescents and Adults with Autism</td>
<td>NIH (University of Wisconsin subcontract)</td>
<td>$88,902</td>
<td>$499,551</td>
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<td>Paula Quatromoni, associate professor of nutrition</td>
<td>KidChefsTV-An Interactive Digital Learning Experience for Children and Teens to Prevent Childhood Obesity</td>
<td>Dept. of Agriculture</td>
<td>$20,680</td>
<td>$32,880</td>
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<td>Zlata Rivasnova, senior research specialist, Center for Psychiatric Rehabilitation</td>
<td>Advanced Research Training Program in Psychiatric Rehabilitation</td>
<td>ED</td>
<td>$149,980</td>
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<td>Gloria Waters, dean and professor of speech, language &amp; hearing sciences</td>
<td>Assessment of Comprehension Skills in Older Struggling Readers</td>
<td>ED/Institute of Education Sciences</td>
<td>$390,515</td>
<td>$1,507,065</td>
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<td>Functional Neuroimaging Studies of Syntactic Processing</td>
<td>NIH/NINDS (Massachusetts General Hospital subcontract)</td>
<td>$41,553</td>
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<td>Daniel White, research assistant professor of physical therapy</td>
<td>Positive Affect and Community Walking in Older Adults</td>
<td>NIH (Boston Medical Center subcontract)</td>
<td>$11,200</td>
<td>$64,800</td>
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<tr>
<th>PRINCIPAL INVESTIGATOR</th>
<th>TITLE OF PROJECT</th>
<th>FOUNDATION</th>
<th>FUNDS AWARDED 2011–2012</th>
<th>TOTAL AWARDS</th>
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<tbody>
<tr>
<td>Sudha Aronachalam, assistant professor of speech, language &amp; hearing sciences</td>
<td>Two-Year Old's Use of Linguistic Information to Acquire the Meaning of Verbs</td>
<td>American Philosophical Society</td>
<td>$4,000</td>
<td>$4,000</td>
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<td>Terry Ellis, assistant professor of physical therapy</td>
<td>Unveiling the Natural History of Quality of Life and Mobility Decline in Persons with Parkinson's Disease</td>
<td>Davis Phinney Foundation</td>
<td>$32,000</td>
<td>$98,000</td>
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<td>The Role of Exercise on Disability in Women with Parkinson's Disease</td>
<td>Center of Excellence in Women's Health</td>
<td>$92,000</td>
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<td>A Multifactorial Exercise Program to Reduce Falls in People with Parkinson’s Disease</td>
<td>Boston Medical Center Pepper Award</td>
<td>$32,400</td>
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<td>Mahasweta Gogineni, assistant professor of health sciences</td>
<td>Modulation of Inflammation and Fibrosis in the Context of Regeneration in NODCIA</td>
<td>Muscular Dystrophy Association</td>
<td>$119,183</td>
<td>$357,465</td>
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<td>Targeting Regeneration and Tackling Degeneration: A Comprehensive Approach for Treating Muscular Dystrophy</td>
<td>Cure CMD</td>
<td>No cost extension</td>
<td>$100,000</td>
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<td>Evaluation of the Efficacy of BAP-201 Treatment of Dystrophic, Inflammatory, and Regenerative Deficiencies in Non-Deficient Congenital Muscular Dystrophy Animal Model (Db)</td>
<td>Cure CMD</td>
<td>No cost extension</td>
<td>$10,000</td>
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<td>Jennifer Gottlieb, research assistant professor, Center for Psychiatric Rehabilitation</td>
<td>Internet-Based CBT for Schizophrenia: A Pilot RCT Computer-Based Program for Auditory Hallucinations</td>
<td>Brain &amp; Behavior Research Foundation (formerly National Alliance for Research on Schizophrenia and Depression)</td>
<td>$21,891</td>
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<td>Jessica Kraner, assistant professor of occupational therapy</td>
<td>Giving Youth a Voice: A Collaborative Evaluation of the Effectiveness and Feasibility of a Novel Environmental Modification Training for Youth with Disabilities</td>
<td>Noonan Memorial Research Foundation</td>
<td>$75,000</td>
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<td>Jessica Maxwell, clinical assistant professor of physical therapy</td>
<td>Limitations in Participation Following Knee Replacement</td>
<td>American College of Rheumatology Research and Education Foundation (REF)</td>
<td>$74,884</td>
<td>$124,861</td>
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<td>Paula Quatromoni, associate professor of nutrition</td>
<td>The Foxboro Model for Lifestyle Nutrition and Physical Fitness for Students in Grades 1-8</td>
<td>Aetna Foundation</td>
<td>$12,500</td>
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<td>Cara Stepp, assistant professor of speech, language &amp; hearing sciences</td>
<td>Voluntary Control of Anterior Neck Musculature in Parkinsonian Dysphonia</td>
<td>American Laryngological Association</td>
<td>$10,000</td>
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<td>Robert Wagner, professor of physical therapy</td>
<td>Continuous Monitoring of Daily Activity Levels in the Home and Community Setting: Differences between Elderly with or without a History of Falls</td>
<td>Leiden University Medical Center</td>
<td>$25,770</td>
<td>$50,340</td>
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<td>Daniel White, research assistant professor of physical therapy</td>
<td>Factors for Change in Day-to-Day Walking in Knee OA</td>
<td>Foundation for Physical Therapy</td>
<td>$20,000</td>
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</tbody>
</table>
Facility in Print

Our Faculty's Research Reaches Audiences Across the Globe: A Selection of Publications and Articles Written by BU Sargent College Faculty During 2011–2012.


Physical and Occupational Therapy in Pediatrics:

Coster, W. J. “Evaluating the Structural Properties of Suprahyoid Muscles and Zumwalt, A. C. “Evaluating the Structural
Dysphagia, 26, 345–51 (2011).


BU Sargent College

WHO WE ARE

STUDENTS UNDERGRADUATE GRADUATE

Average SAT 1930 n/a 1213

Average GRE n/a n/a 1213

Faculty

Full-time 70

Part-time 64

Alumni 15,649 in 53 countries

StudentS undergraduate graduate

number of full-time students (as of spring 2012)

average gre n/a 1213

average gpa 3.20 3.40

international students 461 in 103 countries

Graduation Rates

% of first-time, full-time, degree-awarding students who earned a degree within six years of enrollment, including those who transferred

BA 68% 77%

BS 62% 72%

MA 76% 92%

PhD 97% 97%

What’s Next?

76% of graduates who responded were employed or attending graduate school within 9 months of graduation.

PROGRAMS OF STUDY

Applied Anatomy & Physiology

Athletic Training

Behavior & Health

Health Science

Human Physiology (Pre-Med)

Nutrition

Occupational Therapy

Physical Therapy

Rehabilitation Sciences

Speech, Language & Hearing Sciences

Speech-Language Pathology

SPECIAL PROGRAMS

• Combined BS and MPH in Public Health

• Combined BS in Athletic Training and Doctor of Physical Therapy

• Combined BS in Health Studies and Doctor of Physical Therapy

• Combined BS in Therapeutic Studies and MS in Occupational Therapy

U.S. News & World Report Best Graduate School Rankings

Our graduate programs are officially among the nation’s best—Sargent programs tracked by U.S. News & World Report all rank in the top 8 percent in their respective fields:

• Occupational Therapy Program ranked number 2 out of 156 programs

• Physical Therapy Program ranked number 16 out of 201 programs

• Speech-Language Pathology Program ranked number 21 out of 250 programs

National Certification Board Exam Passing Rates

Percentage of BU Sargent College students in entry-level graduate programs who passed the exam the first time (data averaged over the past three years):

Nutrition 100%

Occupational Therapy 96%

Physical Therapy 99%

Speech-Language Pathology 100%

ABOUT US

Boston University College of Health & Rehabilitation Sciences: Sargent College has been defining health care leadership for more than 130 years. As knowledge about health and rehabilitation increases and society’s health needs become more complex, BU Sargent College continuously improves its degree programs to meet the needs of future health professionals. Our learning environment fosters the values, effective communication, and clinical skills that distinguish outstanding health professionals. Our curriculum also includes an important fieldwork component, providing students in every degree program with substantive clinical experience. Clinical internships are available at more than 1,400 health care facilities across the country. The College also operates outpatient rehabilitation practices that offer a full range of services to the greater Boston community.
Get in Touch
To visit BU Sargent College or learn more about our academic programs, research, and clinical practice, please contact us:

Email: sargrad@bu.edu
Phone: 617-353-2713

Mail: Boston University, College of Health & Rehabilitation Sciences: Sargent College, 635 Commonwealth Avenue, Boston, Massachusetts 02215

Online: www.bu.edu/sargent